

RIDING TO THE TOP
SITE IMPROVEMENTS
WINDHAM, MAINE

STORMWATER MANAGEMENT REPORT

May 2026

Prepared for:
Riding to the Top
14 Lilac Drive
Windham, Maine 04062

Prepared by:

verdantas

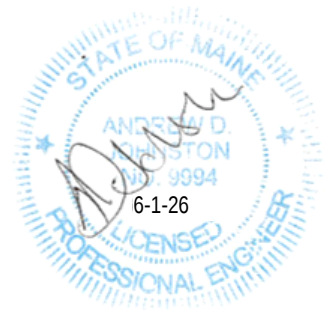


TABLE OF CONTENTS	
INTRODUCTION AND BACKGROUND	2
Site History	2
Stormwater Management	2
EXISTING CONDITIONS	2
Receiving Waters	3
Historical Flooding	3
Alterations to Natural Drainageways	3
PROJECT DESCRIPTION	3
Stormwater Management	3
METHODOLOGY AND MODELING ASSUMPTIONS	3
PROPOSED BMPS	4
STORMWATER QUANTITY ANALYSIS	5
Pre-development Conditions	5
Post-Development Conditions	5
Water Quantity Analysis Summary	5
STORMWATER QUALITY ANALYSIS	5
SOIL EROSION AND SEDIMENT CONTROL	6
STORMWATER MAINTENANCE PLAN	6
CONCLUSIONS	6
Limitations	6
FIGURES	0
ATTACHMENT A -STORMWATER QUALITY CALCULATIONS.....	1
ATTACHMENT B -HYDROCAD RUNOFF AND ROUTING CALCULATIONS.....	2
ATTACHMENT B (i) -PRE-DEVELOPMENT MODEL RESULTS	3
ATTACHMENT B (ii) -POST-DEVELOPMENT MODEL RESULTS	4
ATTACHMENT C - STORMWATER MAINTENANCE MANUAL	5

INTRODUCTION AND BACKGROUND

Verdantas has prepared the following stormwater management analysis for the expansion of the Riding to the Top facility in Windham, Maine. The property is described as Tax Map 7, Lot 27B on the town assessor's database and has a total land area of approximately 52 acres. Access to the site is provided off Land of Nod Road, via a private Drive, Lilac Drive.

Recent Master Plan work produced a schematic layout of new facilities at the site including a new barn, a new outdoor riding arena, new tractor shed, improvements to the existing building, re-configured parking, and updated utility infrastructure at the site.

Site History

The project parcel has a long history of farm-related use dating back to at least 1956, the earliest aerial imagery available. At that time, the northern portion of the property functioned as open fields, while the southern portion remained in a naturally wooded condition. The wooded southern half includes areas that are now mapped as wetlands and appear to have been forested and undisturbed through the mid-20th century. Since the 1990's it has served as a therapeutic riding center with various paddocks, buildings, and gravel parking areas. Based on the amount of re-development on the site it is anticipated that the project will require a Stormwater Permit from the MDEP.

Stormwater Management

Stormwater runoff from the project site generally drains in a southerly direction to a large wetland area located in the southern portion of the site. The wetland areas are tributary to Small Brook, then Inkhorn Brook and ultimately tributary to the Presumscot River. There are currently no stormwater quality or quantity control BMPs on the project site.

New stormwater Best Management Practices BMPs have been designed to capture and treat runoff from the new improvements associated with this project. These include roof drip line filters, and bioretention basins. The new BMP's will provide water quantity and water quality treatment for runoff from new impervious and developed areas associated with new development.

The new stormwater management system will maintain the existing drainage patterns at the site, while protecting water quality and ensuring that there is no increase in peak runoff from the property during design storm conditions. This stormwater management analysis has been prepared in accordance with the Maine Department of Environmental Protection (MDEP) Chapter 500 Regulations for Basic, General and Flooding Standards to ensure that the development will not result in a degradation of water quality or any other significant impacts to locations downstream of the development site because of stormwater runoff.

EXISTING CONDITIONS

Currently a substantial portion of the site is developed with buildings, gravel areas, and lawn areas. The southern portion of the site is wooded and contains a large wetland area. The project site consists of 1.67 acres of existing impervious surface area and 7.06 acres of existing developed area. There are currently no MDEP permits associated with the existing site.

Receiving Waters

Runoff from site drains Southery to a large wetland area. The wetland area is tributary to Small Brook, Inkhorn Brook, and the Presumpscot River. Neither Small Brook nor Inkhorn Brook are identified as Urban Impaired Stream watershed by the MDEP.

Historical Flooding

The site is not within Flood Zone as identified on the FIRM map for the Town of Windham, Community Panel Number 230055 C065 7F, dated June 20, 2024.

Alterations to Natural Drainageways

The project will not result in any alteration of natural drainageways.

PROJECT DESCRIPTION

The proposed redevelopment will include the construction of a new horse barn, gravel parking areas and additions to existing buildings and associated landscaping, utilities, and stormwater management facilities. The proposed project will utilize existing re-located propane tanks, and electric utilities. The existing onsite well will be permitted as a community well through the Department of Health and Human Services.

The site improvements will result in approximately 1.0 acres of new impervious surface area and 0.36 acres of new developed area.

Stormwater Management

The stormwater BMPs proposed to capture and treat runoff from the new developed areas of the site include roof drip line filters and bio-retention basins. These BMP's have been sized and designed in accordance with current State of Maine Chapter 500 Stormwater Law. The stormwater BMPs are designed to capture, treat, and detain runoff from impervious and developed areas of the site and will discharge to existing receiving waters via riprap aprons designed to dissipate runoff velocities.

METHODOLOGY AND MODELING ASSUMPTIONS

Runoff and routing calculations have been performed for the watershed areas affected by the proposed development under pre-development and post-development conditions scenarios. Time of concentration and runoff curve number calculations have been performed using the method described in Natural Resource Conservation Service (NRCS) Technical Release 55 (TR-55) – Urban Hydrology for Small Watersheds. The TR-20 based HydroCAD modeling software has been utilized to perform the more complex runoff and routing calculations, some of which are beyond the scope of the TR-55 method. Time of concentration calculations have been amended where the value given by the TR-55 method is less than six minutes (0.1hr). In these cases, a standard minimum value of six minutes has been used to keep this parameter within the acceptable working range of the model and prevent computational errors.

Design rainfall events have been modeled using the SCS Type III Hydrograph for 24-hour duration storms. The rainfall depth for each return period is taken from Maine Department of Environmental Protection Chapter 500 Stormwater Management, Appendix H (Cumberland County). The rainfall depth values for standard design storm frequencies are shown in the table below.

	TABLE 1 - 24-Hr Rainfall Depths for Cumberland County at Design Storm Frequencies			
	Maine Chapter 500: Stormwater Management, Appendix H			
Frequency	2-Year	10-Year	25-Year	100-Year
Rainfall Depth	3.1 in	4.6 in	5.8 in	8.1 in

Soil types around the site have been identified using the Natural Resource Conservation Service (NRCS) Web Soil Survey. The existing topography of the site was determined by field survey, and utilizing lidar contours. The existing vegetative cover was identified by site inspection, survey, and aerial photography. Soil types are identified on the attached pre and post development watershed plans.

Under pre-development conditions the site is represented by six subcatchments that drain to one Point of Analysis, Study Point SP-1. This study point represents the large wetland area in the southern portion of the site.

Under the post-development conditions scenario, the site is divided into 13 smaller subcatchment areas to model the impact of localized storage within the system. The overall routing configuration remains similar to pre-developed conditions. In this way, a direct comparison can be made of pre-development and post-development runoff values at the Design Points.

PROPOSED BMPS

New Stormwater Best Management Practices (BMPs) have been designed to effectively capture, detain, and treat runoff from the new and existing impervious areas associated with the new development at the site, before allowing it to discharge in a non-erosive manner to downstream areas.

The new BMP proposed for this project is as follows:

- Filtering Drip Strips – Filtering drip edges at the exterior pitched roof segments, collect runoff from the building's roof. A stone layer is provided to store the water quality volume from the roofs. The sand filter media provides treatment for this runoff. Once through the soil media, the runoff is collected in a perforated underdrain pipe system and discharged downstream. The filter structure provides for the slow release of smaller storm events, minimizing stream channel erosion, and cooling of the discharge.
- Bioretention Basins - The bioretention cells consist of shallow depressions filled with filter soil media and planted with a variety of grasses and shrubs. Runoff directed to the BMPs is detained temporarily and passes slowly through the soil media and the root zone of the planted material before draining into an underdrain system that discharges to an outlet culvert. The soil media and root zone activity provides water quality treatment for the runoff by removing suspended particles, and through uptake and binding of dissolved pollutants and nutrients.

STORMWATER QUANTITY ANALYSIS

Pre-development Conditions

The overall model for the site is represented by six subcatchment areas tributary to one point of analysis, SP-1. Full details of the pre-development subcatchment areas, cover conditions and time of concentration flow paths are described in detail in the supporting HydroCAD documentation included in this report. A Predevelopment Conditions Watershed Plan is included in this report.

Post-Development Conditions

In the post-development condition, the overall site is divided into 13 watershed areas and the same point of analysis, SP-1. Full details of the post-development subcatchment areas, cover conditions and time of concentration flow paths are described in detail in the supporting HydroCAD documentation included in this report. A Post-Development Conditions Watershed Plan is included as part of this report.

Water Quantity Analysis Summary

The table below summarizes the peak runoff values for predevelopment and post-development conditions during each of the design storm events analyzed.

Peak Rates of Runoff												
POA	Total Watershed Area		Avg. Weighted Curve No.		2-Year		10-Year		25-Year		100-Year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
SP-1	28.59	28.59	63	64	4.6	4.6	14.9	14.6	25.9	24.7	49.9	47.4

As indicated in the table above the post development peak rates of runoff are maintained at or below the pre-development peak rates of runoff for all storm events at Study Points SP-1.

STORMWATER QUALITY ANALYSIS

Water Quality Treatment Measures

The project has been designed in accordance with the current Stormwater Law (Chapter 500) standards. As indicated in the stormwater calculations, the project will provide treatment for over 95% of the new impervious area.

The project will result in approximately 1.0 acres of new impervious surface area.

Water quality treatment will be provided by three bioretention basins and numerous roof drip line filtering drip strips designed in accordance with the latest version of the Maine Department of Environmental Protection BMPs Technical Design Manual, to achieve the required stormwater quality treatment percentages.

SOIL EROSION AND SEDIMENT CONTROL

A comprehensive Soil Erosion and Sediment Control (SESC) narrative has been prepared that includes Best Management Practices (BMPs) associated with the proposed construction activities. The location of SESC BMPs is shown on the accompanying plans. These are further described on the details and notes sheets in the accompanying plan set.

The Erosion and Sediment Control plan and details outline the required construction measures and techniques that will reduce potential degradation of the water quality at downstream locations. Temporary erosion control measures will be incorporated during construction, and long-term surface stabilization practices have been designed as part of the site development, thus minimizing the potential for erosion and sediment transport. These measures include the constructed BMPs for filtration of runoff from smaller storm events, riprap, permanent seeding, and other vegetative stabilization measures. Detailed information on the specific erosion and sedimentation control practices that are to be used on the site are provided on the following plan sheet, which will be included as part of the construction documents for the project.

STORMWATER MAINTENANCE PLAN

A Stormwater Management Inspection and Maintenance Manual has been prepared specifically for the project and is included in this report.

CONCLUSIONS

The stormwater management system designed for this project will mitigate impacts of development on stormwater runoff peak discharge rates and provide treatment of non-point source pollutants in the runoff in accordance with Maine's Stormwater Management Act and Regulations. Based on the analysis described herein, it is expected that runoff from the proposed development will not cause adverse impacts to downstream properties.

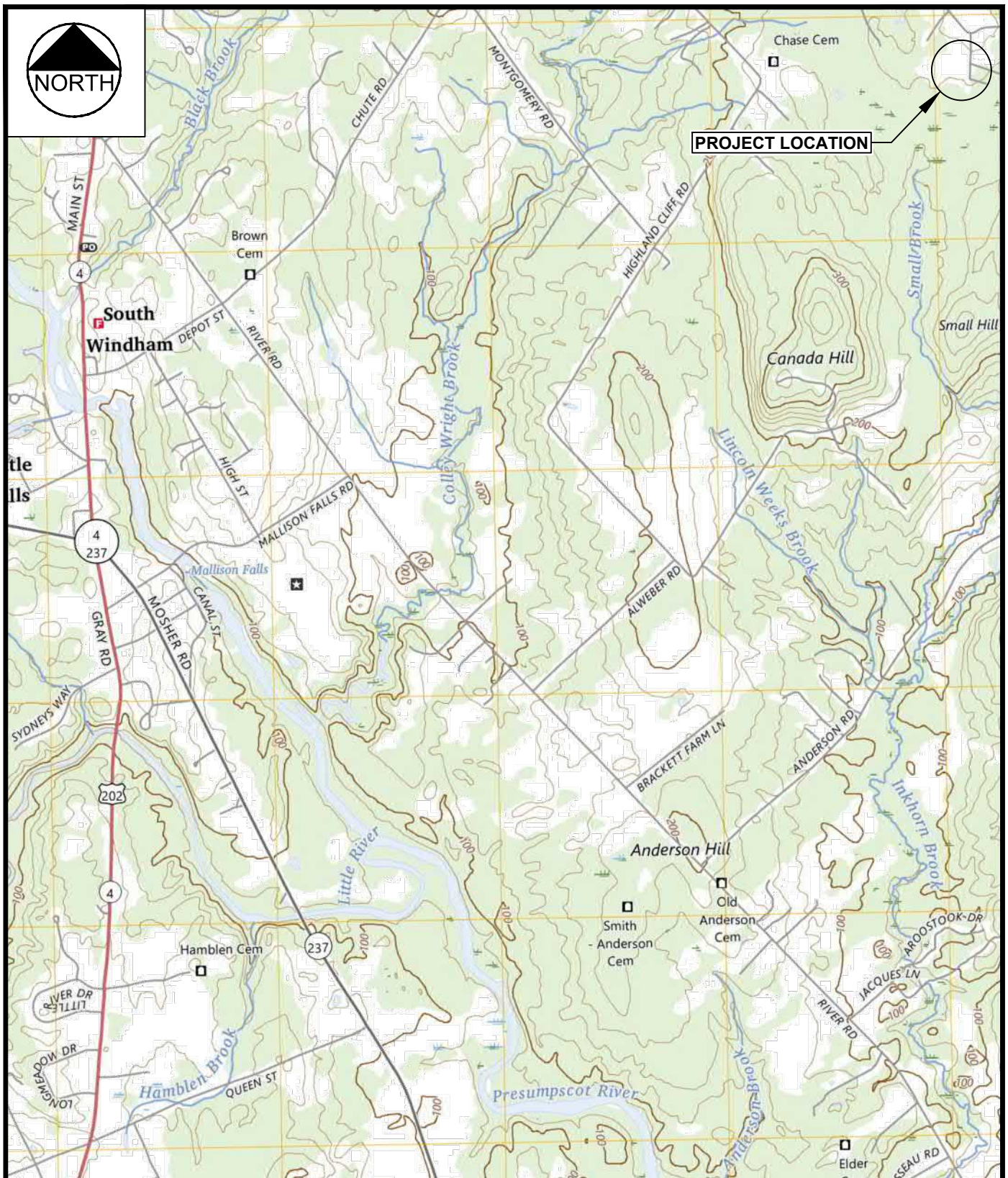
Limitations

This analysis is based on the information available to the engineer on site conditions and has been conducted using standard industry software designed to analyze comparative changes in land cover conditions. The accuracy of the runoff and routing calculations is limited by the methodology used in the software and the results should be viewed as suitable for comparative studies only.

FIGURES AND ATTACHMENTS

- | | |
|------------------|--|
| 1. Figure 1 | USGS Map |
| 2. Figure 2 | FEMA Flood Map |
| 3. Figure 3 | USDA SCS Web Soil Survey Map |
| 4. D-100 & D-101 | Watershed Plans |
| 5. Attachment A | Stormwater Quality Calculations |
| 6. Attachment B | TR-20 Computations (HydroCAD) |
| | i. Pre-development Model |
| | ii. Post-development Model |
| 7. Attachment C | Stormwater Operations and Maintenance Manual |

FIGURES



REFERENCE: USGS TOPOGRAPHIC SURVEY GORHAM QUADRANGLE

RIDING TO THE TOP WINDHAM, MAINE

USGS LOCATION MAP

verdantas

DRAWN: ADJ	DATE: JUNE 2026
DESIGNED: ADJ	SCALE: NTS
CHECKED: ADJ	JOB NO. 25-39094
FILE NAME: FIGURES	

FIGURE

1

National Flood Hazard Layer FIRMette



70°22'58"W 43°45'7"N



70°22'21"W 43°44'41"N



Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE)
Zone A, V, A99
- With BFE or Depth
Zone AE, AO, AH, VE, AR
- Regulatory Floodway

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile
Zone X
- Future Conditions 1% Annual Chance Flood Hazard
Zone X
- Area with Reduced Flood Risk due to Levee. See Notes.
Zone X
- Area with Flood Risk due to Levee
Zone D

OTHER AREAS OF FLOOD HAZARD

- NO SCREEN
- Area of Minimal Flood Hazard
Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard
Zone D

OTHER AREAS

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

GENERAL STRUCTURES

- Cross Sections with 1% Annual Chance
Water Surface Elevation
20.2
17.5
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study

OTHER FEATURES

- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

- Digital Data Available
- No Digital Data Available
- Unmapped

MAP PANELS



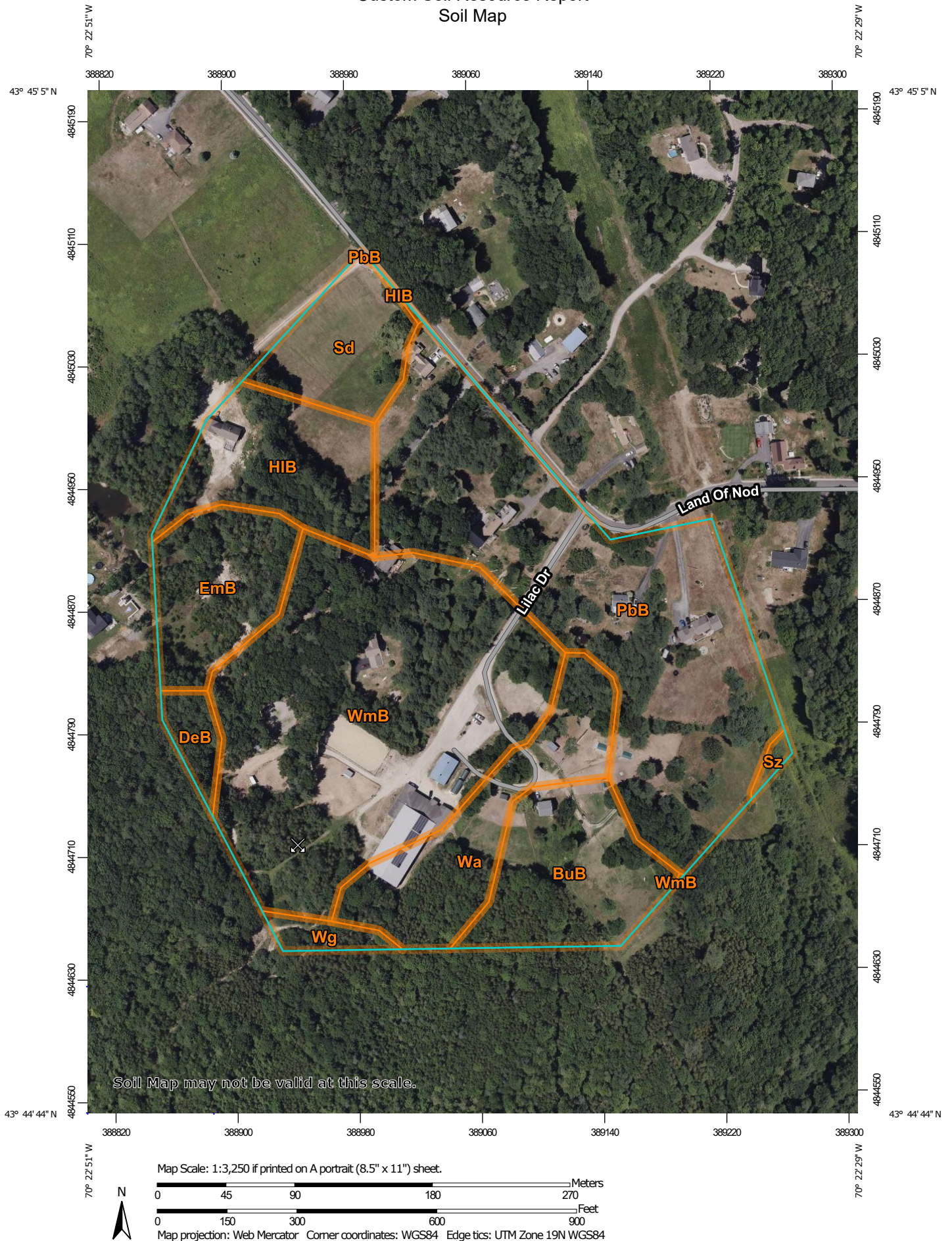
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

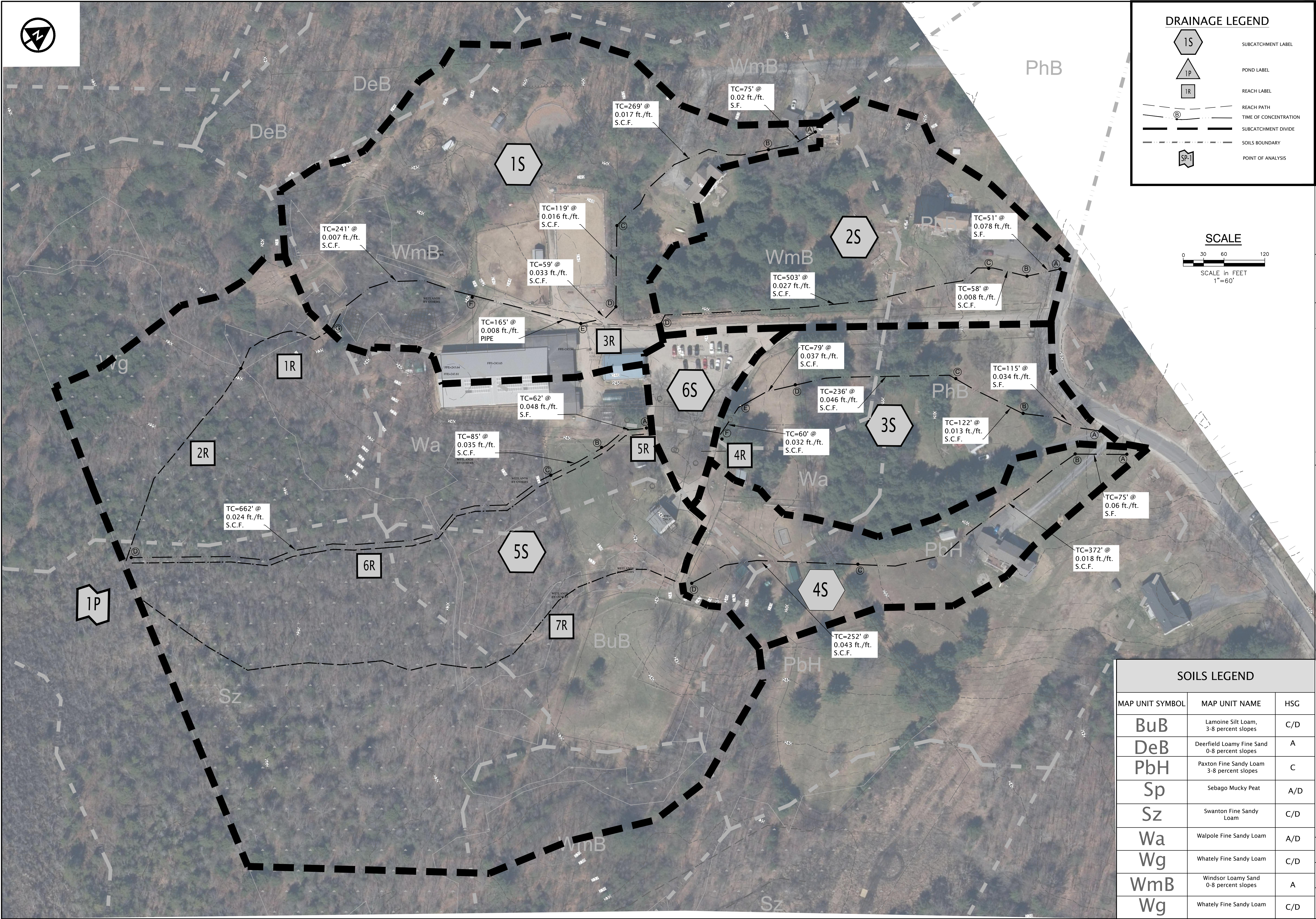
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **2/17/2026 at 2:41 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Custom Soil Resource Report Soil Map



e:\arc folders\25-36465 riding to the top master plan\drawings\25-36465 drainage_recover.dwg 6/7/2026 7:11 PM



DRAINAGE LEGEND

1S

1P

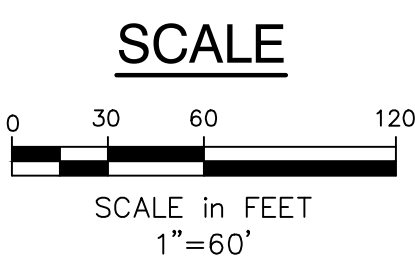
1R

B

B

SP-1

SUBCATCHMENT LABEL
POND LABEL
REACH LABEL
REACH PATH
TIME OF CONCENTRATION
SUBCATCHMENT DIVIDE
SOILS BOUNDARY
POINT OF ANALYSIS



SOILS LEGEND		
MAP UNIT SYMBOL	MAP UNIT NAME	HSG
BuB	Lamoine Silt Loam, 3-8 percent slopes	C/D
DeB	Deerfield Loamy Fine Sand 0-8 percent slopes	A
PbH	Paxton Fine Sandy Loam 3-8 percent slopes	C
Sp	Sebago Mucky Peat	A/D
Sz	Swanton Fine Sandy Loam	C/D
Wa	Walpole Fine Sandy Loam	A/D
Wg	Whately Fine Sandy Loam	C/D
WmB	Windsor Loamy Sand 0-8 percent slopes	A
Wg	Whately Fine Sandy Loam	C/D

verdantas

541 US ROUTE ONE, SUITE 21
FREEMPORT, MAINE 04032
207-869-9050

14 LILAC DRIVE, WINDHAM, MAINE

RIDING TO THE TOP

THERAPEUTIC RIDING CENTER

PRE-DEVELOPMENT DRAINAGE PLAN

DESIGNED BY	TP	DRAWN BY	TP	CHECKED BY	AJ	PROJECT NO.	25-36465
CHKD BY							
DATE							
REVISION							
No.							

DATE

02/09/2026

SCALE

1"=60'

SHEET

D-100

ATTACHMENT A -STORMWATER QUALITY CALCULATIONS

RTT Water Quality Calculation Summary

Subcatchment Area	Impervious Area	Landscaped Area	Developed Area	Water Quality Volume Required	Water Quality Volume Provided	BMP	Min. Area Req'd	Area Provd
TREATED AREAS								
11S	12633	4209	16842	1193	3052	BIOCELL BR-1	1011	1789
12S	6066	0	6066	506	615	DRIP STRIP 3		
31S	7198	4894	12092	763	1149	BIOCELL BR-2	651	725
51S	9875	0	9875	823	840	DRIP STRIP-1		
52S	4208	2272	6480	426	495	DRIP STRIP-2		
53S	10126	0	10126	844	1040	DRIP STRIP-4		
61S	3393	1892	5285	346	544	BIOCELL-BR-3	294	337
TOTAL TREATED	53499	13267	66766					

1. WQV is calculated as 1" over the contributing impervious area plus 0.4" over the contributing landscaped area

2. Minimum area requirements are calculated as 5% contributing impervious area plus 2% contributing landscaped area for underdrained soil filter and 7% contributing impervious area plus 3% contributing landscaped area for bioretention cells

25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.10"

Printed 6/7/2026

Page 1

Stage-Area-Storage for Pond BR-1: BR-1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
241.50	1,789	0	244.20	1,920	2,446
241.55	1,789	30	244.25	1,953	2,543
241.60	1,789	59	244.30	1,987	2,641
241.65	1,789	89	244.35	2,020	2,741
241.70	1,789	118	244.40	2,055	2,843
241.75	1,789	148	244.45	2,089	2,947
241.80	1,789	177	244.50	2,124	3,052
241.85	1,789	207	244.55	2,165	3,160
241.90	1,789	236	244.60	2,206	3,269
241.95	1,789	266	244.65	2,248	3,380
242.00	1,789	295	244.70	2,290	3,494
242.05	1,789	325	244.75	2,333	3,609
242.10	1,789	354	244.80	2,376	3,727
242.15	1,789	384	244.85	2,419	3,847
242.20	1,789	413	244.90	2,462	3,969
242.25	1,789	443	244.95	2,507	4,093
242.30	1,789	472	245.00	2,551	4,219
242.35	1,789	502			
242.40	1,789	531			
242.45	1,789	561			
242.50	1,789	590			
242.55	1,789	620			
242.60	1,789	649			
242.65	1,789	679			
242.70	1,789	708			
242.75	1,789	738			
242.80	1,789	767			
242.85	1,789	797			
242.90	1,789	827			
242.95	1,789	856			
243.00	1,789	886			
243.05	1,789	915			
243.10	1,789	945			
243.15	1,789	974			
243.20	1,789	1,004			
243.25	1,789	1,033			
243.30	1,789	1,063			
243.35	1,789	1,092			
243.40	1,789	1,122			
243.45	1,789	1,151			
243.50	1,789	1,181			
243.55	1,789	1,270			
243.60	1,789	1,360			
243.65	1,789	1,449			
243.70	1,789	1,539			
243.75	1,789	1,628			
243.80	1,789	1,717			
243.85	1,789	1,807			
243.90	1,789	1,896			
243.95	1,789	1,986			
244.00	1,789	2,075			
244.05	1,821	2,165			
244.10	1,854	2,257			
244.15	1,886	2,351			

25-36465 POST

Type III 24-hr 25-YR Rainfall=5.80"

Prepared by Atlantic Resource Consultants

Printed 4/20/2026

HydroCAD® 10.20-2h s/n 08018 © 2024 HydroCAD Software Solutions LLC

Stage-Area-Storage for Pond BR-2: BR-2 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
242.91	725	697	243.43	809	1,092
242.92	725	704	243.44	811	1,100
242.93	725	711	243.45	813	1,108
242.94	725	719	243.46	815	1,116
242.95	725	726	243.47	817	1,124
242.96	725	733	243.48	819	1,132
242.97	725	740	243.49	821	1,141
242.98	725	748	243.50	823	1,149
242.99	725	755	243.51	825	1,157
243.00	725	762	243.52	827	1,165
243.01	727	769	243.53	829	1,174
243.02	729	777	243.54	832	1,182
243.03	731	784	243.55	834	1,190
243.04	733	791	243.56	836	1,199
243.05	735	799	243.57	838	1,207
243.06	736	806	243.58	840	1,215
243.07	738	813	243.59	842	1,224
243.08	740	821	243.60	844	1,232
243.09	742	828	243.61	846	1,241
243.10	744	836	243.62	848	1,249
243.11	746	843	243.63	850	1,258
243.12	748	850	243.64	852	1,266
243.13	750	858	243.65	854	1,275
243.14	752	865	243.66	856	1,283
243.15	754	873	243.67	858	1,292
243.16	756	881	243.68	860	1,300
243.17	758	888	243.69	862	1,309
243.18	760	896	243.70	864	1,318
243.19	762	903	243.71	867	1,326
243.20	764	911	243.72	869	1,335
243.21	766	919	243.73	871	1,344
243.22	768	926	243.74	873	1,352
243.23	769	934	243.75	875	1,361
243.24	771	942	243.76	877	1,370
243.25	773	949	243.77	879	1,379
243.26	775	957	243.78	881	1,387
243.27	777	965	243.79	883	1,396
243.28	779	973	243.80	885	1,405
243.29	781	980	243.81	888	1,414
243.30	783	988	243.82	890	1,423
243.31	785	996	243.83	892	1,432
243.32	787	1,004	243.84	894	1,441
243.33	789	1,012	243.85	896	1,450
243.34	791	1,020	243.86	898	1,459
243.35	793	1,028	243.87	900	1,468
243.36	795	1,036	243.88	902	1,477
243.37	797	1,044	243.89	904	1,486
243.38	799	1,052	243.90	907	1,495
243.39	801	1,060	243.91	909	1,504
243.40	803	1,068	243.92	911	1,513
243.41	805	1,076	243.93	913	1,522
243.42	807	1,084	243.94	915	1,531

25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.20-2h s/n 08018 © 2024 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=5.80"

Printed 4/20/2026

Stage-Area-Storage for Pond BR-3: BR-3 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
242.91	337	324	243.43	412	515
242.92	337	327	243.44	414	519
242.93	337	331	243.45	416	523
242.94	337	334	243.46	418	527
242.95	337	337	243.47	419	532
242.96	337	341	243.48	421	536
242.97	337	344	243.49	423	540
242.98	337	347	243.50	425	544
242.99	337	351	243.51	427	549
243.00	337	354	243.52	429	553
243.01	339	358	243.53	431	557
243.02	340	361	243.54	432	561
243.03	342	364	243.55	434	566
243.04	344	368	243.56	436	570
243.05	345	371	243.57	438	574
243.06	347	375	243.58	440	579
243.07	349	378	243.59	442	583
243.08	350	382	243.60	444	588
243.09	352	385	243.61	446	592
243.10	354	389	243.62	448	597
243.11	355	392	243.63	449	601
243.12	357	396	243.64	451	606
243.13	359	399	243.65	453	610
243.14	361	403	243.66	455	615
243.15	362	407	243.67	457	619
243.16	364	410	243.68	459	624
243.17	366	414	243.69	461	628
243.18	367	418	243.70	463	633
243.19	369	421	243.71	465	638
243.20	371	425	243.72	467	642
243.21	373	429	243.73	469	647
243.22	374	432	243.74	471	652
243.23	376	436	243.75	473	656
243.24	378	440	243.76	475	661
243.25	380	444	243.77	477	666
243.26	381	448	243.78	479	671
243.27	383	451	243.79	481	675
243.28	385	455	243.80	483	680
243.29	387	459	243.81	485	685
243.30	389	463	243.82	487	690
243.31	390	467	243.83	489	695
243.32	392	471	243.84	491	700
243.33	394	475	243.85	493	705
243.34	396	479	243.86	495	710
243.35	397	483	243.87	497	715
243.36	399	487	243.88	499	720
243.37	401	491	243.89	501	725
243.38	403	495	243.90	503	730
243.39	405	499	243.91	505	735
243.40	407	503	243.92	507	740
243.41	408	507	243.93	509	745
243.42	410	511	243.94	511	750

Roof Drip Line Filter DF-1 Sizing		
Riding Arena WS-51		Units
Impervious Area	9,785	SF
Landscaped Area	0	SF
Storage Volume Required	815	CF
<u>Storage Volume Provided</u>		
Length	140.0	FT
Width	3.0	FT
Depth	2.5	FT
Stone Porosity	0.4	
Length	140.0	FT
Width	3.0	FT
Depth	2.5	FT
Stone Porosity	0.4	
Total Water Quality Storage Volume Provided	840	CF

Roof Drip Line Filter DF-2 Sizing		
WS-52		Units
Impervious Area	4,208	SF
Landscaped Area	2,272	SF
Storage Volume Required	426	CF
<u>Storage Volume Provided</u>		
Length	78.0	FT
Width	3.0	FT
Depth	2.5	FT
Stone Porosity	0.4	
Length	87.0	FT
Width	3.0	FT
Depth	2.5	FT
Stone Porosity	0.4	
Total Water Quality Storage Volume Provided	495	CF

Roof Drip Line Filter DF-3 Sizing		
WS-12		Units
Impervious Area	6,066	SF
Landscaped Area	0	SF
Storage Volume Required	506	CF
<u>Storage Volume Provided</u>		
Length	123.0	FT
Width	5.0	FT
Depth	2.50	FT
Stone Porosity	0.4	
Length	0.0	FT
Width	0.0	FT
Depth	0.0	FT
Stone Porosity	0.0	
Total Water Quality Storage Volume Provided	615	CF

Roof Drip Line Filter DF-4 Sizing		Units
WS-53		
Impervious Area	10,126	SF
Landscaped Area	0	SF
Storage Volume Required	844	CF
<u>Storage Volume Provided</u>		
Length	206.0	FT
Width	5.0	FT
Depth	2.50	FT
Stone Porosity	0.4	
Length	0.0	FT
Width	0.0	FT
Depth	0.0	FT
Stone Porosity	0.0	
Total Water Quality Storage Volume Provided	1,030	CF

25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.20-2h s/n 08018 © 2024 HydroCAD Software Solutions LLC

Printed 4/20/2026

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.593	54	1/2 acre lots, 25% imp, HSG A (OFFSITE) (20S)
2.349	80	1/2 acre lots, 25% imp, HSG C (OFFSITE) (20S, 30S, 40S)
0.226	61	1/4 acre lots, 38% imp, HSG A (OFFSITE) (10S)
1.590	68	<50% Grass cover, Poor, HSG A (10S, 30S, 40S)
0.336	86	<50% Grass cover, Poor, HSG C (50S)
2.666	39	>75% Grass cover, Good, HSG A (10S, 11S, 20S, 30S, 31S, 40S, 50S, 52S, 60S, 61S)
0.170	74	>75% Grass cover, Good, HSG C (20S, 30S)
0.459	76	Gravel roads, HSG A (10S)
0.637	96	Gravel surface, HSG A (20S, 30S, 40S, 50S, 60S)
0.216	96	Gravel surface, HSG B (31S, 61S)
0.087	96	Gravel surface, HSG C (20S, 30S)
0.290	96	Gravel surface, HSG D (11S)
0.896	98	Roofs, HSG D (10S, 12S, 51S, 52S, 53S, 61S)
0.073	98	Unconnected roofs, HSG A (50S)
3.875	30	Woods, Good, HSG A (10S, 50S, 60S)
1.851	30	Woods, Good, HSG A (OFFSITE) (20S, 30S)
0.966	70	Woods, Good, HSG C (30S, 40S)
0.346	70	Woods, Good, HSG C (OFFSITE) (40S)
0.716	77	Woods, Good, HSG D (WETLANDS) (10S)
8.074	77	Woods, Good, HSG D (wetlands) (50S)
1.811	72	Woods/grass comb., Good, HSG C (50S)
0.367	72	Woods/grass comb., Good, HSG C (OFFSITE) (20S)
28.594	64	TOTAL AREA

25-36465 PRE

Prepared by Atlantic Resource Consultants

HydroCAD® 10.20-2h s/n 08018 © 2024 HydroCAD Software Solutions LLC

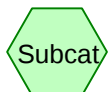
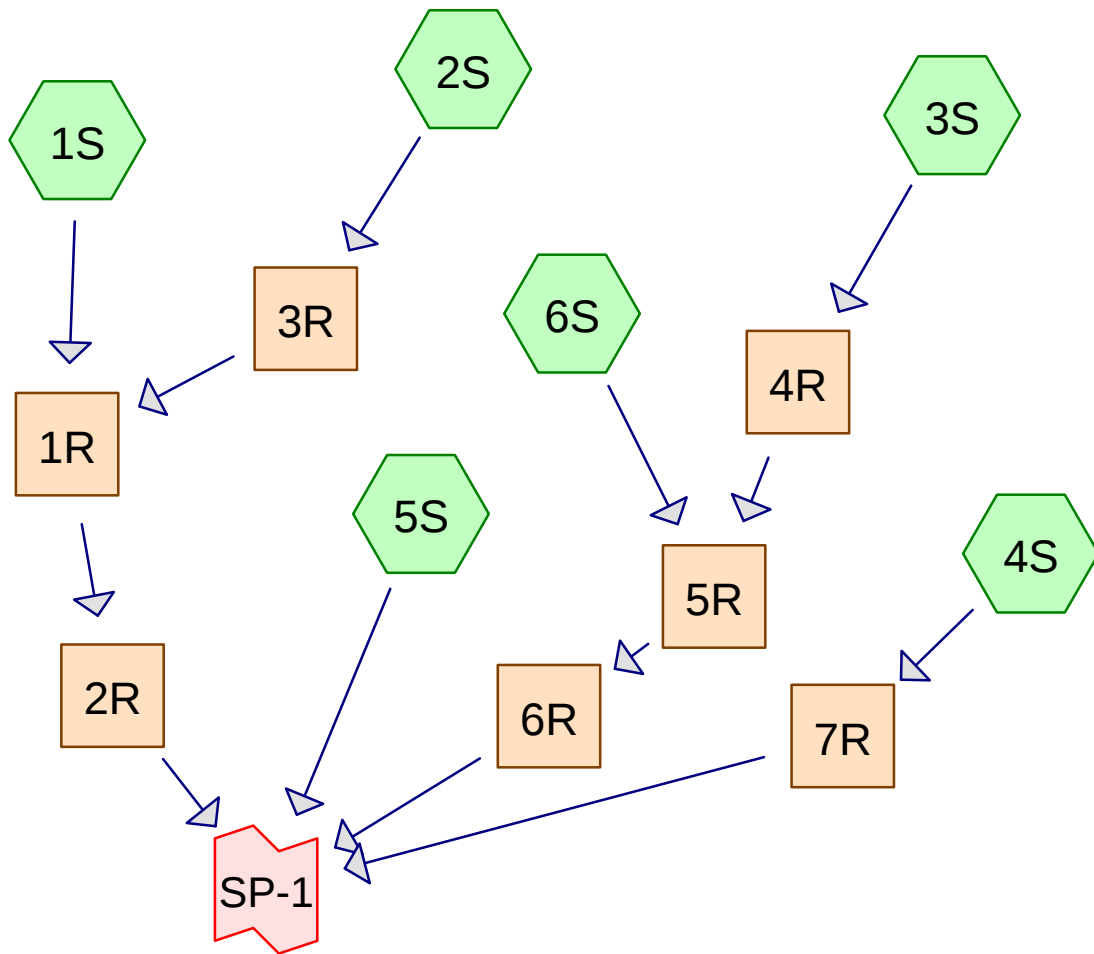
Printed 4/20/2026

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.593	54	1/2 acre lots, 25% imp, HSG A (OFFSITE) (2S)
2.349	80	1/2 acre lots, 25% imp, HSG C (OFFSITE) (2S, 3S, 4S)
0.226	61	1/4 acre lots, 38% imp, HSG A (OFFSITE) (1S)
1.930	68	<50% Grass cover, Poor, HSG A (1S, 3S, 4S)
0.832	86	<50% Grass cover, Poor, HSG C (5S)
2.455	39	>75% Grass cover, Good, HSG A (1S, 2S, 3S, 4S, 5S)
0.170	74	>75% Grass cover, Good, HSG C (2S, 3S)
0.417	76	Gravel roads, HSG A (1S)
0.669	96	Gravel surface, HSG A (2S, 3S, 4S, 5S, 6S)
0.087	96	Gravel surface, HSG C (2S, 3S)
0.261	98	Roofs, HSG D (1S)
0.234	98	Unconnected roofs, HSG A (5S)
4.137	30	Woods, Good, HSG A (1S, 5S, 6S)
1.851	30	Woods, Good, HSG A (OFFSITE) (2S, 3S)
0.966	70	Woods, Good, HSG C (3S, 4S)
0.346	70	Woods, Good, HSG C (OFFSITE) (4S)
0.716	77	Woods, Good, HSG D (WETLANDS) (1S)
8.107	77	Woods, Good, HSG D (wetlands) (5S)
1.881	72	Woods/grass comb., Good, HSG C (5S)
0.367	72	Woods/grass comb., Good, HSG C (OFFSITE) (2S)
28.594	63	TOTAL AREA

ATTACHMENT B -HYDROCAD RUNOFF AND ROUTING CALCULATIONS

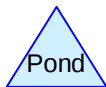
ATTACHMENT B (I) -PRE-DEVELOPMENT MODEL RESULTS



Subcat



Reach



Pond



Link

Routing Diagram for 25-36465 PRE

Prepared by Atlantic Resource Consultants, Printed 6/4/2026
HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

25-36465 PRE

Type III 24-hr 2-YR Rainfall=3.10"

Prepared by Atlantic Resource Consultants

Printed 6/4/2026

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Page 2

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S:	Runoff Area=239,875 sf 6.30% Impervious Runoff Depth=0.13" Flow Length=928' Tc=79.7 min CN=51 Runoff=0.1 cfs 0.059 af
Subcatchment 2S:	Runoff Area=143,759 sf 10.43% Impervious Runoff Depth=0.22" Flow Length=612' Tc=34.8 min CN=55 Runoff=0.2 cfs 0.061 af
Subcatchment 3S:	Runoff Area=128,506 sf 6.46% Impervious Runoff Depth=0.48" Flow Length=612' Tc=47.4 min CN=63 Runoff=0.5 cfs 0.117 af
Subcatchment 4S:	Runoff Area=90,319 sf 9.67% Impervious Runoff Depth=0.87" Flow Length=699' Tc=14.6 min CN=72 Runoff=1.5 cfs 0.150 af
Subcatchment 5S:	Runoff Area=616,776 sf 1.65% Impervious Runoff Depth=0.68" Flow Length=809' Tc=47.9 min UI Adjusted CN=68 Runoff=4.3 cfs 0.801 af
Subcatchment 6S:	Runoff Area=26,339 sf 0.00% Impervious Runoff Depth=0.92" Tc=6.0 min CN=73 Runoff=0.6 cfs 0.046 af
Reach 1R:	Avg. Flow Depth=0.05' Max Vel=0.42 fps Inflow=0.2 cfs 0.120 af n=0.080 L=162.0' S=0.0309 '/ Capacity=10.8 cfs Outflow=0.2 cfs 0.120 af
Reach 2R:	Avg. Flow Depth=0.03' Max Vel=0.25 fps Inflow=0.2 cfs 0.120 af n=0.080 L=334.0' S=0.0240 '/ Capacity=9.1 cfs Outflow=0.2 cfs 0.120 af
Reach 3R:	Avg. Flow Depth=0.14' Max Vel=2.56 fps Inflow=0.2 cfs 0.061 af 15.0" Round Pipe n=0.012 L=282.0' S=0.0110 '/ Capacity=7.3 cfs Outflow=0.2 cfs 0.061 af
Reach 4R:	Avg. Flow Depth=0.17' Max Vel=5.03 fps Inflow=0.5 cfs 0.117 af 18.0" Round Pipe n=0.012 L=20.0' S=0.0335 '/ Capacity=20.8 cfs Outflow=0.5 cfs 0.117 af
Reach 5R:	Avg. Flow Depth=0.18' Max Vel=6.33 fps Inflow=0.6 cfs 0.163 af 12.0" Round Pipe n=0.012 L=20.0' S=0.0485 '/ Capacity=8.5 cfs Outflow=0.6 cfs 0.163 af
Reach 6R:	Avg. Flow Depth=0.05' Max Vel=0.36 fps Inflow=0.6 cfs 0.163 af n=0.080 L=803.0' S=0.0248 '/ Capacity=9.3 cfs Outflow=0.5 cfs 0.163 af
Reach 7R:	Avg. Flow Depth=0.06' Max Vel=0.39 fps Inflow=1.5 cfs 0.150 af n=0.080 L=873.0' S=0.0206 '/ Capacity=8.5 cfs Outflow=0.7 cfs 0.150 af
Link SP-1:	Inflow=4.6 cfs 1.234 af Primary=4.6 cfs 1.234 af

Total Runoff Area = 28.594 ac Runoff Volume = 1.234 af Average Runoff Depth = 0.52"
95.40% Pervious = 27.278 ac 4.60% Impervious = 1.317 ac

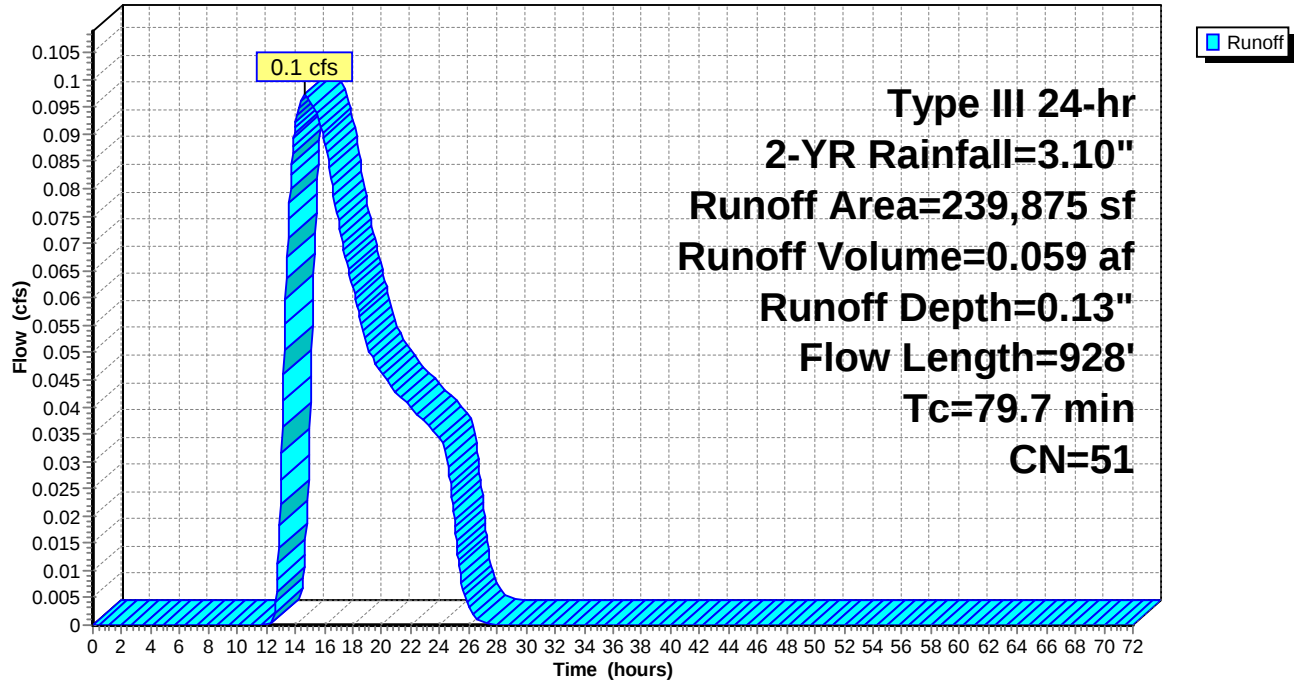
Summary for Subcatchment 1S:

Runoff = 0.1 cfs @ 14.62 hrs, Volume= 0.059 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
18,161	76	Gravel roads, HSG A
11,376	98	Roofs, HSG D
* 9,860	61	1/4 acre lots, 38% imp, HSG A (OFFSITE)
111,814	30	Woods, Good, HSG A
* 31,181	77	Woods, Good, HSG D (WETLANDS)
37,056	68	<50% Grass cover, Poor, HSG A
20,427	39	>75% Grass cover, Good, HSG A
239,875	51	Weighted Average
224,752		93.70% Pervious Area
15,123		6.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.2	75	0.0200	0.04		Sheet Flow, A-B Woods: Dense underbrush n= 0.800 P2= 3.10"
13.8	269	0.0170	0.33		Shallow Concentrated Flow, B-C Forest w/Heavy Litter Kv= 2.5 fps
15.6	119	0.0160	0.13	0.41	Trap/Vee/Rect Channel Flow, C-D Bot.W=5.00' D=0.50' Z= 3.0 '/' Top.W=8.00' n= 0.800 Sheet flow: Woods+dense brush
0.4	59	0.0330	2.72		Shallow Concentrated Flow, D-E Grassed Waterway Kv= 15.0 fps
0.5	165	0.0080	5.10	6.26	Pipe Channel, E-F 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
19.2	241	0.0070	0.21		Shallow Concentrated Flow, F-G Forest w/Heavy Litter Kv= 2.5 fps
79.7	928	Total			

Subcatchment 1S:**Hydrograph**

Summary for Subcatchment 2S:

Runoff = 0.2 cfs @ 12.79 hrs, Volume= 0.061 af, Depth= 0.22"

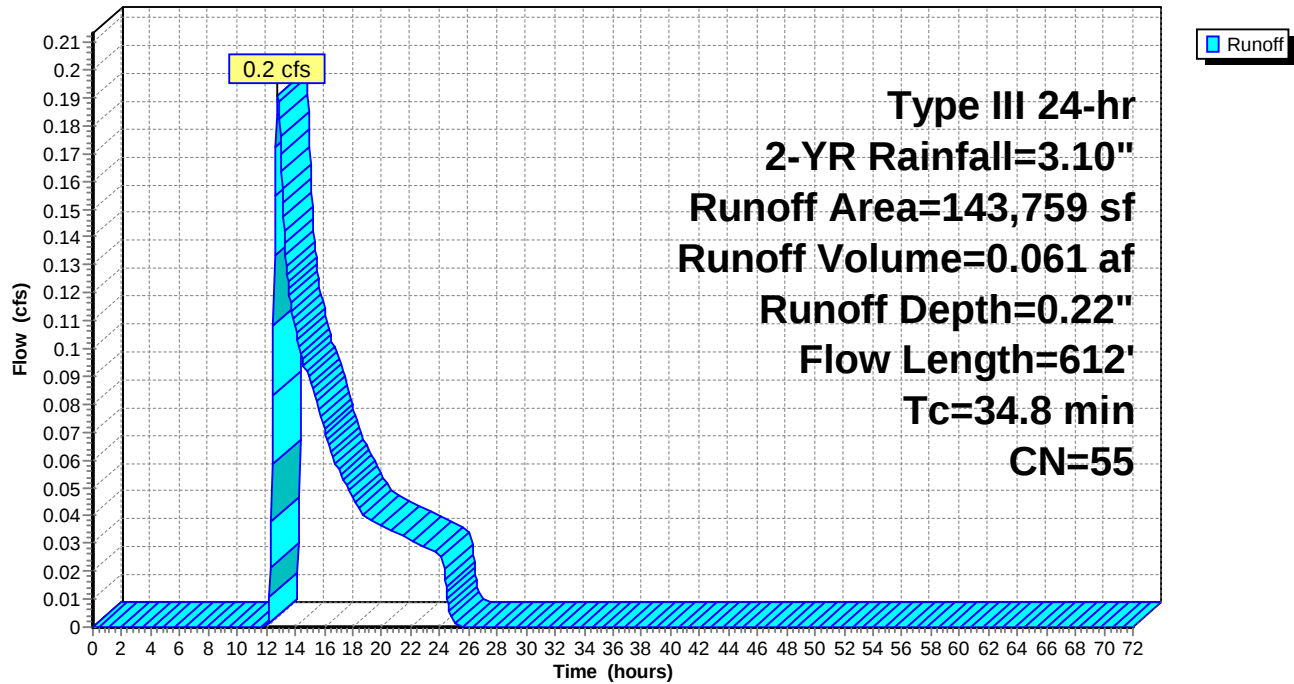
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
1,897	96	Gravel surface, HSG C
2,812	96	Gravel surface, HSG A
4,296	74	>75% Grass cover, Good, HSG C
5,516	39	>75% Grass cover, Good, HSG A
* 53,256	30	Woods, Good, HSG A (OFFSITE)
* 15,978	72	Woods/grass comb., Good, HSG C (OFFSITE)
* 34,153	80	1/2 acre lots, 25% imp, HSG C (OFFSITE)
* 25,851	54	1/2 acre lots, 25% imp, HSG A (OFFSITE)
143,759	55	Weighted Average
128,758		89.57% Pervious Area
15,001		10.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	51	0.0780	0.07		Sheet Flow, A-B
					Woods: Dense underbrush n= 0.800 P2= 3.10"
1.5	58	0.0080	0.63		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
20.4	503	0.0270	0.41		Shallow Concentrated Flow, C-D
					Forest w/Heavy Litter Kv= 2.5 fps
34.8	612	Total			

Subcatchment 2S:

Hydrograph



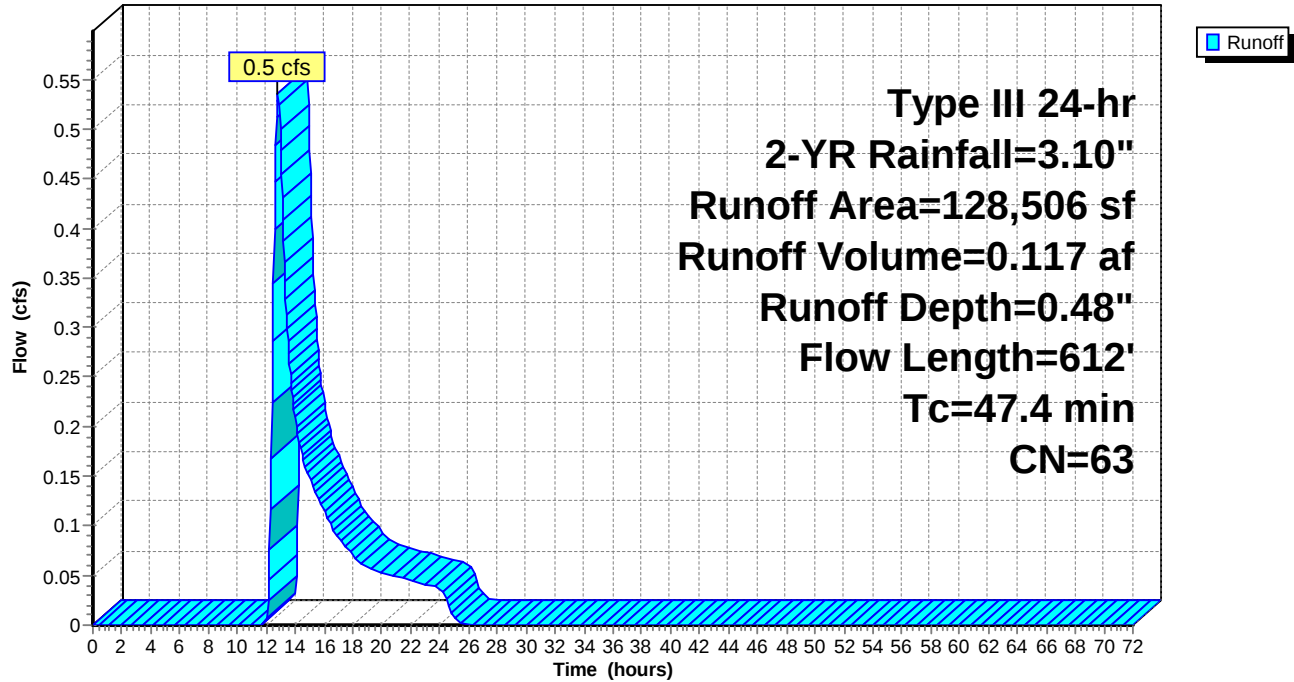
Summary for Subcatchment 3S:

Runoff = 0.5 cfs @ 12.80 hrs, Volume= 0.117 af, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
1,878	96	Gravel surface, HSG C
2,328	96	Gravel surface, HSG A
3,117	74	>75% Grass cover, Good, HSG C
7,509	39	>75% Grass cover, Good, HSG A
19,834	68	<50% Grass cover, Poor, HSG A
* 27,367	30	Woods, Good, HSG A (OFFSITE)
33,248	70	Woods, Good, HSG C
* 33,225	80	1/2 acre lots, 25% imp, HSG C (OFFSITE)
128,506	63	Weighted Average
120,200		93.54% Pervious Area
8,306		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.4	115	0.0340	0.06		Sheet Flow, A-B
					Woods: Dense underbrush n= 0.800 P2= 3.10"
2.5	122	0.0130	0.80		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
7.3	236	0.0460	0.54		Shallow Concentrated Flow, C-D
					Forest w/Heavy Litter Kv= 2.5 fps
1.0	79	0.0370	1.35		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
2.2	60	0.0320	0.45		Shallow Concentrated Flow, E-F
					Forest w/Heavy Litter Kv= 2.5 fps
47.4	612	Total			

Subcatchment 3S:**Hydrograph**

Summary for Subcatchment 4S:

Runoff = 1.5 cfs @ 12.22 hrs, Volume= 0.150 af, Depth= 0.87"

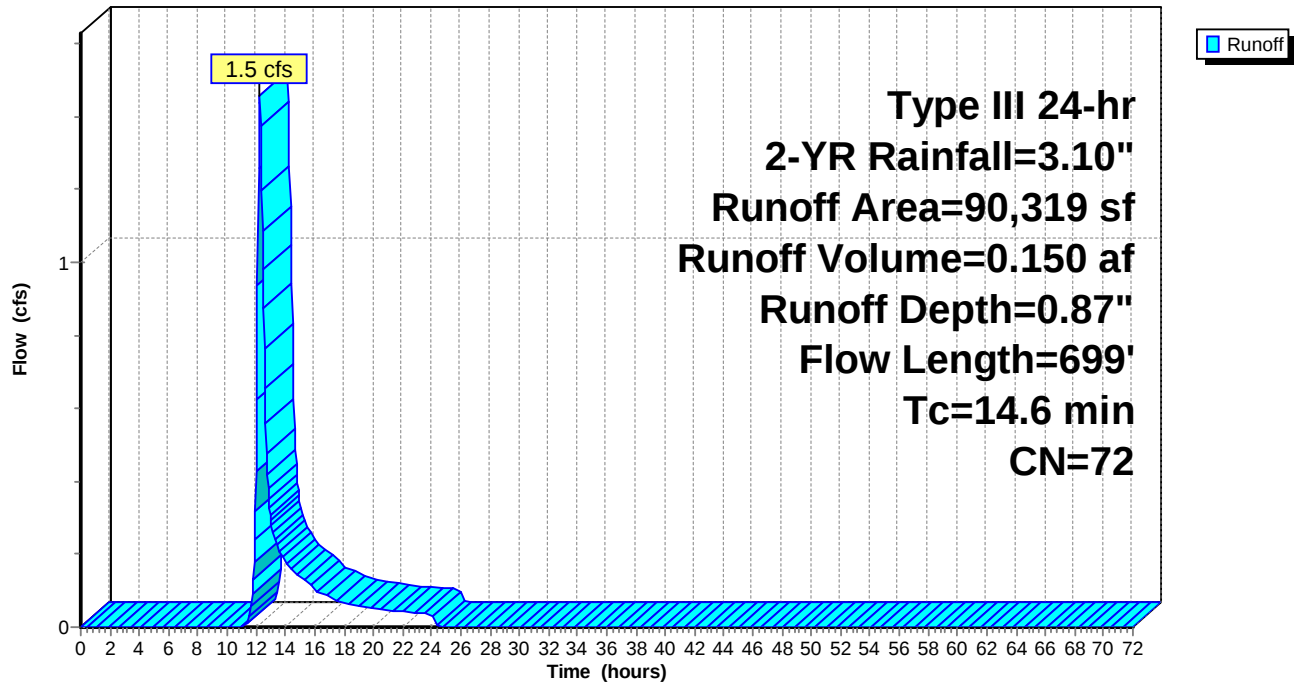
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
8,816	70	Woods, Good, HSG C
27,189	68	<50% Grass cover, Poor, HSG A
1,086	96	Gravel surface, HSG A
3,211	39	>75% Grass cover, Good, HSG A
* 15,087	70	Woods, Good, HSG C (OFFSITE)
* 34,930	80	1/2 acre lots, 25% imp, HSG C (OFFSITE)
90,319	72	Weighted Average
81,587		90.33% Pervious Area
8,733		9.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	75	0.0600	0.25		Sheet Flow, A-B
					Grass: Short n= 0.150 P2= 3.10"
6.6	372	0.0180	0.94		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
2.9	252	0.0430	1.45		Shallow Concentrated Flow, C-D
					Short Grass Pasture Kv= 7.0 fps
14.6	699	Total			

Subcatchment 4S:

Hydrograph



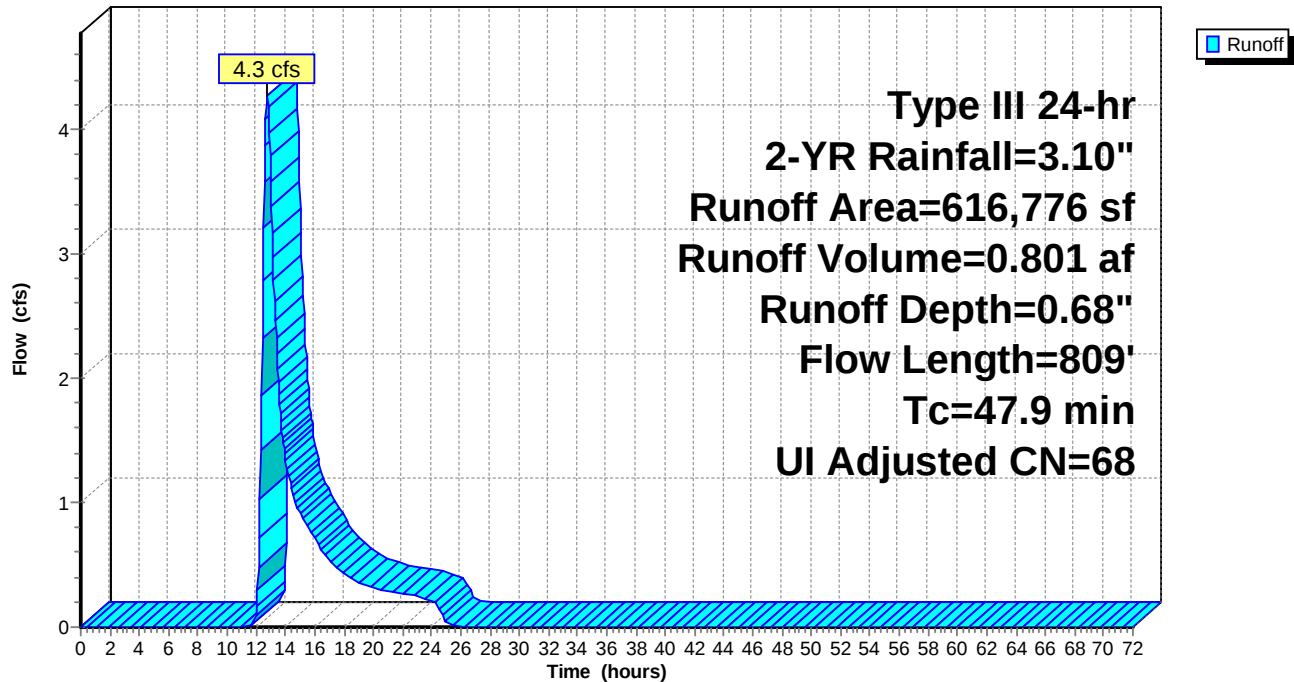
Summary for Subcatchment 5S:

Runoff = 4.3 cfs @ 12.76 hrs, Volume= 0.801 af, Depth= 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Adj	Description
*	353,141	77		Woods, Good, HSG D (wetlands)
	81,955	72		Woods/grass comb., Good, HSG C
	59,316	30		Woods, Good, HSG A
	10,191	98		Unconnected roofs, HSG A
	36,253	86		<50% Grass cover, Poor, HSG C
	5,346	39		>75% Grass cover, Good, HSG A
	5,632	96		Gravel surface, HSG A
	64,942	39		>75% Grass cover, Good, HSG A
	616,776	69	68	Weighted Average, UI Adjusted
	606,585			98.35% Pervious Area
	10,191			1.65% Impervious Area
	10,191			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	62	0.0480	0.06		Sheet Flow, A-B
					Woods: Dense underbrush n= 0.800 P2= 3.10"
1.1	85	0.0350	1.31		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
28.5	662	0.0240	0.39		Shallow Concentrated Flow, C-D
					Forest w/Heavy Litter Kv= 2.5 fps
47.9	809	Total			

Subcatchment 5S:**Hydrograph**

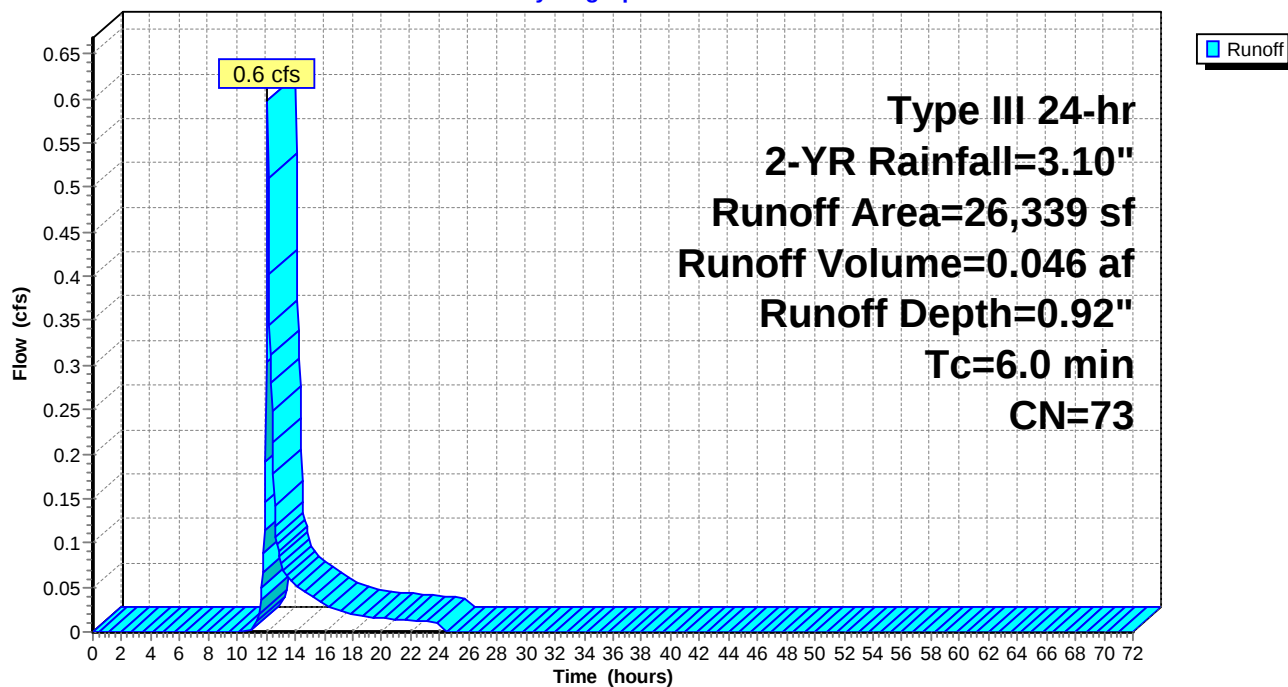
Summary for Subcatchment 6S:

Runoff = 0.6 cfs @ 12.10 hrs, Volume= 0.046 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
17,264	96	Gravel surface, HSG A
9,075	30	Woods, Good, HSG A
26,339	73	Weighted Average
26,339		100.00% Pervious Area

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

Subcatchment 6S:**Hydrograph**

Summary for Reach 1R:

Inflow Area = 8.807 ac, 7.85% Impervious, Inflow Depth = 0.16" for 2-YR event
 Inflow = 0.2 cfs @ 12.91 hrs, Volume= 0.120 af
 Outflow = 0.2 cfs @ 13.12 hrs, Volume= 0.120 af, Atten= 1%, Lag= 12.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.42 fps, Min. Travel Time= 6.4 min

Avg. Velocity = 0.27 fps, Avg. Travel Time= 10.2 min

Peak Storage= 78 cf @ 13.01 hrs

Average Depth at Peak Storage= 0.05'

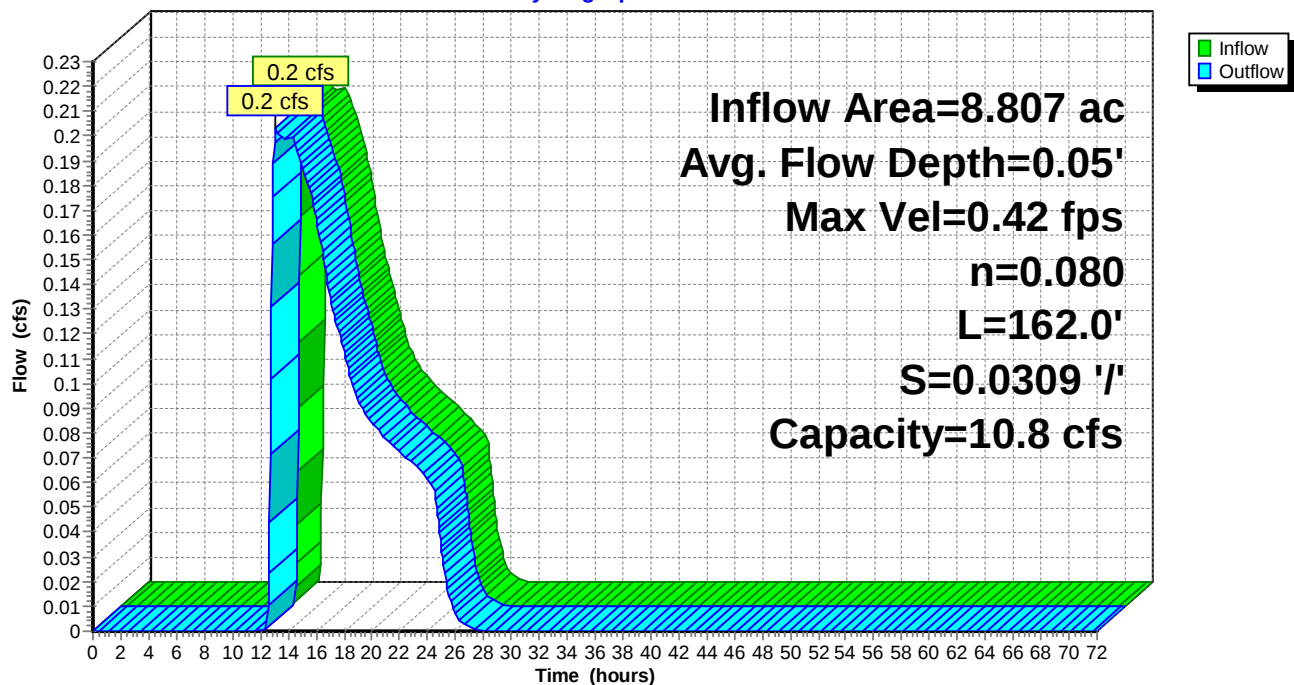
Bank-Full Depth= 0.50' Flow Area= 5.8 sf, Capacity= 10.8 cfs

10.00' x 0.50' deep channel, n= 0.080 Earth, dense brush, high stage

Side Slope Z-value= 3.0 '/' Top Width= 13.00'

Length= 162.0' Slope= 0.0309 '/'

Inlet Invert= 235.00', Outlet Invert= 230.00'

**Reach 1R:****Hydrograph**

Summary for Reach 2R:

Inflow Area = 8.807 ac, 7.85% Impervious, Inflow Depth = 0.16" for 2-YR event
 Inflow = 0.2 cfs @ 13.12 hrs, Volume= 0.120 af
 Outflow = 0.2 cfs @ 14.65 hrs, Volume= 0.120 af, Atten= 2%, Lag= 92.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.25 fps, Min. Travel Time= 22.2 min

Avg. Velocity = 0.12 fps, Avg. Travel Time= 45.7 min

Peak Storage= 266 cf @ 14.28 hrs

Average Depth at Peak Storage= 0.03'

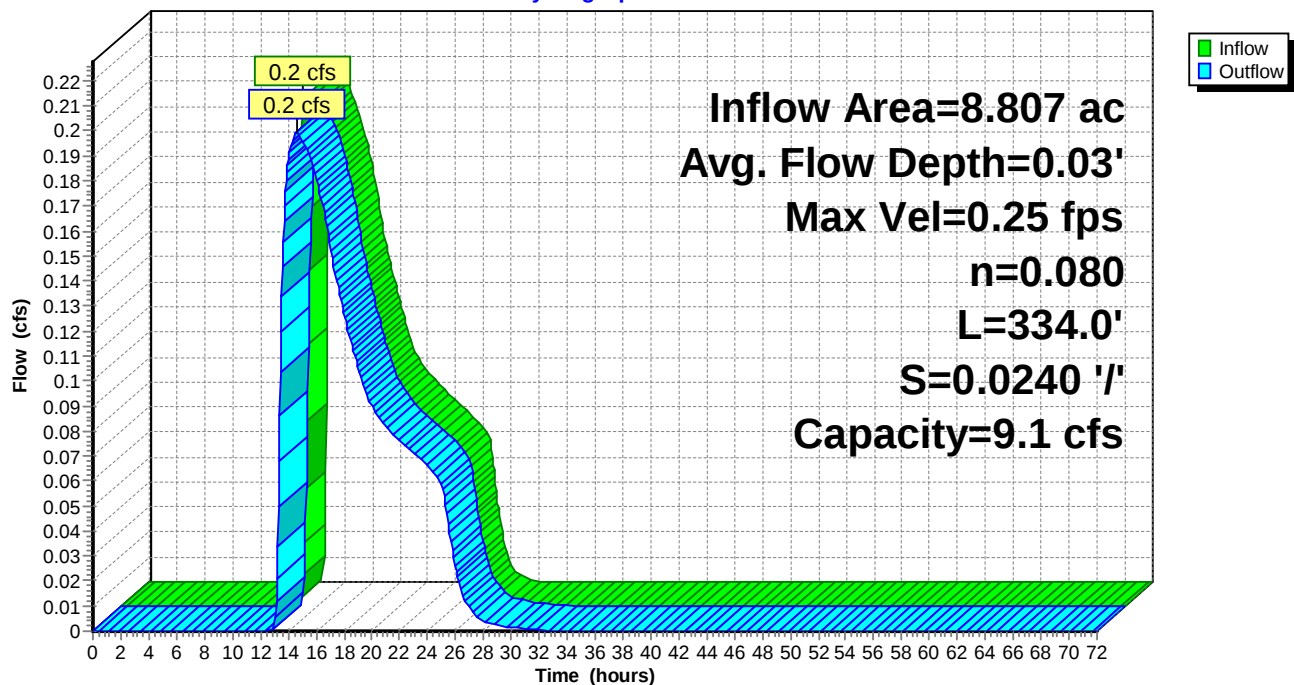
Bank-Full Depth= 0.25' Flow Area= 8.8 sf, Capacity= 9.1 cfs

30.00' x 0.25' deep channel, n= 0.080 Earth, dense brush, high stage

Side Slope Z-value= 20.0 ' Top Width= 40.00'

Length= 334.0' Slope= 0.0240 '/'

Inlet Invert= 230.00', Outlet Invert= 222.00'

**Reach 2R:****Hydrograph**

Summary for Reach 3R:

Inflow Area = 3.300 ac, 10.43% Impervious, Inflow Depth = 0.22" for 2-YR event
 Inflow = 0.2 cfs @ 12.79 hrs, Volume= 0.061 af
 Outflow = 0.2 cfs @ 12.84 hrs, Volume= 0.061 af, Atten= 0%, Lag= 3.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 2.56 fps, Min. Travel Time= 1.8 min

Avg. Velocity= 1.63 fps, Avg. Travel Time= 2.9 min

Peak Storage= 21 cf @ 12.81 hrs

Average Depth at Peak Storage= 0.14'

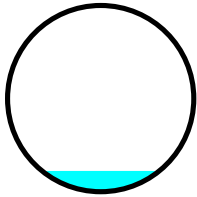
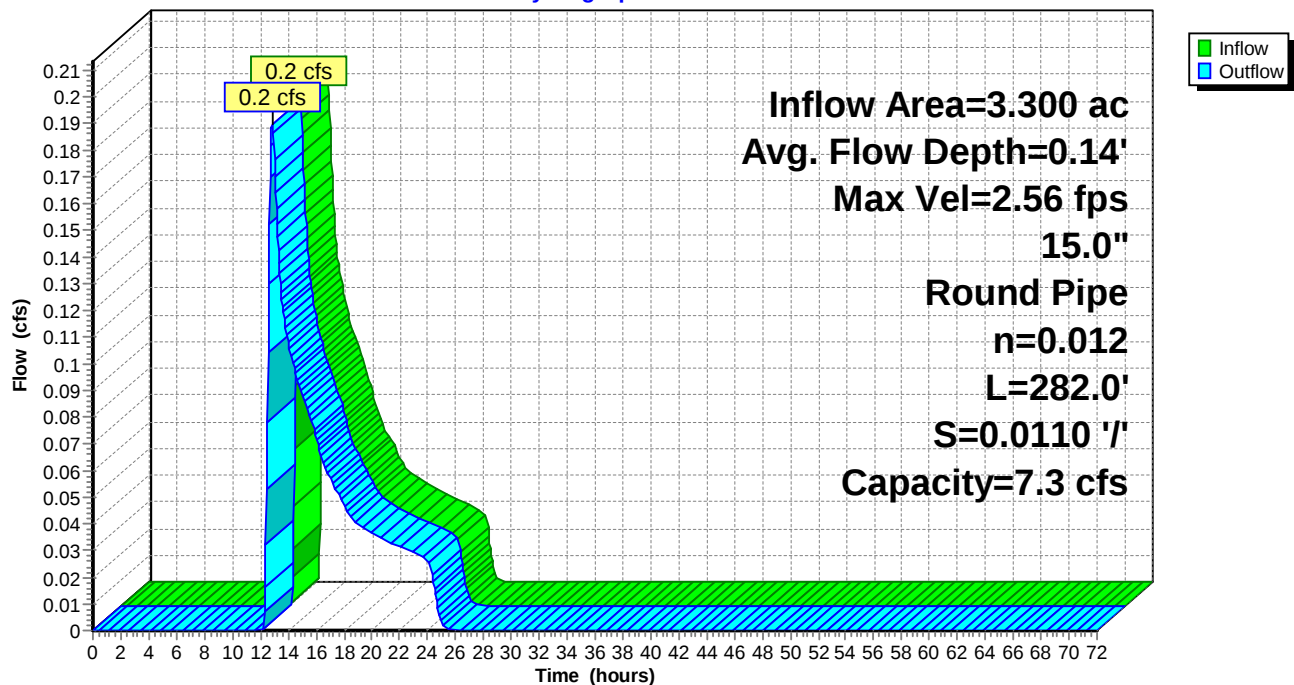
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.3 cfs

15.0" Round Pipe

n= 0.012

Length= 282.0' Slope= 0.0110 '/'

Inlet Invert= 240.90', Outlet Invert= 237.80'

**Reach 3R:****Hydrograph**

Summary for Reach 4R:

Inflow Area = 2.950 ac, 6.46% Impervious, Inflow Depth = 0.48" for 2-YR event
 Inflow = 0.5 cfs @ 12.80 hrs, Volume= 0.117 af
 Outflow = 0.5 cfs @ 12.81 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 5.03 fps, Min. Travel Time= 0.1 min

Avg. Velocity= 2.72 fps, Avg. Travel Time= 0.1 min

Peak Storage= 2 cf @ 12.81 hrs

Average Depth at Peak Storage= 0.17'

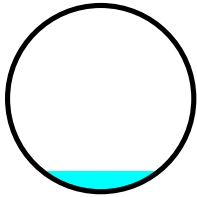
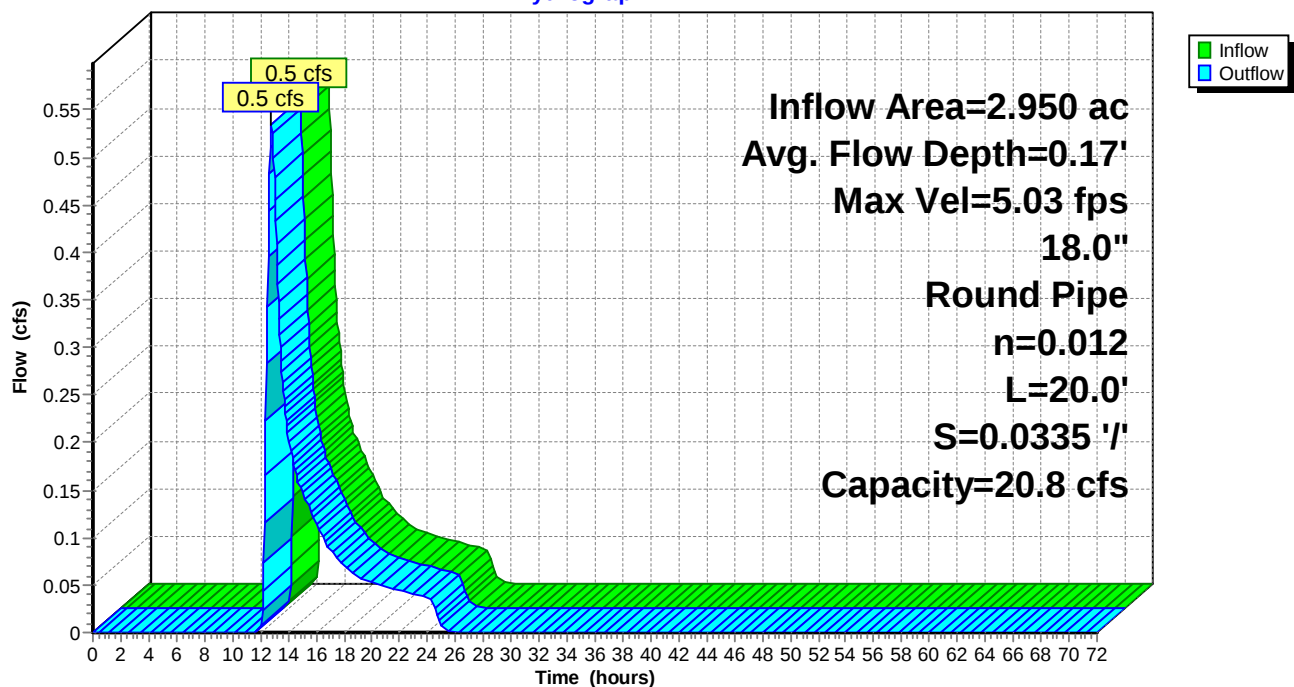
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 20.8 cfs

18.0" Round Pipe

n= 0.012

Length= 20.0' Slope= 0.0335 '/'

Inlet Invert= 245.05', Outlet Invert= 244.38'

**Reach 4R:****Hydrograph**

Summary for Reach 5R:

Inflow Area = 3.555 ac, 5.36% Impervious, Inflow Depth = 0.55" for 2-YR event
 Inflow = 0.6 cfs @ 12.79 hrs, Volume= 0.163 af
 Outflow = 0.6 cfs @ 12.79 hrs, Volume= 0.163 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 6.33 fps, Min. Travel Time= 0.1 min

Avg. Velocity = 3.48 fps, Avg. Travel Time= 0.1 min

Peak Storage= 2 cf @ 12.79 hrs

Average Depth at Peak Storage= 0.18'

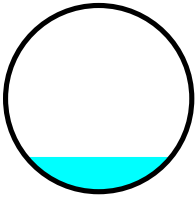
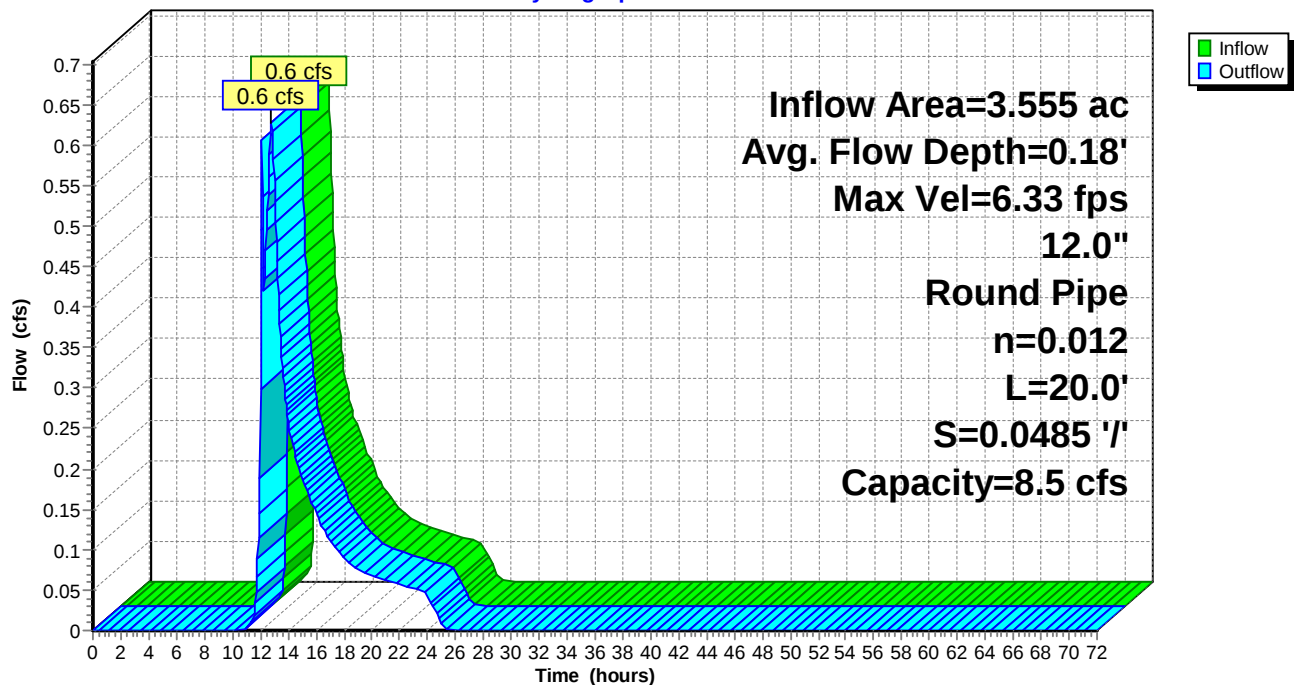
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.5 cfs

12.0" Round Pipe

n= 0.012

Length= 20.0' Slope= 0.0485 '/'

Inlet Invert= 242.85', Outlet Invert= 241.88'

**Reach 5R:****Hydrograph**

Summary for Reach 6R:

Inflow Area = 3.555 ac, 5.36% Impervious, Inflow Depth = 0.55" for 2-YR event
 Inflow = 0.6 cfs @ 12.79 hrs, Volume= 0.163 af
 Outflow = 0.5 cfs @ 13.72 hrs, Volume= 0.163 af, Atten= 20%, Lag= 55.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.36 fps, Min. Travel Time= 36.9 min

Avg. Velocity= 0.10 fps, Avg. Travel Time= 132.3 min

Peak Storage= 1,117 cf @ 13.10 hrs

Average Depth at Peak Storage= 0.05'

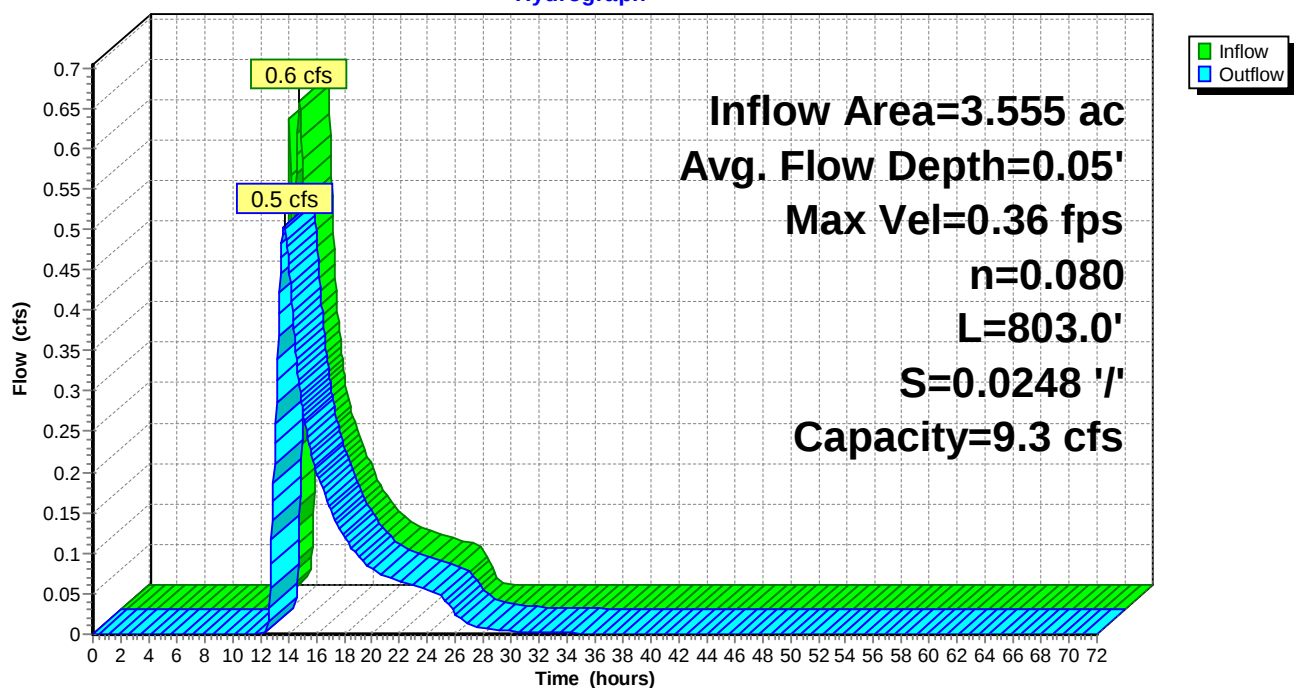
Bank-Full Depth= 0.25' Flow Area= 8.8 sf, Capacity= 9.3 cfs

30.00' x 0.25' deep channel, n= 0.080

Side Slope Z-value= 20.0 '/' Top Width= 40.00'

Length= 803.0' Slope= 0.0248 '/'

Inlet Invert= 241.88', Outlet Invert= 222.00'

**Reach 6R:****Hydrograph**

Summary for Reach 7R:

Inflow Area = 2.073 ac, 9.67% Impervious, Inflow Depth = 0.87" for 2-YR event
 Inflow = 1.5 cfs @ 12.22 hrs, Volume= 0.150 af
 Outflow = 0.7 cfs @ 13.20 hrs, Volume= 0.150 af, Atten= 51%, Lag= 58.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.39 fps, Min. Travel Time= 37.1 min

Avg. Velocity= 0.09 fps, Avg. Travel Time= 168.8 min

Peak Storage= 1,592 cf @ 12.57 hrs

Average Depth at Peak Storage= 0.06'

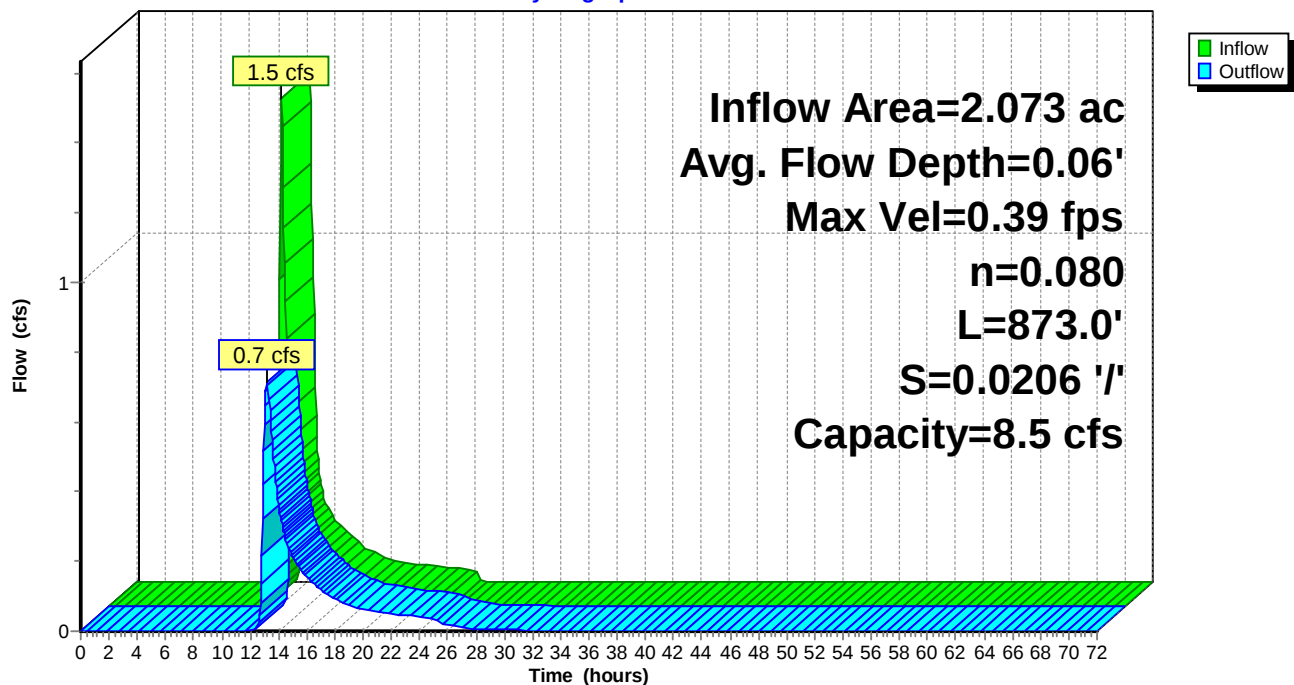
Bank-Full Depth= 0.25' Flow Area= 8.8 sf, Capacity= 8.5 cfs

30.00' x 0.25' deep channel, n= 0.080

Side Slope Z-value= 20.0 '/' Top Width= 40.00'

Length= 873.0' Slope= 0.0206 '/'

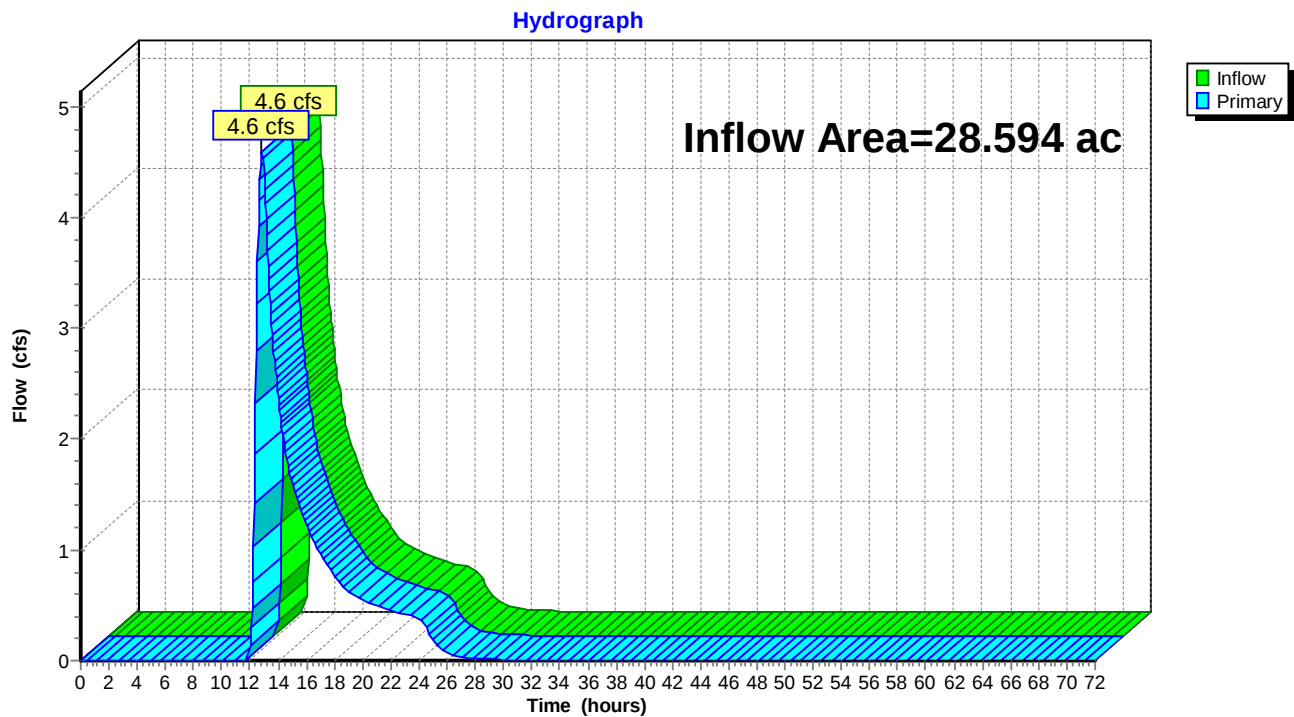
Inlet Invert= 240.00', Outlet Invert= 222.00'

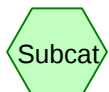
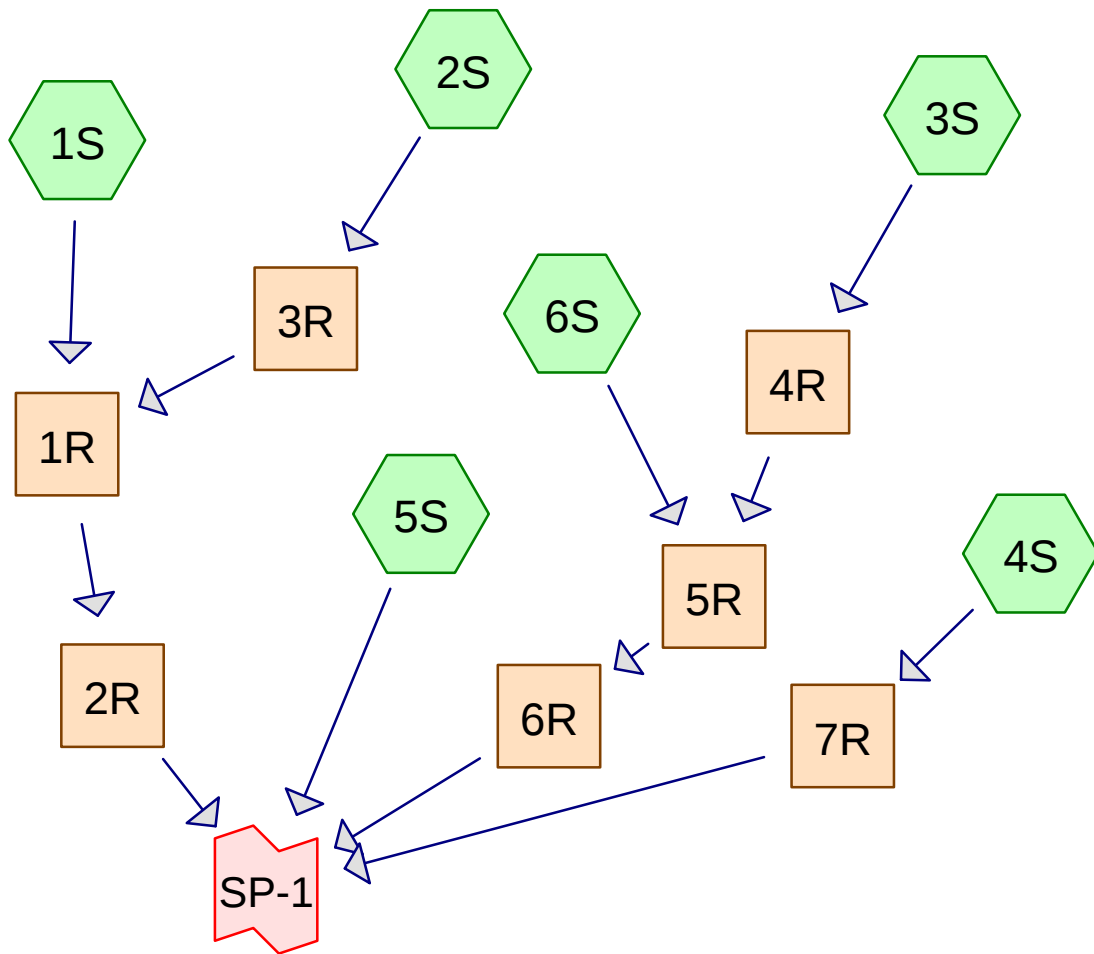
**Reach 7R:****Hydrograph**

Summary for Link SP-1:

Inflow Area = 28.594 ac, 4.60% Impervious, Inflow Depth = 0.52" for 2-YR event
Inflow = 4.6 cfs @ 12.85 hrs, Volume= 1.234 af
Primary = 4.6 cfs @ 12.85 hrs, Volume= 1.234 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

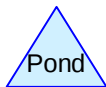
Link SP-1:



Subcat



Reach



Pond



Link

Routing Diagram for 25-36465 PRE

Prepared by Atlantic Resource Consultants, Printed 6/4/2026
HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

25-36465 PRE

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=4.60"

Printed 6/4/2026

Page 2

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S:	Runoff Area=239,875 sf 6.30% Impervious Runoff Depth=0.58" Flow Length=928' Tc=79.7 min CN=51 Runoff=0.8 cfs 0.268 af
Subcatchment 2S:	Runoff Area=143,759 sf 10.43% Impervious Runoff Depth=0.79" Flow Length=612' Tc=34.8 min CN=55 Runoff=1.2 cfs 0.217 af
Subcatchment 3S:	Runoff Area=128,506 sf 6.46% Impervious Runoff Depth=1.26" Flow Length=612' Tc=47.4 min CN=63 Runoff=1.8 cfs 0.310 af
Subcatchment 4S:	Runoff Area=90,319 sf 9.67% Impervious Runoff Depth=1.89" Flow Length=699' Tc=14.6 min CN=72 Runoff=3.4 cfs 0.327 af
Subcatchment 5S:	Runoff Area=616,776 sf 1.65% Impervious Runoff Depth=1.60" Flow Length=809' Tc=47.9 min UI Adjusted CN=68 Runoff=11.3 cfs 1.888 af
Subcatchment 6S:	Runoff Area=26,339 sf 0.00% Impervious Runoff Depth=1.97" Tc=6.0 min CN=73 Runoff=1.4 cfs 0.099 af
Reach 1R:	Avg. Flow Depth=0.16' Max Vel=0.93 fps Inflow=1.6 cfs 0.485 af n=0.080 L=162.0' S=0.0309 '/ Capacity=10.8 cfs Outflow=1.6 cfs 0.485 af
Reach 2R:	Avg. Flow Depth=0.09' Max Vel=0.54 fps Inflow=1.6 cfs 0.485 af n=0.080 L=334.0' S=0.0240 '/ Capacity=9.1 cfs Outflow=1.5 cfs 0.485 af
Reach 3R:	Avg. Flow Depth=0.35' Max Vel=4.44 fps Inflow=1.2 cfs 0.217 af 15.0" Round Pipe n=0.012 L=282.0' S=0.0110 '/ Capacity=7.3 cfs Outflow=1.2 cfs 0.217 af
Reach 4R:	Avg. Flow Depth=0.30' Max Vel=7.20 fps Inflow=1.8 cfs 0.310 af 18.0" Round Pipe n=0.012 L=20.0' S=0.0335 '/ Capacity=20.8 cfs Outflow=1.8 cfs 0.310 af
Reach 5R:	Avg. Flow Depth=0.33' Max Vel=8.82 fps Inflow=2.0 cfs 0.410 af 12.0" Round Pipe n=0.012 L=20.0' S=0.0485 '/ Capacity=8.5 cfs Outflow=2.0 cfs 0.410 af
Reach 6R:	Avg. Flow Depth=0.09' Max Vel=0.58 fps Inflow=2.0 cfs 0.410 af n=0.080 L=803.0' S=0.0248 '/ Capacity=9.3 cfs Outflow=1.8 cfs 0.410 af
Reach 7R:	Avg. Flow Depth=0.11' Max Vel=0.59 fps Inflow=3.4 cfs 0.327 af n=0.080 L=873.0' S=0.0206 '/ Capacity=8.5 cfs Outflow=2.1 cfs 0.327 af
Link SP-1:	Inflow=14.9 cfs 3.110 af Primary=14.9 cfs 3.110 af

Total Runoff Area = 28.594 ac Runoff Volume = 3.110 af Average Runoff Depth = 1.31"
95.40% Pervious = 27.278 ac 4.60% Impervious = 1.317 ac

25-36465 PRE

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=5.80"

Printed 6/4/2026

Page 3

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S:	Runoff Area=239,875 sf 6.30% Impervious Runoff Depth=1.12" Flow Length=928' Tc=79.7 min CN=51 Runoff=1.9 cfs 0.512 af
Subcatchment 2S:	Runoff Area=143,759 sf 10.43% Impervious Runoff Depth=1.40" Flow Length=612' Tc=34.8 min CN=55 Runoff=2.5 cfs 0.386 af
Subcatchment 3S:	Runoff Area=128,506 sf 6.46% Impervious Runoff Depth=2.04" Flow Length=612' Tc=47.4 min CN=63 Runoff=3.0 cfs 0.501 af
Subcatchment 4S:	Runoff Area=90,319 sf 9.67% Impervious Runoff Depth=2.83" Flow Length=699' Tc=14.6 min CN=72 Runoff=5.2 cfs 0.489 af
Subcatchment 5S:	Runoff Area=616,776 sf 1.65% Impervious Runoff Depth=2.47" Flow Length=809' Tc=47.9 min UI Adjusted CN=68 Runoff=18.0 cfs 2.912 af
Subcatchment 6S:	Runoff Area=26,339 sf 0.00% Impervious Runoff Depth=2.92" Tc=6.0 min CN=73 Runoff=2.0 cfs 0.147 af
Reach 1R:	Avg. Flow Depth=0.25' Max Vel=1.24 fps Inflow=3.4 cfs 0.898 af n=0.080 L=162.0' S=0.0309 '/ Capacity=10.8 cfs Outflow=3.4 cfs 0.898 af
Reach 2R:	Avg. Flow Depth=0.14' Max Vel=0.73 fps Inflow=3.4 cfs 0.898 af n=0.080 L=334.0' S=0.0240 '/ Capacity=9.1 cfs Outflow=3.3 cfs 0.898 af
Reach 3R:	Avg. Flow Depth=0.50' Max Vel=5.42 fps Inflow=2.5 cfs 0.386 af 15.0" Round Pipe n=0.012 L=282.0' S=0.0110 '/ Capacity=7.3 cfs Outflow=2.5 cfs 0.386 af
Reach 4R:	Avg. Flow Depth=0.39' Max Vel=8.41 fps Inflow=3.0 cfs 0.501 af 18.0" Round Pipe n=0.012 L=20.0' S=0.0335 '/ Capacity=20.8 cfs Outflow=3.0 cfs 0.501 af
Reach 5R:	Avg. Flow Depth=0.43' Max Vel=10.15 fps Inflow=3.3 cfs 0.648 af 12.0" Round Pipe n=0.012 L=20.0' S=0.0485 '/ Capacity=8.5 cfs Outflow=3.3 cfs 0.648 af
Reach 6R:	Avg. Flow Depth=0.13' Max Vel=0.72 fps Inflow=3.3 cfs 0.648 af n=0.080 L=803.0' S=0.0248 '/ Capacity=9.3 cfs Outflow=3.1 cfs 0.648 af
Reach 7R:	Avg. Flow Depth=0.15' Max Vel=0.71 fps Inflow=5.2 cfs 0.489 af n=0.080 L=873.0' S=0.0206 '/ Capacity=8.5 cfs Outflow=3.5 cfs 0.489 af
Link SP-1:	Inflow=25.9 cfs 4.948 af Primary=25.9 cfs 4.948 af

Total Runoff Area = 28.594 ac Runoff Volume = 4.948 af Average Runoff Depth = 2.08"
95.40% Pervious = 27.278 ac 4.60% Impervious = 1.317 ac

25-36465 PRE

Type III 24-hr 100-YR Rainfall=8.10"

Prepared by Atlantic Resource Consultants

Printed 6/4/2026

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

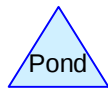
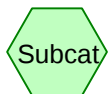
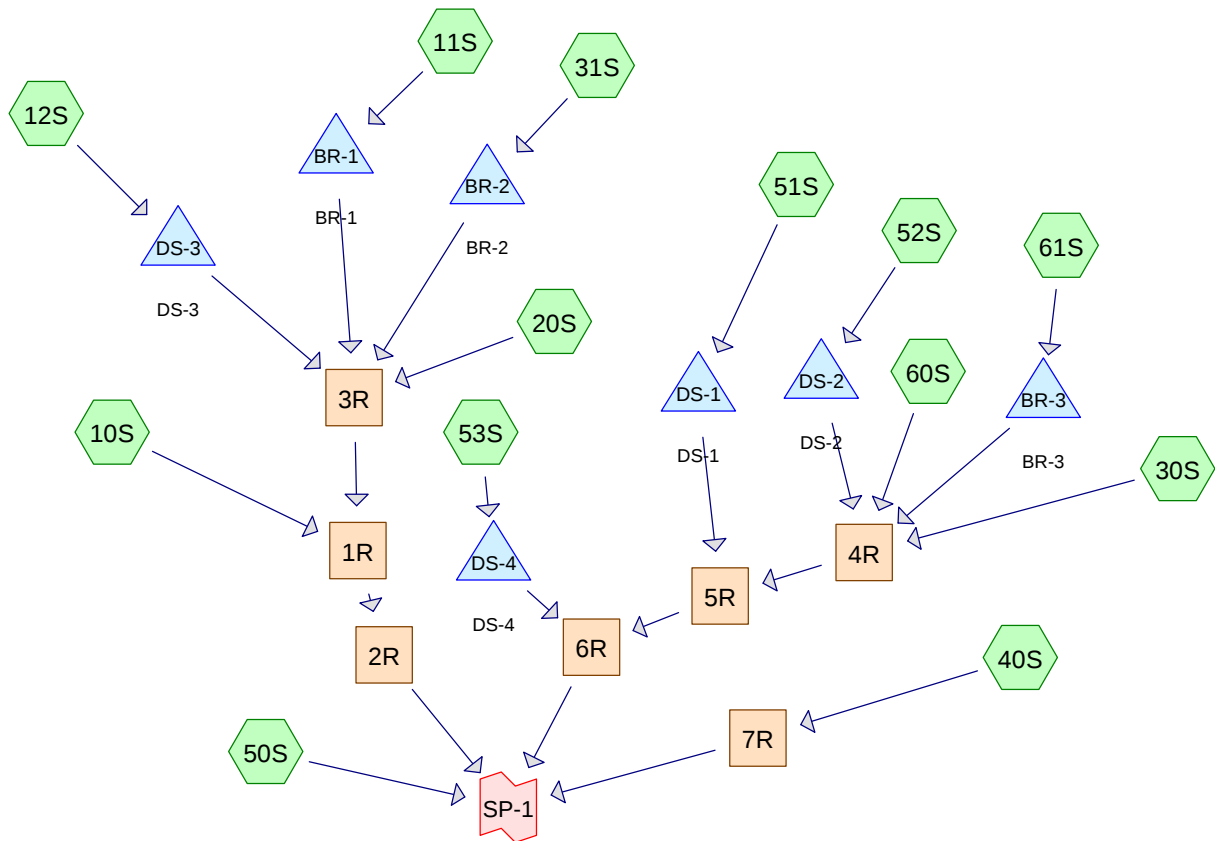
Page 4

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S:	Runoff Area=239,875 sf 6.30% Impervious Runoff Depth=2.42" Flow Length=928' Tc=79.7 min CN=51 Runoff=4.7 cfs 1.110 af
Subcatchment 2S:	Runoff Area=143,759 sf 10.43% Impervious Runoff Depth=2.85" Flow Length=612' Tc=34.8 min CN=55 Runoff=5.6 cfs 0.785 af
Subcatchment 3S:	Runoff Area=128,506 sf 6.46% Impervious Runoff Depth=3.75" Flow Length=612' Tc=47.4 min CN=63 Runoff=5.8 cfs 0.921 af
Subcatchment 4S:	Runoff Area=90,319 sf 9.67% Impervious Runoff Depth=4.78" Flow Length=699' Tc=14.6 min CN=72 Runoff=8.8 cfs 0.826 af
Subcatchment 5S:	Runoff Area=616,776 sf 1.65% Impervious Runoff Depth=4.32" Flow Length=809' Tc=47.9 min UI Adjusted CN=68 Runoff=32.0 cfs 5.097 af
Subcatchment 6S:	Runoff Area=26,339 sf 0.00% Impervious Runoff Depth=4.90" Tc=6.0 min CN=73 Runoff=3.4 cfs 0.247 af
Reach 1R:	Avg. Flow Depth=0.42' Max Vel=1.70 fps Inflow=8.1 cfs 1.894 af n=0.080 L=162.0' S=0.0309 '/' Capacity=10.8 cfs Outflow=8.1 cfs 1.894 af
Reach 2R:	Avg. Flow Depth=0.23' Max Vel=1.00 fps Inflow=8.1 cfs 1.894 af n=0.080 L=334.0' S=0.0240 '/' Capacity=9.1 cfs Outflow=8.0 cfs 1.894 af
Reach 3R:	Avg. Flow Depth=0.82' Max Vel=6.58 fps Inflow=5.6 cfs 0.785 af 15.0" Round Pipe n=0.012 L=282.0' S=0.0110 '/' Capacity=7.3 cfs Outflow=5.6 cfs 0.785 af
Reach 4R:	Avg. Flow Depth=0.54' Max Vel=10.08 fps Inflow=5.8 cfs 0.921 af 18.0" Round Pipe n=0.012 L=20.0' S=0.0335 '/' Capacity=20.8 cfs Outflow=5.8 cfs 0.921 af
Reach 5R:	Avg. Flow Depth=0.64' Max Vel=11.82 fps Inflow=6.2 cfs 1.168 af 12.0" Round Pipe n=0.012 L=20.0' S=0.0485 '/' Capacity=8.5 cfs Outflow=6.2 cfs 1.168 af
Reach 6R:	Avg. Flow Depth=0.19' Max Vel=0.91 fps Inflow=6.2 cfs 1.168 af n=0.080 L=803.0' S=0.0248 '/' Capacity=9.3 cfs Outflow=5.9 cfs 1.168 af
Reach 7R:	Avg. Flow Depth=0.21' Max Vel=0.88 fps Inflow=8.8 cfs 0.826 af n=0.080 L=873.0' S=0.0206 '/' Capacity=8.5 cfs Outflow=6.4 cfs 0.826 af
Link SP-1:	Inflow=49.9 cfs 8.985 af Primary=49.9 cfs 8.985 af

Total Runoff Area = 28.594 ac Runoff Volume = 8.985 af Average Runoff Depth = 3.77"
95.40% Pervious = 27.278 ac 4.60% Impervious = 1.317 ac

ATTACHMENT B (II) -POST-DEVELOPMENT MODEL RESULTS



Routing Diagram for 25-36465 POST
 Prepared by Atlantic Resource Consultants, Printed 6/7/2026
 HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

25-36465 POST

Type III 24-hr 2-YR Rainfall=3.10"

Prepared by Atlantic Resource Consultants

Printed 6/7/2026

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Page 2

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S:	Runoff Area=216,967 sf 5.22% Impervious Runoff Depth=0.11" Flow Length=905' Tc=79.3 min CN=50 Runoff=0.1 cfs 0.045 af
Subcatchment 11S:	Runoff Area=16,842 sf 0.00% Impervious Runoff Depth=1.46" Tc=6.0 min CN=82 Runoff=0.6 cfs 0.047 af
Subcatchment 12S:	Runoff Area=6,066 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.4 cfs 0.033 af
Subcatchment 20S:	Runoff Area=143,759 sf 10.43% Impervious Runoff Depth=0.22" Flow Length=612' Tc=34.8 min CN=55 Runoff=0.2 cfs 0.061 af
Subcatchment 30S:	Runoff Area=128,506 sf 6.46% Impervious Runoff Depth=0.48" Flow Length=612' Tc=47.4 min CN=63 Runoff=0.5 cfs 0.117 af
Subcatchment 31S:	Runoff Area=12,092 sf 0.00% Impervious Runoff Depth=0.92" Tc=6.0 min CN=73 Runoff=0.3 cfs 0.021 af
Subcatchment 40S:	Runoff Area=90,319 sf 9.67% Impervious Runoff Depth=0.87" Flow Length=699' Tc=20.7 min CN=72 Runoff=1.3 cfs 0.150 af
Subcatchment 50S:	Runoff Area=582,688 sf 0.54% Impervious Runoff Depth=0.68" Flow Length=599' Tc=55.5 min CN=68 Runoff=3.7 cfs 0.757 af
Subcatchment 51S:	Runoff Area=9,875 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.7 cfs 0.054 af
Subcatchment 52S:	Runoff Area=6,480 sf 64.94% Impervious Runoff Depth=1.14" Tc=6.0 min CN=77 Runoff=0.2 cfs 0.014 af
Subcatchment 53S:	Runoff Area=10,126 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.7 cfs 0.056 af
Subcatchment 60S:	Runoff Area=8,562 sf 0.00% Impervious Runoff Depth=0.13" Tc=6.0 min CN=51 Runoff=0.0 cfs 0.002 af
Subcatchment 61S:	Runoff Area=5,285 sf 22.59% Impervious Runoff Depth=1.08" Tc=6.0 min CN=76 Runoff=0.1 cfs 0.011 af
Reach 1R:	Avg. Flow Depth=0.06' Max Vel=0.50 fps Inflow=0.3 cfs 0.126 af n=0.080 L=162.0' S=0.0309 '/ Capacity=10.8 cfs Outflow=0.3 cfs 0.126 af
Reach 2R:	Avg. Flow Depth=0.03' Max Vel=0.29 fps Inflow=0.3 cfs 0.126 af n=0.080 L=334.0' S=0.0240 '/ Capacity=9.1 cfs Outflow=0.3 cfs 0.126 af
Reach 3R:	Avg. Flow Depth=0.15' Max Vel=4.10 fps Inflow=0.3 cfs 0.080 af 12.0" Round Pipe n=0.012 L=201.0' S=0.0250 '/ Capacity=6.1 cfs Outflow=0.3 cfs 0.080 af

25-36465 POST

Type III 24-hr 2-YR Rainfall=3.10"

Prepared by Atlantic Resource Consultants

Printed 6/7/2026

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Page 3

Reach 4R: Avg. Flow Depth=0.17' Max Vel=5.09 fps Inflow=0.6 cfs 0.126 af
 18.0" Round Pipe n=0.012 L=328.0' S=0.0322 '/ Capacity=20.4 cfs Outflow=0.6 cfs 0.126 af

Reach 5R: Avg. Flow Depth=0.27' Max Vel=2.73 fps Inflow=0.6 cfs 0.135 af
 18.0" Round Pipe n=0.012 L=169.0' S=0.0053 '/ Capacity=8.3 cfs Outflow=0.6 cfs 0.135 af

Reach 6R: Avg. Flow Depth=0.05' Max Vel=0.37 fps Inflow=0.7 cfs 0.162 af
 n=0.080 L=614.0' S=0.0228 '/ Capacity=8.9 cfs Outflow=0.6 cfs 0.162 af

Reach 7R: Avg. Flow Depth=0.06' Max Vel=0.41 fps Inflow=1.3 cfs 0.150 af
 n=0.080 L=803.0' S=0.0224 '/ Capacity=8.8 cfs Outflow=0.7 cfs 0.150 af

Pond BR-1: BR-1 Peak Elev=242.50' Storage=590 cf Inflow=0.6 cfs 0.047 af
 Discarded=0.1 cfs 0.044 af Primary=0.0 cfs 0.003 af Outflow=0.1 cfs 0.047 af

Pond BR-2: BR-2 Peak Elev=241.76' Storage=223 cf Inflow=0.3 cfs 0.021 af
 Discarded=0.0 cfs 0.017 af Primary=0.0 cfs 0.004 af Outflow=0.1 cfs 0.021 af

Pond BR-3: BR-3 Peak Elev=241.77' Storage=104 cf Inflow=0.1 cfs 0.011 af
 Discarded=0.0 cfs 0.008 af Primary=0.0 cfs 0.003 af Outflow=0.0 cfs 0.011 af

Pond DS-1: DS-1 Peak Elev=241.06' Storage=804 cf Inflow=0.7 cfs 0.054 af
 Discarded=0.1 cfs 0.045 af Primary=0.0 cfs 0.010 af Outflow=0.1 cfs 0.054 af

Pond DS-2: DS-2 Peak Elev=241.55' Storage=153 cf Inflow=0.2 cfs 0.014 af
 Discarded=0.0 cfs 0.011 af Primary=0.0 cfs 0.004 af Outflow=0.0 cfs 0.014 af

Pond DS-3: DS-3 Peak Elev=239.86' Storage=302 cf Inflow=0.4 cfs 0.033 af
 Discarded=0.0 cfs 0.021 af Primary=0.1 cfs 0.012 af Outflow=0.1 cfs 0.033 af

Pond DS-4: DS-4 Peak Elev=239.76' Storage=278 cf Inflow=0.7 cfs 0.056 af
 Discarded=0.0 cfs 0.029 af Primary=0.3 cfs 0.026 af Outflow=0.4 cfs 0.056 af

Link SP-1: Inflow=4.6 cfs 1.194 af
 Primary=4.6 cfs 1.194 af

Total Runoff Area = 28.411 ac Runoff Volume = 1.368 af Average Runoff Depth = 0.58"
93.70% Pervious = 26.620 ac 6.30% Impervious = 1.790 ac

25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.10"

Printed 6/7/2026

Page 4

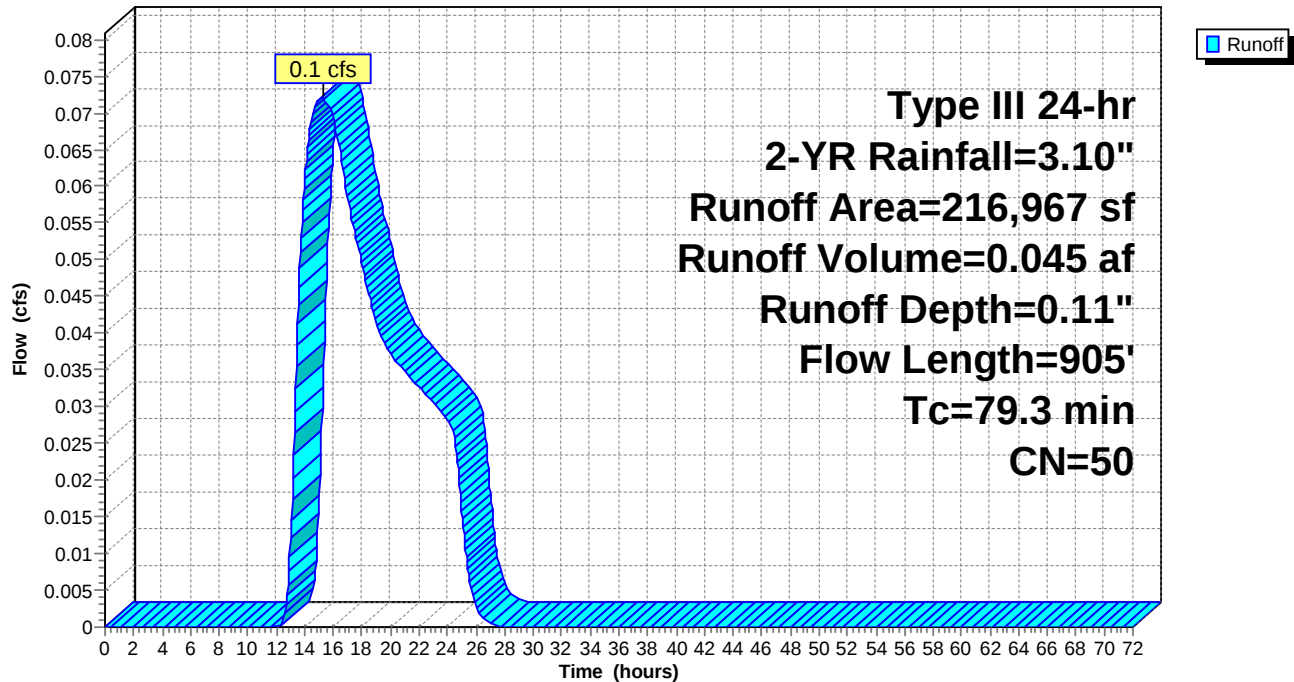
Summary for Subcatchment 10S:

Runoff = 0.1 cfs @ 15.23 hrs, Volume= 0.045 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
19,980	76	Gravel roads, HSG A
7,572	98	Roofs, HSG D
* 9,860	61	1/4 acre lots, 38% imp, HSG A (OFFSITE)
105,918	30	Woods, Good, HSG A
* 31,181	77	Woods, Good, HSG D (WETLANDS)
22,254	68	<50% Grass cover, Poor, HSG A
20,202	39	>75% Grass cover, Good, HSG A
216,967	50	Weighted Average
205,648		94.78% Pervious Area
11,319		5.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.2	75	0.0200	0.04		Sheet Flow, A-B Woods: Dense underbrush n= 0.800 P2= 3.10"
13.8	269	0.0170	0.33		Shallow Concentrated Flow, B-C Forest w/Heavy Litter Kv= 2.5 fps
15.6	119	0.0160	0.13	0.41	Trap/Vee/Rect Channel Flow, C-D Bot.W=5.00' D=0.50' Z= 3.0 '/' Top.W=8.00' n= 0.800 Sheet flow: Woods+dense brush
0.5	201	0.0170	7.44	9.12	Pipe Channel, D-E 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
19.2	241	0.0070	0.21		Shallow Concentrated Flow, E-F Forest w/Heavy Litter Kv= 2.5 fps
79.3	905	Total			

Subcatchment 10S:**Hydrograph**

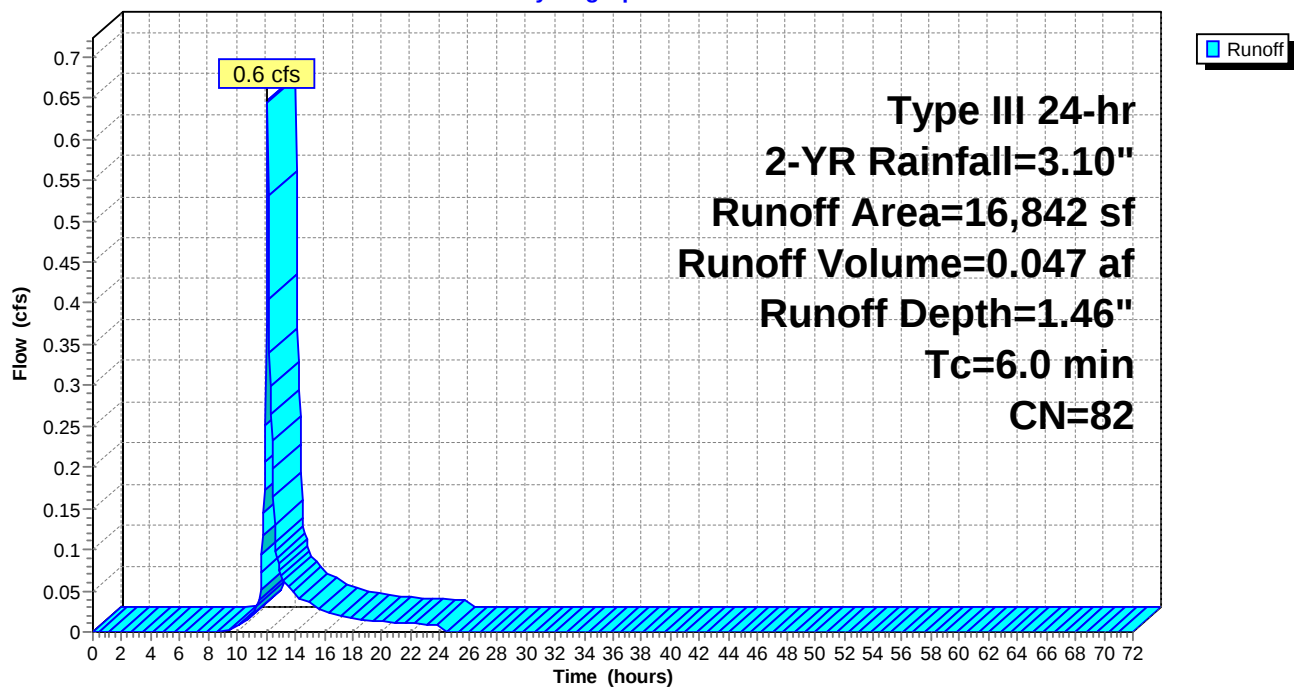
Summary for Subcatchment 11S:

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.047 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
12,633	96	Gravel surface, HSG D
4,209	39	>75% Grass cover, Good, HSG A
16,842	82	Weighted Average
16,842		100.00% Pervious Area

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

Subcatchment 11S:**Hydrograph**

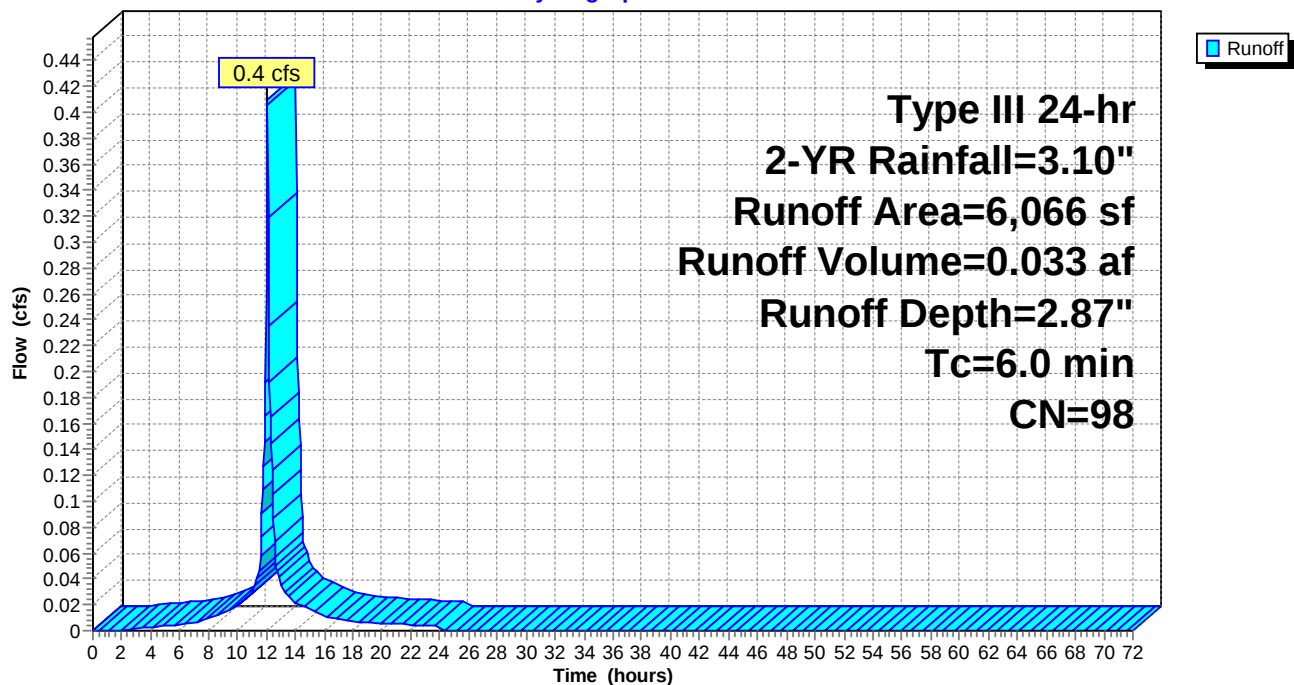
Summary for Subcatchment 12S:

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.033 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
6,066	98	Roofs, HSG D
6,066		100.00% Impervious Area

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

Subcatchment 12S:**Hydrograph**

25-36465 POST

Type III 24-hr 2-YR Rainfall=3.10"

Prepared by Atlantic Resource Consultants

Printed 6/7/2026

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Page 8

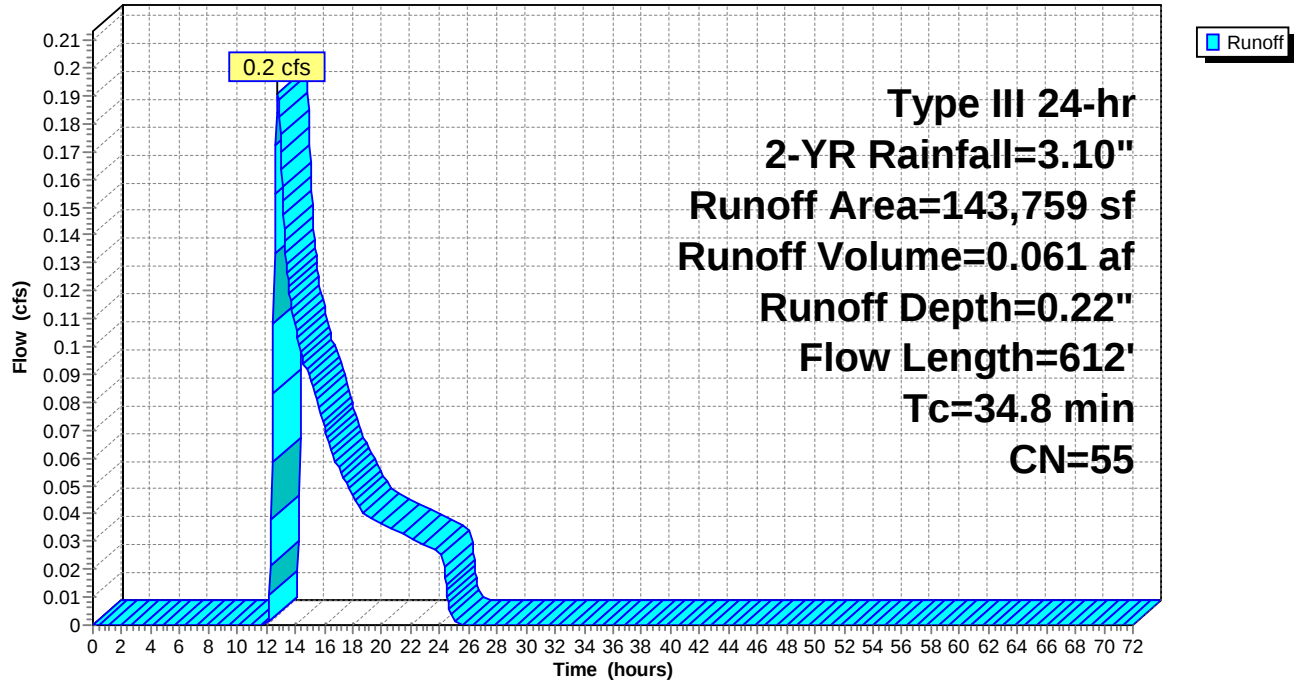
Summary for Subcatchment 20S:

Runoff = 0.2 cfs @ 12.79 hrs, Volume= 0.061 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
1,897	96	Gravel surface, HSG C
2,812	96	Gravel surface, HSG A
4,296	74	>75% Grass cover, Good, HSG C
5,516	39	>75% Grass cover, Good, HSG A
* 53,256	30	Woods, Good, HSG A (OFFSITE)
* 15,978	72	Woods/grass comb., Good, HSG C (OFFSITE)
* 34,153	80	1/2 acre lots, 25% imp, HSG C (OFFSITE)
* 25,851	54	1/2 acre lots, 25% imp, HSG A (OFFSITE)
143,759	55	Weighted Average
128,758		89.57% Pervious Area
15,001		10.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	51	0.0780	0.07		Sheet Flow, A-B
					Woods: Dense underbrush n= 0.800 P2= 3.10"
1.5	58	0.0080	0.63		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
20.4	503	0.0270	0.41		Shallow Concentrated Flow, C-D
					Forest w/Heavy Litter Kv= 2.5 fps
34.8	612	Total			

Subcatchment 20S:**Hydrograph**

25-36465 POST

Type III 24-hr 2-YR Rainfall=3.10"

Prepared by Atlantic Resource Consultants

Printed 6/7/2026

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Page 10

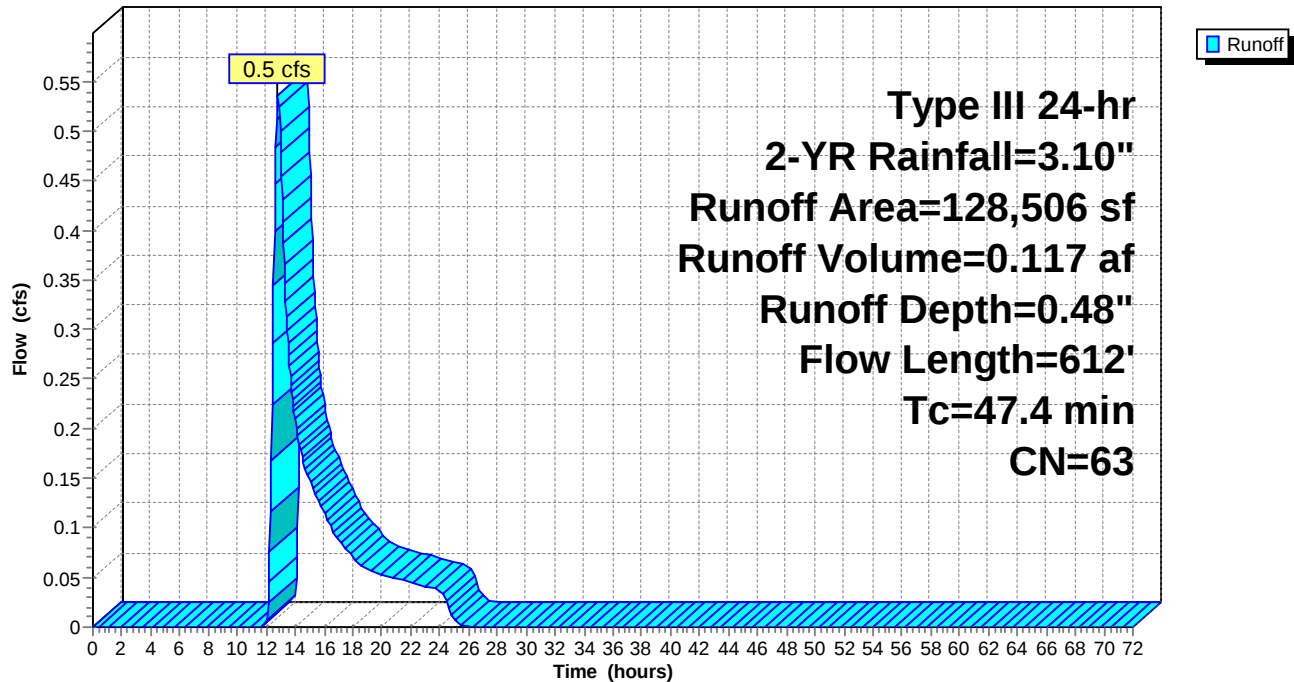
Summary for Subcatchment 30S:

Runoff = 0.5 cfs @ 12.80 hrs, Volume= 0.117 af, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
1,878	96	Gravel surface, HSG C
2,328	96	Gravel surface, HSG A
3,117	74	>75% Grass cover, Good, HSG C
7,509	39	>75% Grass cover, Good, HSG A
19,834	68	<50% Grass cover, Poor, HSG A
* 27,367	30	Woods, Good, HSG A (OFFSITE)
33,248	70	Woods, Good, HSG C
* 33,225	80	1/2 acre lots, 25% imp, HSG C (OFFSITE)
128,506	63	Weighted Average
120,200		93.54% Pervious Area
8,306		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.4	115	0.0340	0.06		Sheet Flow, A-B
					Woods: Dense underbrush n= 0.800 P2= 3.10"
2.5	122	0.0130	0.80		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
7.3	236	0.0460	0.54		Shallow Concentrated Flow, C-D
					Forest w/Heavy Litter Kv= 2.5 fps
1.0	79	0.0370	1.35		Shallow Concentrated Flow, D-E
					Short Grass Pasture Kv= 7.0 fps
2.2	60	0.0320	0.45		Shallow Concentrated Flow, E-F
					Forest w/Heavy Litter Kv= 2.5 fps
47.4	612	Total			

Subcatchment 30S:**Hydrograph**

Summary for Subcatchment 31S:

Runoff = 0.3 cfs @ 12.10 hrs, Volume= 0.021 af, Depth= 0.92"

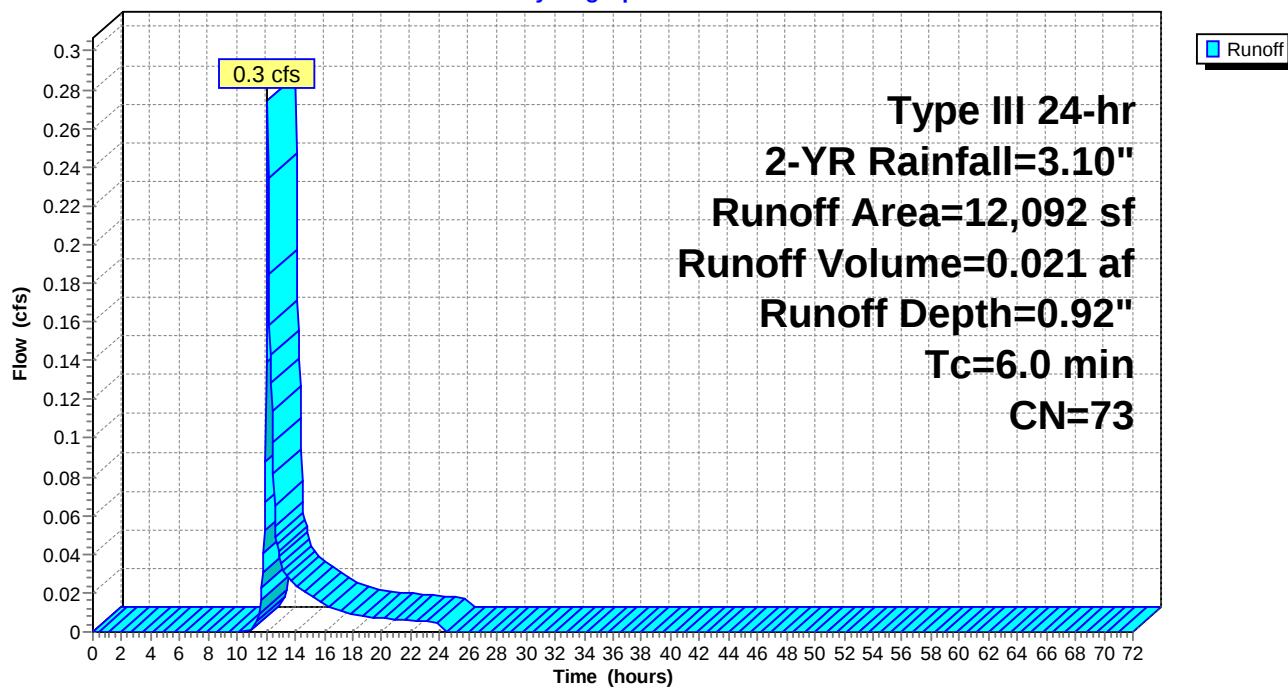
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
7,198	96	Gravel surface, HSG B
4,894	39	>75% Grass cover, Good, HSG A
12,092	73	Weighted Average
12,092		100.00% Pervious Area

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

Subcatchment 31S:

Hydrograph



25-36465 POST

Type III 24-hr 2-YR Rainfall=3.10"

Prepared by Atlantic Resource Consultants

Printed 6/7/2026

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Page 13

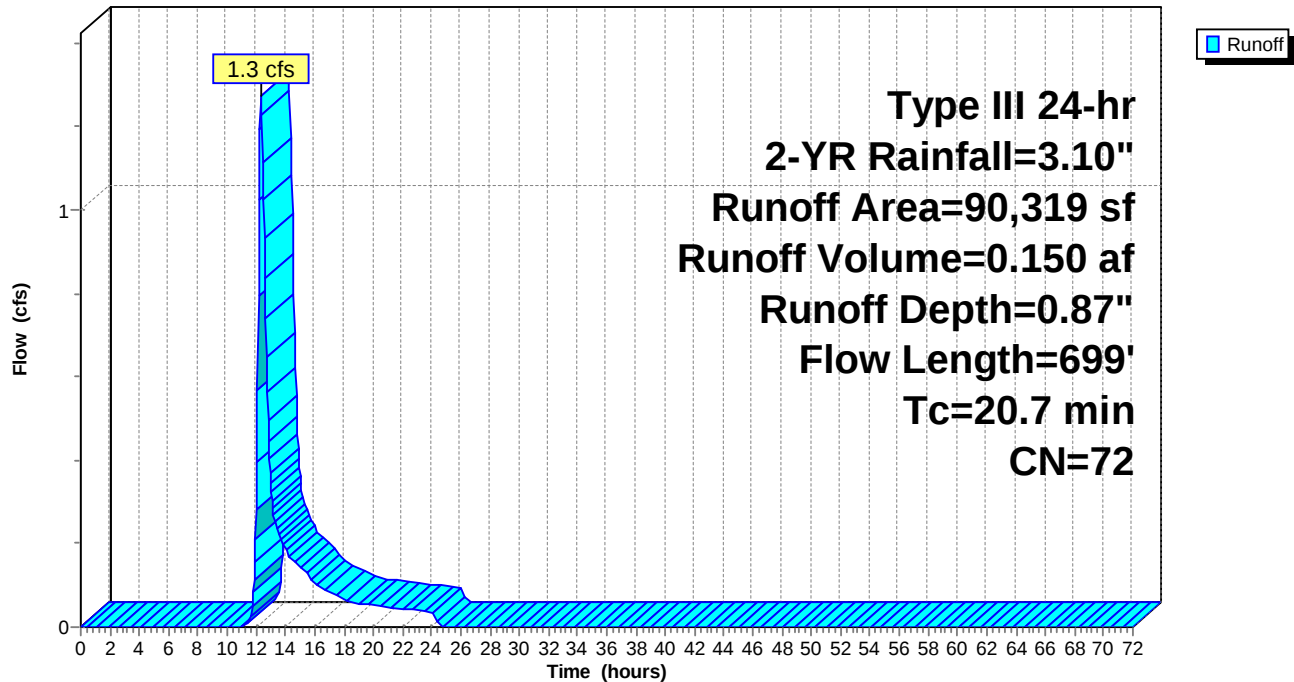
Summary for Subcatchment 40S:

Runoff = 1.3 cfs @ 12.32 hrs, Volume= 0.150 af, Depth= 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
8,816	70	Woods, Good, HSG C
27,189	68	<50% Grass cover, Poor, HSG A
1,086	96	Gravel surface, HSG A
3,211	39	>75% Grass cover, Good, HSG A
* 15,087	70	Woods, Good, HSG C (OFFSITE)
* 34,930	80	1/2 acre lots, 25% imp, HSG C (OFFSITE)
90,319	72	Weighted Average
81,587		90.33% Pervious Area
8,733		9.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	75	0.0460	0.15		Sheet Flow, A-B
					Grass: Dense n= 0.240 P2= 3.10"
8.4	372	0.0110	0.73		Shallow Concentrated Flow, B-C
					Short Grass Pasture Kv= 7.0 fps
4.0	252	0.0230	1.06		Shallow Concentrated Flow, C-D
					Short Grass Pasture Kv= 7.0 fps
20.7	699	Total			

Subcatchment 40S:**Hydrograph**

25-36465 POST

Type III 24-hr 2-YR Rainfall=3.10"

Prepared by Atlantic Resource Consultants

Printed 6/7/2026

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Page 15

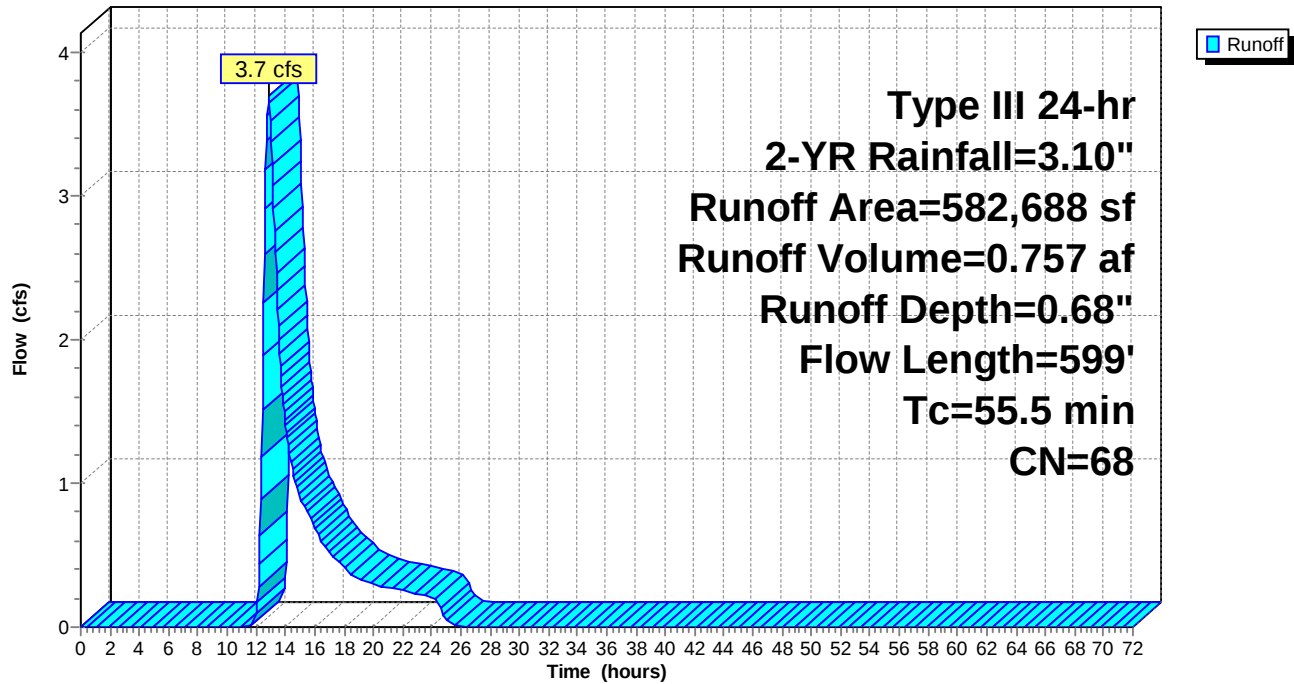
Summary for Subcatchment 50S:

Runoff = 3.7 cfs @ 12.87 hrs, Volume= 0.757 af, Depth= 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

	Area (sf)	CN	Description
*	351,698	77	Woods, Good, HSG D (wetlands)
	70,894	72	Woods/grass comb., Good, HSG C
	57,075	30	Woods, Good, HSG A
	3,166	98	Unconnected roofs, HSG A
	14,625	86	<50% Grass cover, Poor, HSG C
	2,152	39	>75% Grass cover, Good, HSG A
	18,876	96	Gravel surface, HSG A
	64,202	39	>75% Grass cover, Good, HSG A
	582,688	68	Weighted Average
	579,522		99.46% Pervious Area
	3,166		0.54% Impervious Area
	3,166		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.0	75	0.0160	0.04		Sheet Flow, A-B
					Woods: Dense underbrush n= 0.800 P2= 3.10"
22.5	524	0.0240	0.39		Shallow Concentrated Flow, C-D
					Forest w/Heavy Litter Kv= 2.5 fps
55.5	599	Total			

Subcatchment 50S:**Hydrograph**

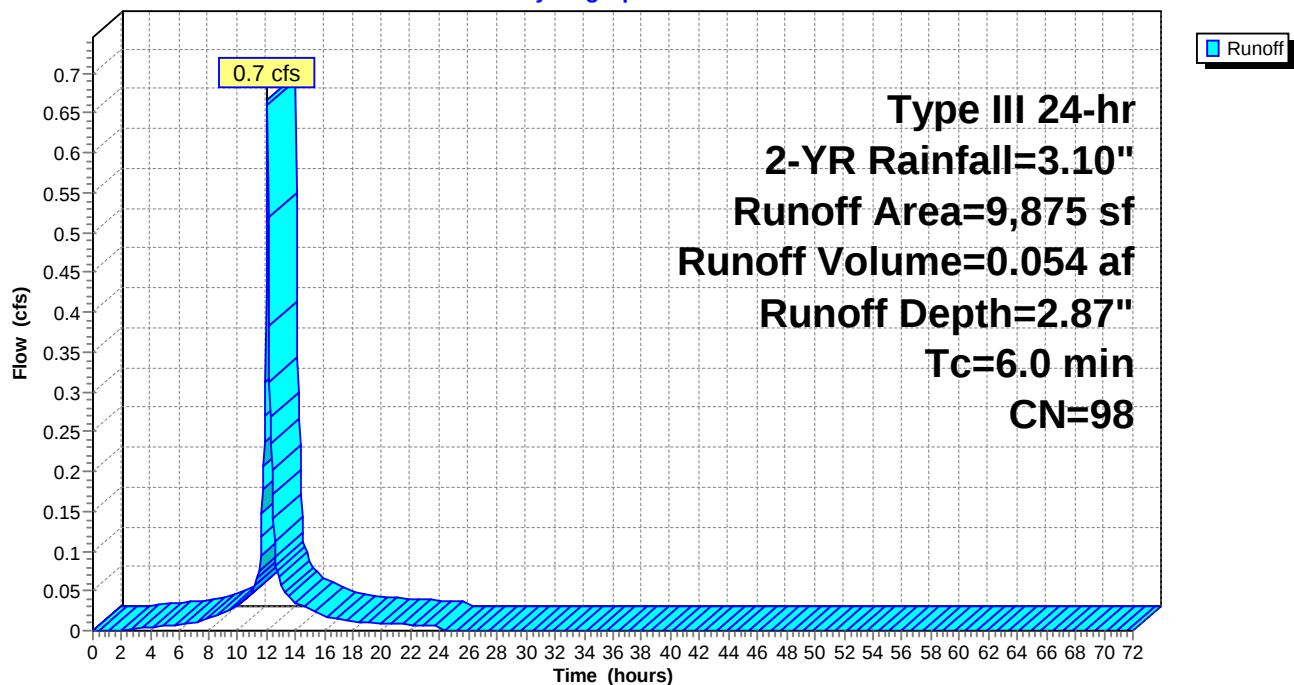
Summary for Subcatchment 51S:

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 0.054 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
9,875	98	Roofs, HSG D
9,875		100.00% Impervious Area

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

Subcatchment 51S:**Hydrograph**

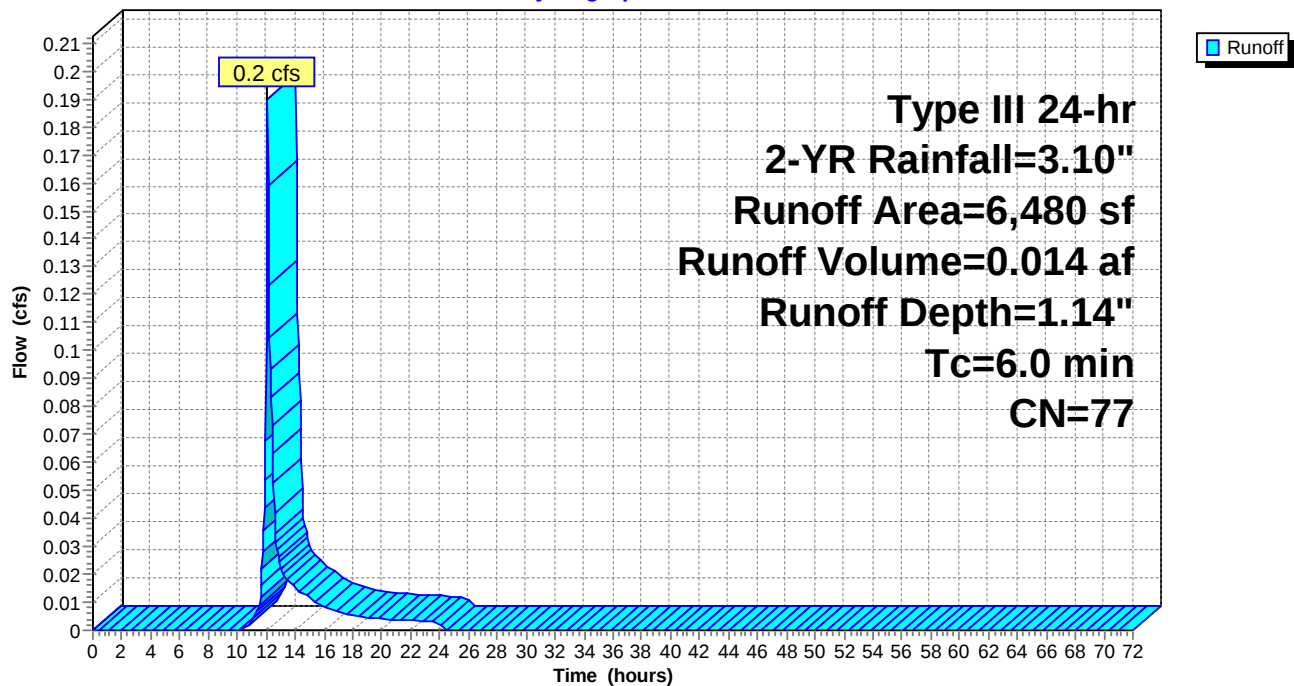
Summary for Subcatchment 52S:

Runoff = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
4,208	98	Roofs, HSG D
2,272	39	>75% Grass cover, Good, HSG A
6,480	77	Weighted Average
2,272		35.06% Pervious Area
4,208		64.94% Impervious Area

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

Subcatchment 52S:**Hydrograph**

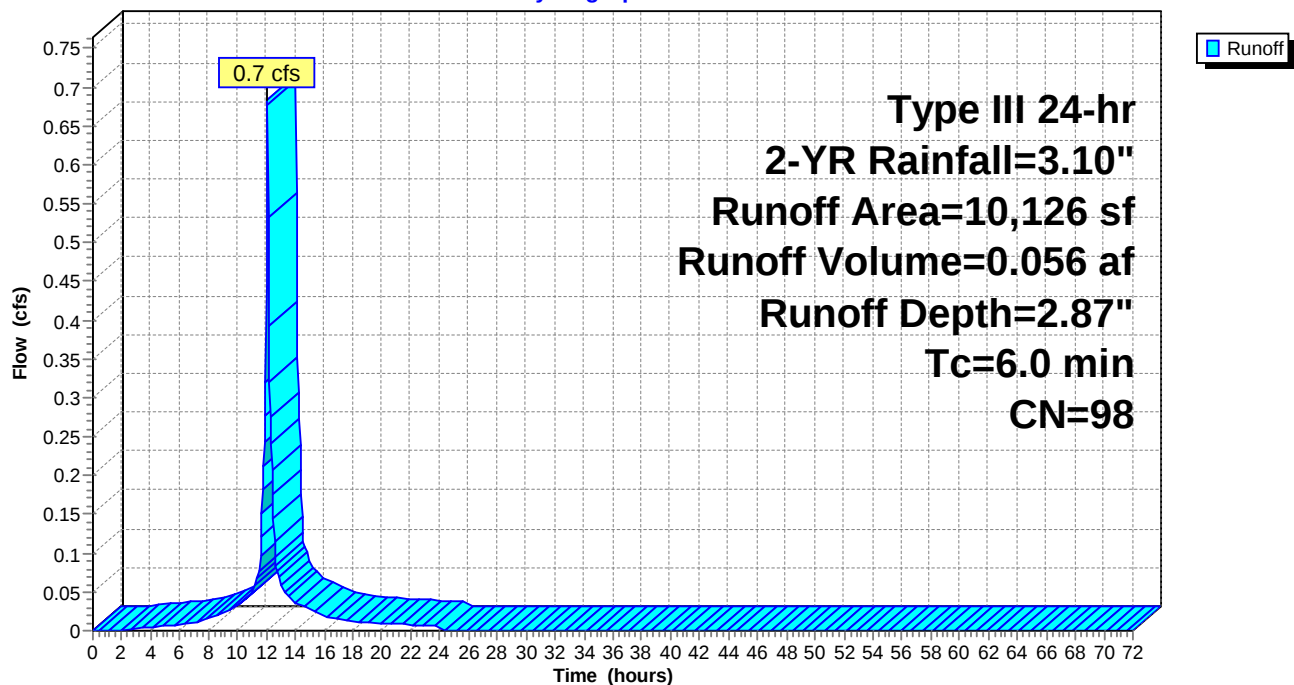
Summary for Subcatchment 53S:

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
10,126	98	Roofs, HSG D
10,126		100.00% Impervious Area

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

Subcatchment 53S:**Hydrograph**

Summary for Subcatchment 60S:

Runoff = 0.0 cfs @ 12.47 hrs, Volume= 0.002 af, Depth= 0.13"

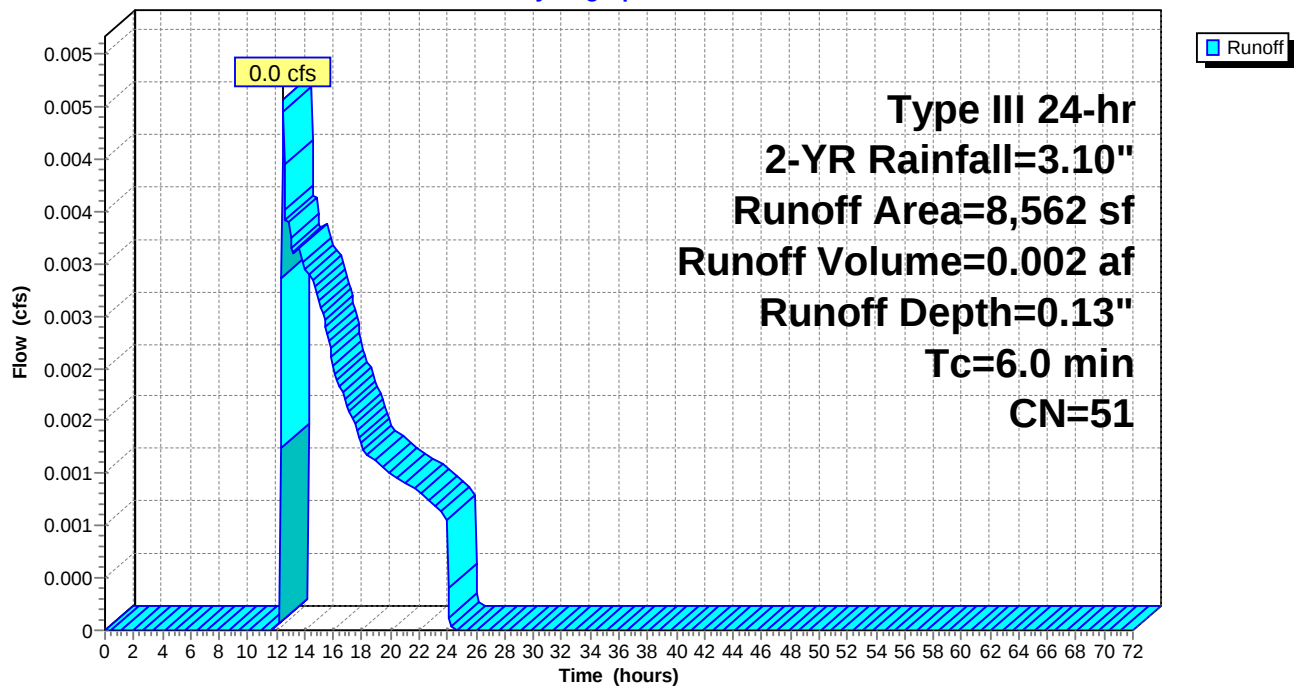
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
2,665	96	Gravel surface, HSG A
5,813	30	Woods, Good, HSG A
84	39	>75% Grass cover, Good, HSG A
8,562	51	Weighted Average
8,562		100.00% Pervious Area

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

Subcatchment 60S:

Hydrograph



Summary for Subcatchment 61S:

Runoff = 0.1 cfs @ 12.10 hrs, Volume= 0.011 af, Depth= 1.08"

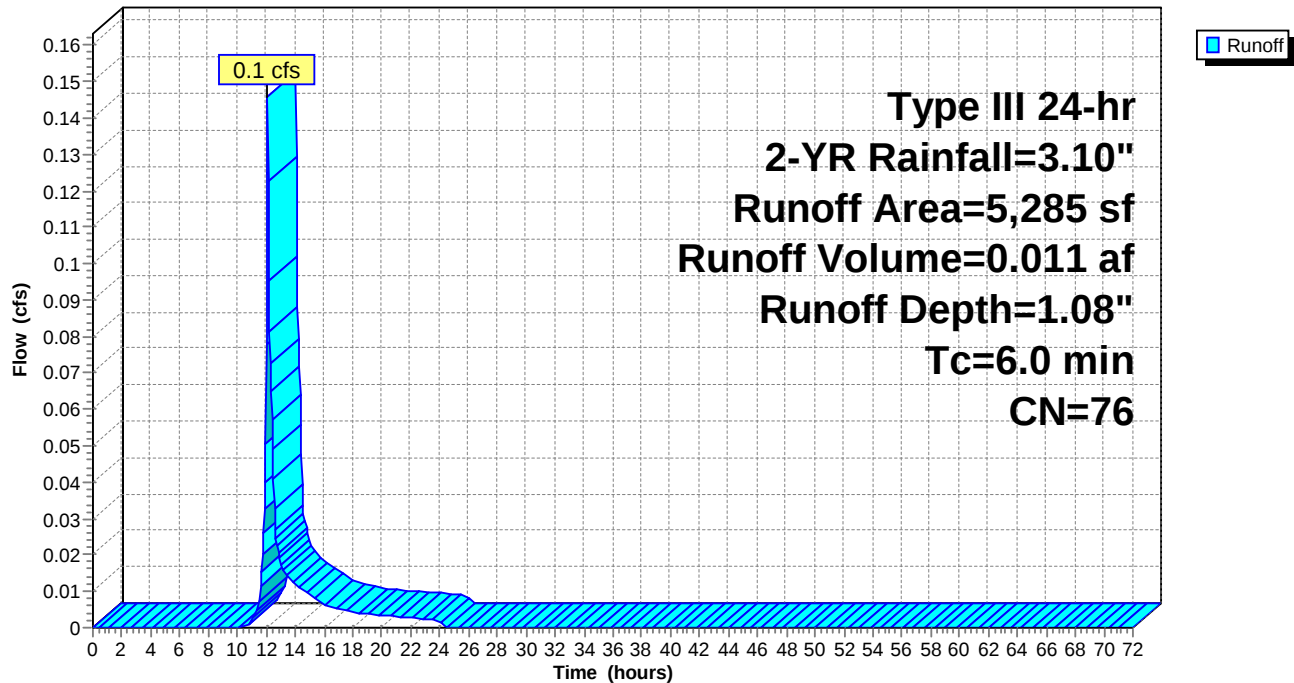
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (sf)	CN	Description
1,194	98	Roofs, HSG D
2,199	96	Gravel surface, HSG B
1,892	39	>75% Grass cover, Good, HSG A
5,285	76	Weighted Average
4,091		77.41% Pervious Area
1,194		22.59% Impervious Area

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

Subcatchment 61S:

Hydrograph



Summary for Reach 1R:

Inflow Area = 9.085 ac, 8.18% Impervious, Inflow Depth = 0.17" for 2-YR event
 Inflow = 0.3 cfs @ 12.80 hrs, Volume= 0.126 af
 Outflow = 0.3 cfs @ 12.95 hrs, Volume= 0.126 af, Atten= 1%, Lag= 9.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.50 fps, Min. Travel Time= 5.4 min

Avg. Velocity= 0.21 fps, Avg. Travel Time= 13.1 min

Peak Storage= 102 cf @ 12.86 hrs

Average Depth at Peak Storage= 0.06'

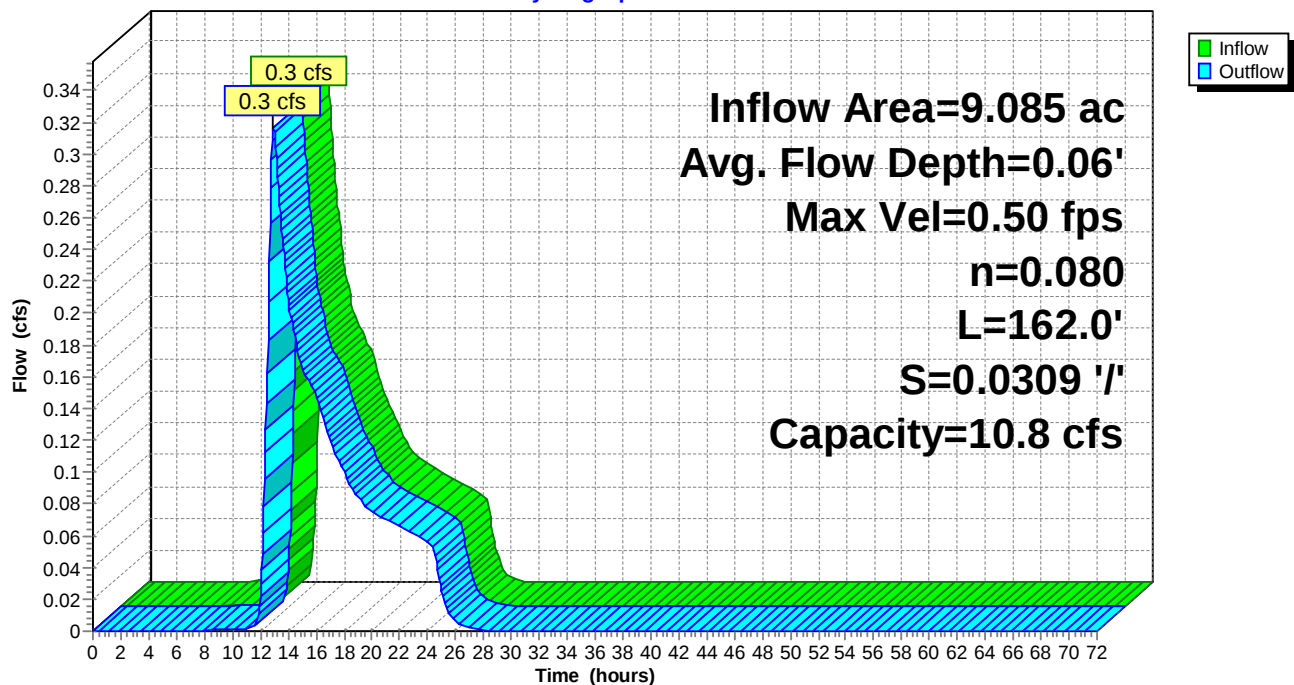
Bank-Full Depth= 0.50' Flow Area= 5.8 sf, Capacity= 10.8 cfs

10.00' x 0.50' deep channel, n= 0.080 Earth, dense brush, high stage

Side Slope Z-value= 3.0 '/' Top Width= 13.00'

Length= 162.0' Slope= 0.0309 '/'

Inlet Invert= 235.00', Outlet Invert= 230.00'

**Reach 1R:****Hydrograph**

Summary for Reach 2R:

Inflow Area = 9.085 ac, 8.18% Impervious, Inflow Depth = 0.17" for 2-YR event
 Inflow = 0.3 cfs @ 12.95 hrs, Volume= 0.126 af
 Outflow = 0.3 cfs @ 13.56 hrs, Volume= 0.126 af, Atten= 9%, Lag= 36.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.29 fps, Min. Travel Time= 19.3 min

Avg. Velocity= 0.10 fps, Avg. Travel Time= 53.2 min

Peak Storage= 333 cf @ 13.23 hrs

Average Depth at Peak Storage= 0.03'

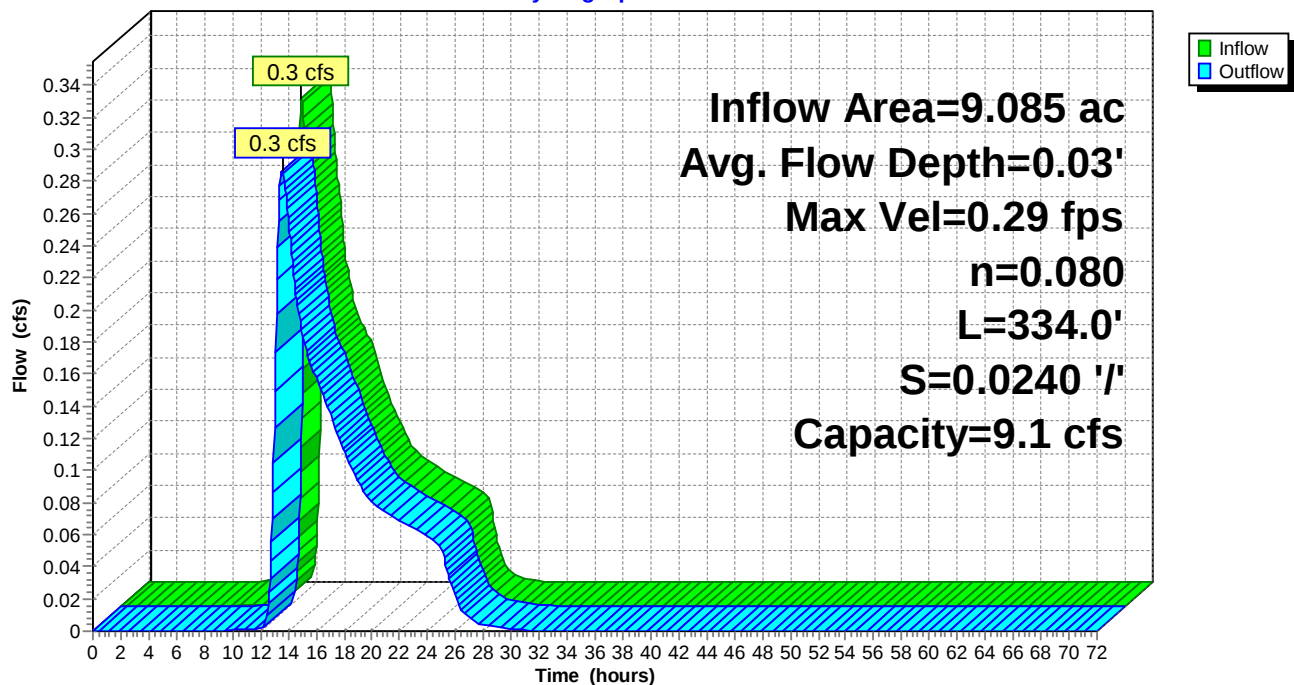
Bank-Full Depth= 0.25' Flow Area= 8.8 sf, Capacity= 9.1 cfs

30.00' x 0.25' deep channel, n= 0.080 Earth, dense brush, high stage

Side Slope Z-value= 20.0 ' Top Width= 40.00'

Length= 334.0' Slope= 0.0240 '/'

Inlet Invert= 230.00', Outlet Invert= 222.00'

**Reach 2R:****Hydrograph**

25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.10"

Printed 6/7/2026

Page 24

Summary for Reach 3R:

Inflow Area = 4.104 ac, 11.79% Impervious, Inflow Depth = 0.24" for 2-YR event
Inflow = 0.3 cfs @ 12.76 hrs, Volume= 0.080 af
Outflow = 0.3 cfs @ 12.78 hrs, Volume= 0.080 af, Atten= 0%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 4.10 fps, Min. Travel Time= 0.8 min

Avg. Velocity= 1.72 fps, Avg. Travel Time= 1.9 min

Peak Storage= 16 cf @ 12.77 hrs

Average Depth at Peak Storage= 0.15'

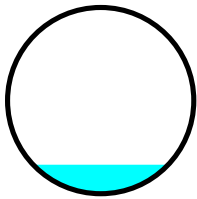
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.1 cfs

12.0" Round Pipe

n= 0.012

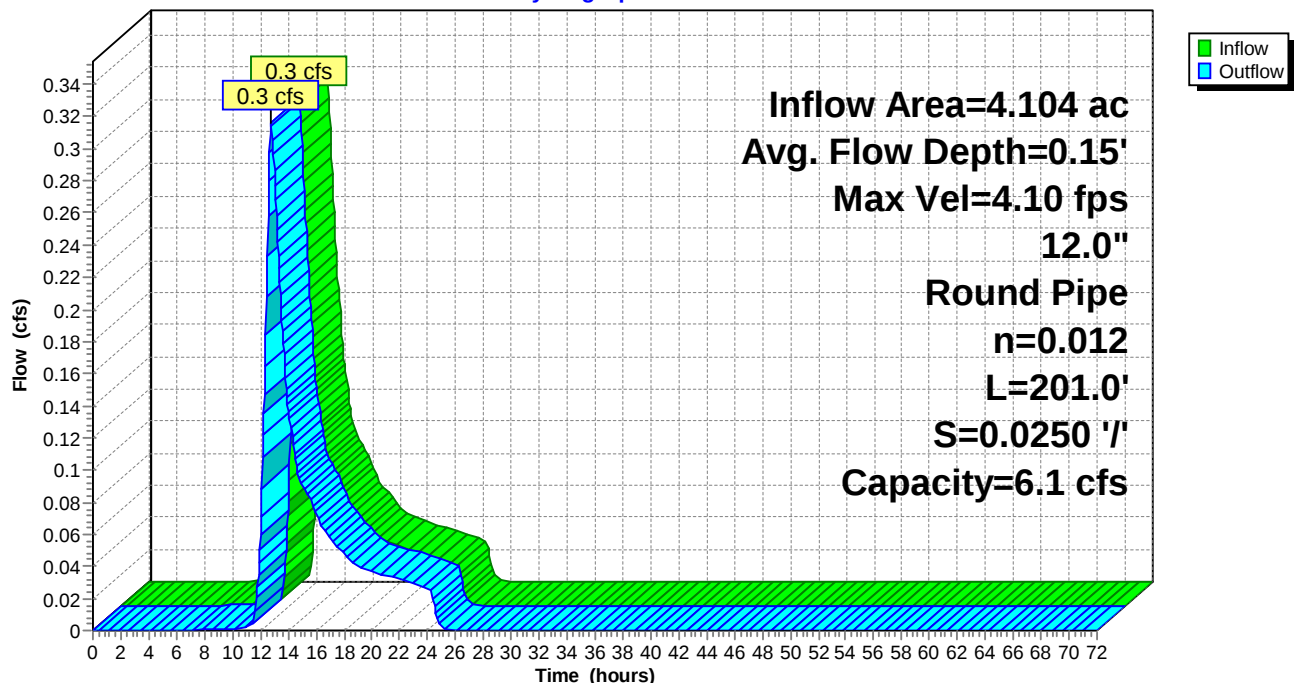
Length= 201.0' Slope= 0.0250 '/'

Inlet Invert= 242.83', Outlet Invert= 237.80'



Reach 3R:

Hydrograph



Summary for Reach 4R:

Inflow Area = 3.417 ac, 9.21% Impervious, Inflow Depth = 0.44" for 2-YR event
 Inflow = 0.6 cfs @ 12.80 hrs, Volume= 0.126 af
 Outflow = 0.6 cfs @ 12.83 hrs, Volume= 0.126 af, Atten= 0%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 5.09 fps, Min. Travel Time= 1.1 min

Avg. Velocity= 2.59 fps, Avg. Travel Time= 2.1 min

Peak Storage= 37 cf @ 12.81 hrs

Average Depth at Peak Storage= 0.17'

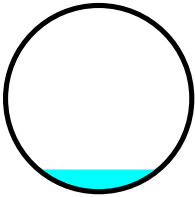
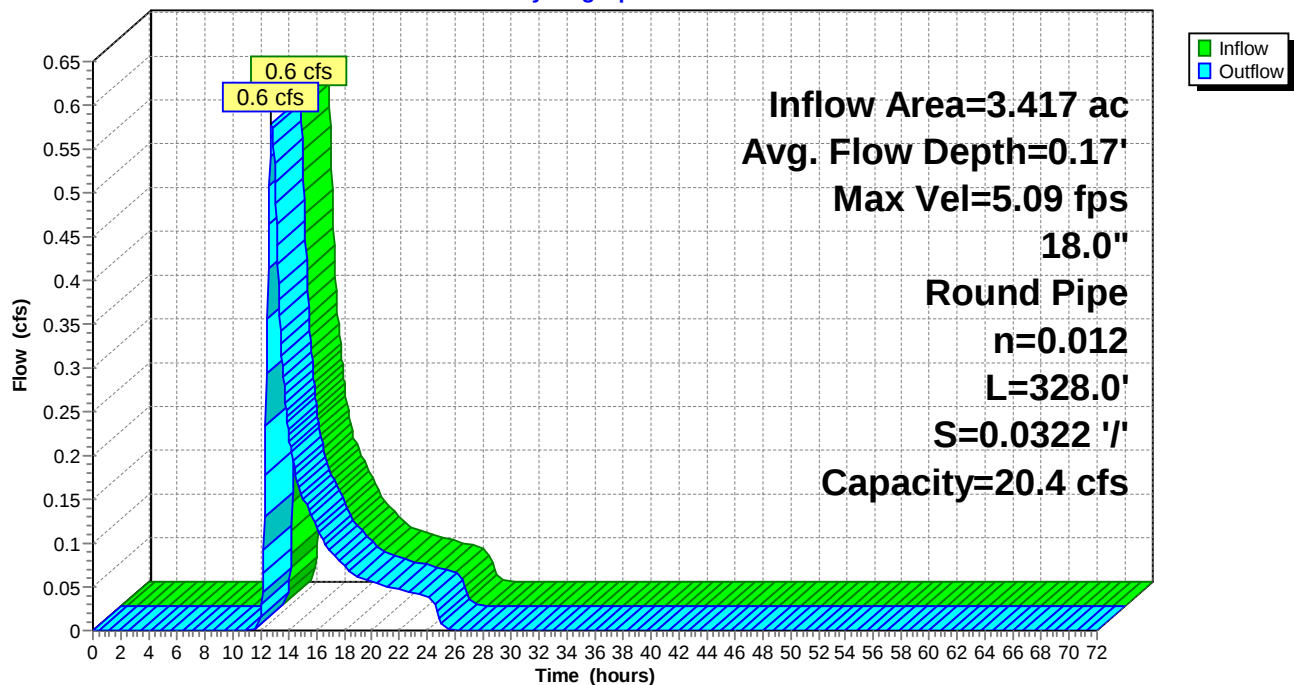
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 20.4 cfs

18.0" Round Pipe

n= 0.012

Length= 328.0' Slope= 0.0322 '/'

Inlet Invert= 245.05', Outlet Invert= 234.50'

**Reach 4R:****Hydrograph**

25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.10"

Printed 6/7/2026

Page 26

Summary for Reach 5R:

Inflow Area = 3.643 ac, 14.86% Impervious, Inflow Depth = 0.45" for 2-YR event
Inflow = 0.6 cfs @ 12.83 hrs, Volume= 0.135 af
Outflow = 0.6 cfs @ 12.86 hrs, Volume= 0.135 af, Atten= 0%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 2.73 fps, Min. Travel Time= 1.0 min

Avg. Velocity= 1.05 fps, Avg. Travel Time= 2.7 min

Peak Storage= 37 cf @ 12.85 hrs

Average Depth at Peak Storage= 0.27'

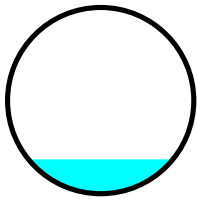
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.3 cfs

18.0" Round Pipe

n= 0.012

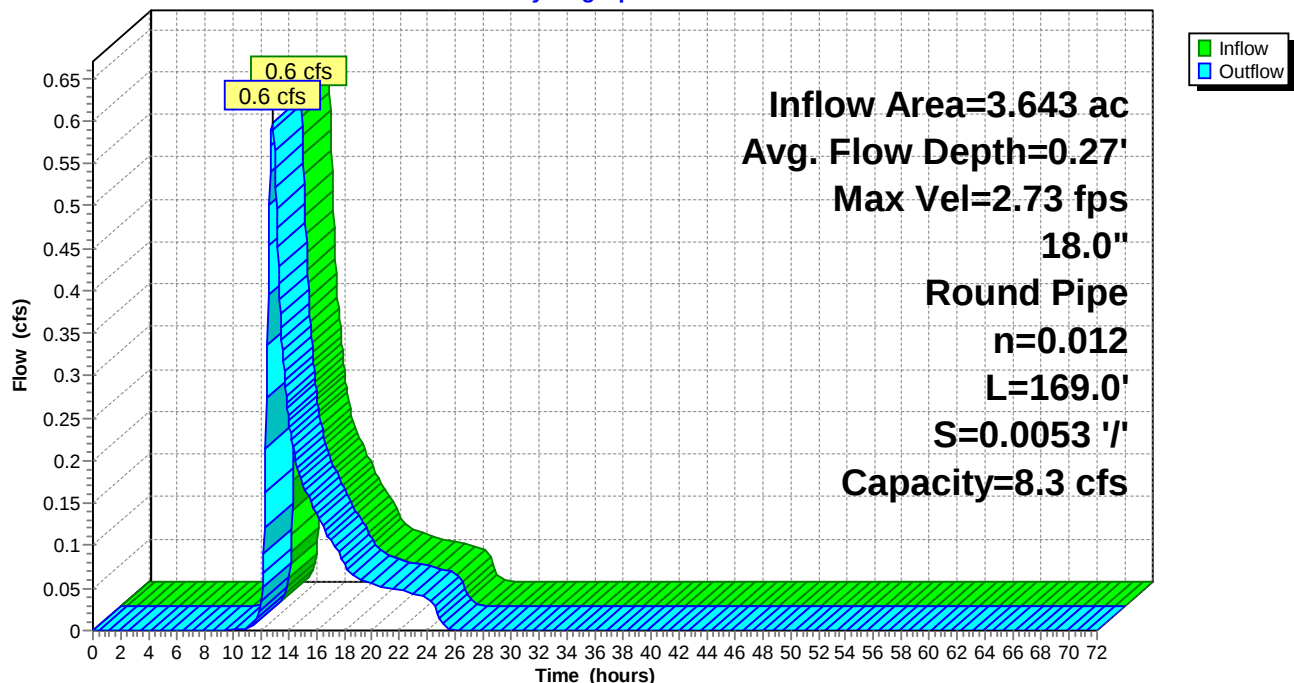
Length= 169.0' Slope= 0.0053 '/'

Inlet Invert= 234.40', Outlet Invert= 233.50'



Reach 5R:

Hydrograph



25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 2-YR Rainfall=3.10"

Printed 6/7/2026

Page 27

Summary for Reach 6R:

Inflow Area = 3.876 ac, 19.97% Impervious, Inflow Depth = 0.50" for 2-YR event
Inflow = 0.7 cfs @ 12.69 hrs, Volume= 0.162 af
Outflow = 0.6 cfs @ 13.48 hrs, Volume= 0.162 af, Atten= 13%, Lag= 47.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.37 fps, Min. Travel Time= 27.3 min

Avg. Velocity= 0.09 fps, Avg. Travel Time= 108.9 min

Peak Storage= 960 cf @ 13.03 hrs

Average Depth at Peak Storage= 0.05'

Bank-Full Depth= 0.25' Flow Area= 8.8 sf, Capacity= 8.9 cfs

30.00' x 0.25' deep channel, n= 0.080

Side Slope Z-value= 20.0 ' Top Width= 40.00'

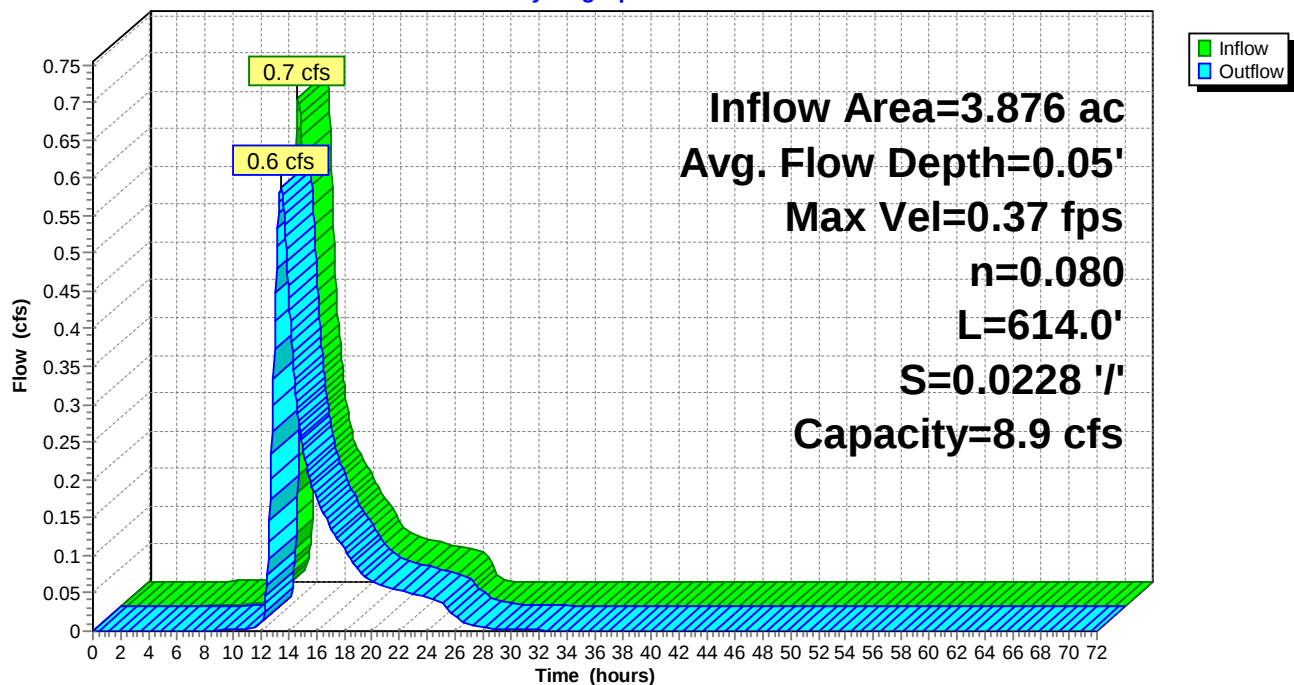
Length= 614.0' Slope= 0.0228 '/'

Inlet Invert= 236.00', Outlet Invert= 222.00'



Reach 6R:

Hydrograph



Summary for Reach 7R:

Inflow Area = 2.073 ac, 9.67% Impervious, Inflow Depth = 0.87" for 2-YR event
 Inflow = 1.3 cfs @ 12.32 hrs, Volume= 0.150 af
 Outflow = 0.7 cfs @ 13.20 hrs, Volume= 0.150 af, Atten= 42%, Lag= 52.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.41 fps, Min. Travel Time= 32.8 min

Avg. Velocity= 0.09 fps, Avg. Travel Time= 145.1 min

Peak Storage= 1,456 cf @ 12.65 hrs

Average Depth at Peak Storage= 0.06'

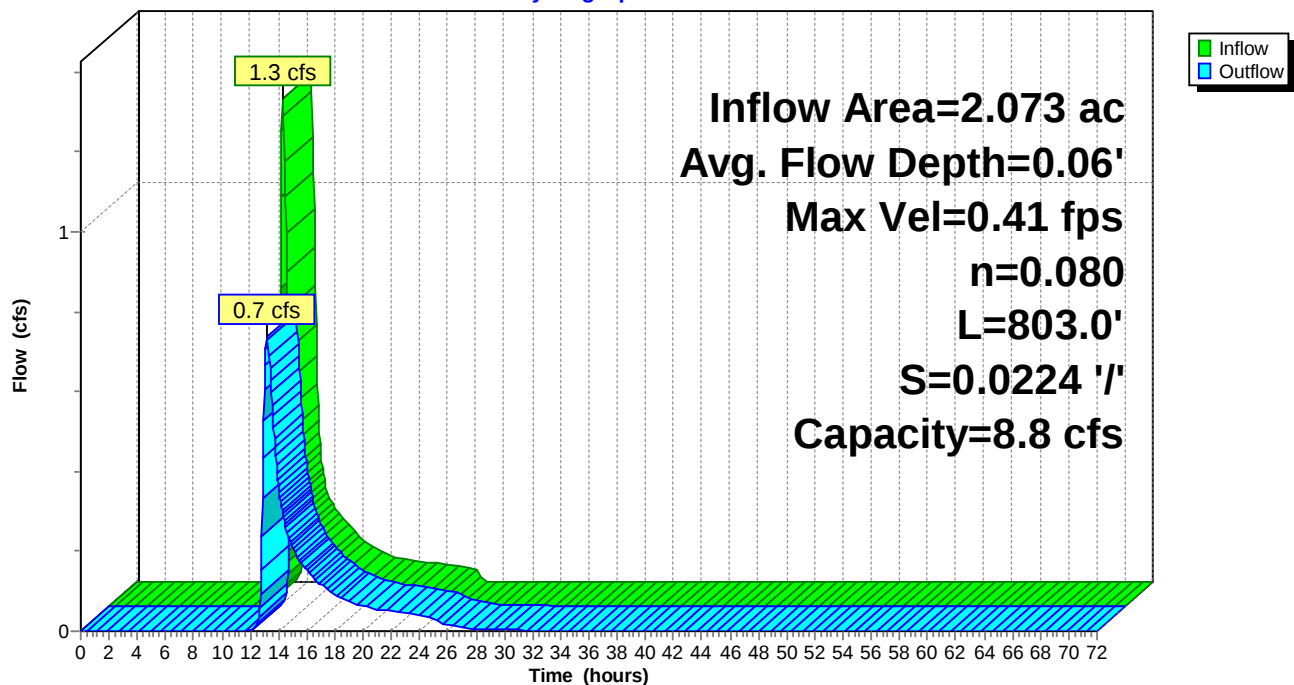
Bank-Full Depth= 0.25' Flow Area= 8.8 sf, Capacity= 8.8 cfs

30.00' x 0.25' deep channel, n= 0.080

Side Slope Z-value= 20.0 '/' Top Width= 40.00'

Length= 803.0' Slope= 0.0224 '/'

Inlet Invert= 240.00', Outlet Invert= 222.00'

**Reach 7R:****Hydrograph**

Summary for Pond BR-1: BR-1

Inflow Area = 0.387 ac, 0.00% Impervious, Inflow Depth = 1.46" for 2-YR event
 Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.047 af
 Outflow = 0.1 cfs @ 12.57 hrs, Volume= 0.047 af, Atten= 81%, Lag= 28.7 min
 Discarded = 0.1 cfs @ 11.80 hrs, Volume= 0.044 af
 Primary = 0.0 cfs @ 12.57 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 242.50' @ 12.57 hrs Surf.Area= 1,789 sf Storage= 590 cf
 Flood Elev= 187.00' Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= 35.4 min calculated for 0.047 af (100% of inflow)
 Center-of-Mass det. time= 35.4 min (873.2 - 837.8)

Volume	Invert	Avail.Storage	Storage Description		
#1	241.50'	4,219 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
241.50	1,789	0.0	0	0	1,789
242.00	1,789	33.0	295	295	1,864
242.50	1,789	33.0	295	590	1,939
243.00	1,789	33.0	295	886	2,014
243.50	1,789	33.0	295	1,181	2,089
244.00	1,789	100.0	895	2,075	2,164
244.50	2,124	100.0	977	3,052	2,508
245.00	2,551	100.0	1,167	4,219	2,943

Device	Routing	Invert	Outlet Devices
#1	Primary	240.25'	8.0" Round Culvert L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.25' / 239.75' S= 0.0200 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	244.50'	10.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	241.83'	1.0" Vert. Orifice/Grate C= 0.600
#4	Discarded	241.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.1 cfs @ 11.80 hrs HW=241.54' (Free Discharge)

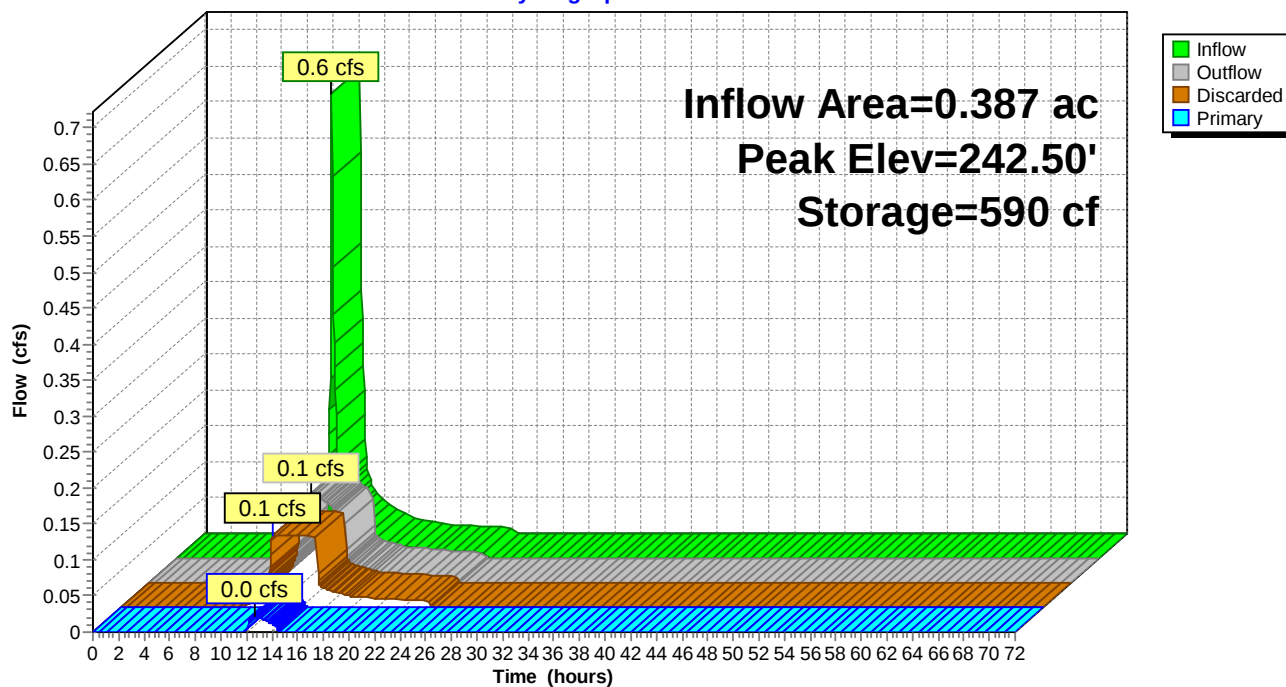
↑ **4=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=0.0 cfs @ 12.57 hrs HW=242.50' (Free Discharge)

↑ **1=Culvert** (Passes 0.0 cfs of 1.8 cfs potential flow)

↑ **2=Orifice/Grate** (Controls 0.0 cfs)

↑ **3=Orifice/Grate** (Orifice Controls 0.0 cfs @ 3.81 fps)

Pond BR-1: BR-1**Hydrograph**

Summary for Pond BR-2: BR-2

Inflow Area = 0.278 ac, 0.00% Impervious, Inflow Depth = 0.92" for 2-YR event
 Inflow = 0.3 cfs @ 12.10 hrs, Volume= 0.021 af
 Outflow = 0.1 cfs @ 12.56 hrs, Volume= 0.021 af, Atten= 76%, Lag= 27.2 min
 Discarded = 0.0 cfs @ 11.85 hrs, Volume= 0.017 af
 Primary = 0.0 cfs @ 12.56 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 241.76' @ 12.56 hrs Surf.Area= 725 sf Storage= 223 cf

Plug-Flow detention time= 24.0 min calculated for 0.021 af (100% of inflow)
 Center-of-Mass det. time= 24.0 min (891.5 - 867.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	240.83'	1,586 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
240.83	725	0.0	0	0	725
241.50	725	33.0	160	160	789
242.00	725	33.0	120	280	837
242.50	725	33.0	120	400	884
243.00	725	100.0	363	762	932
244.00	928	100.0	824	1,586	1,159

Device	Routing	Invert	Outlet Devices
#1	Primary	240.83'	8.0" Round Culvert L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.83' / 240.50' S= 0.0132 ' / Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Device 1	243.50'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	240.83'	1.0" Vert. Orifice/Grate C= 0.600
#4	Discarded	240.83'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.0 cfs @ 11.85 hrs HW=240.86' (Free Discharge)

↑ **4=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.56 hrs HW=241.76' (Free Discharge)

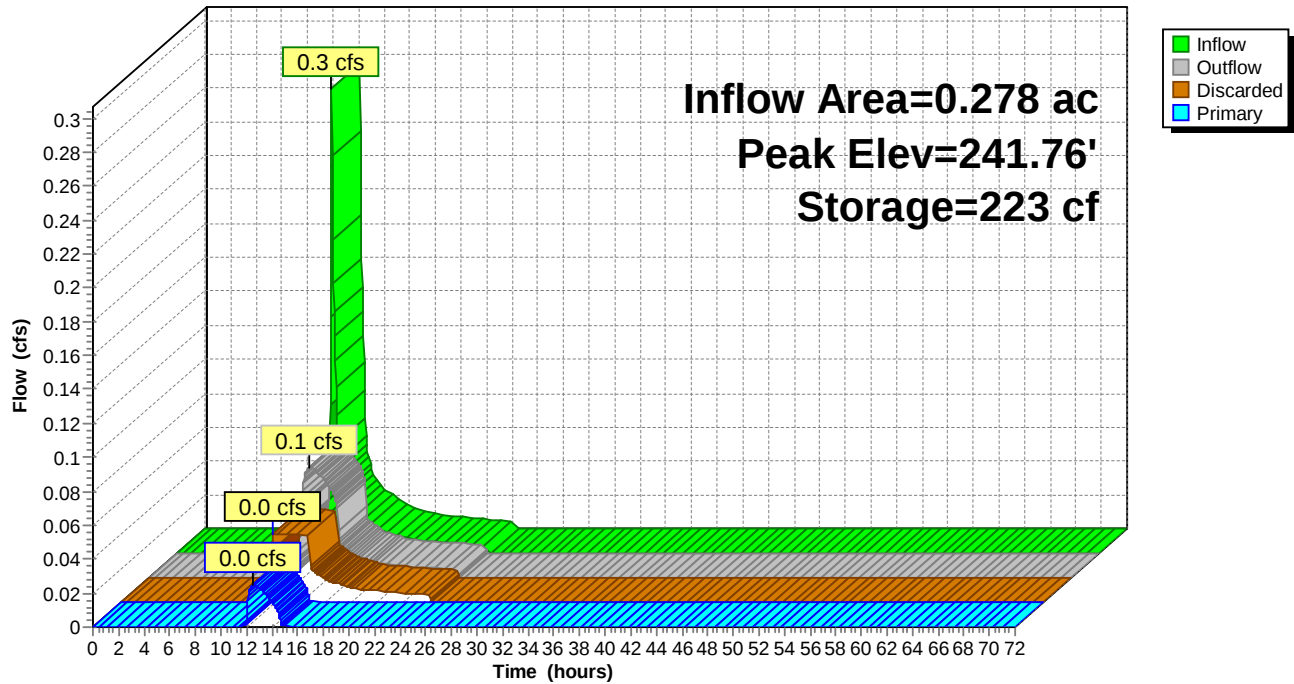
↑ **1=Culvert** (Passes 0.0 cfs of 1.0 cfs potential flow)

↑ **2=Orifice/Grate** (Controls 0.0 cfs)

↑ **3=Orifice/Grate** (Orifice Controls 0.0 cfs @ 4.55 fps)

Pond BR-2: BR-2

Hydrograph



Summary for Pond BR-3: BR-3

Inflow Area = 0.121 ac, 22.59% Impervious, Inflow Depth = 1.08" for 2-YR event
 Inflow = 0.1 cfs @ 12.10 hrs, Volume= 0.011 af
 Outflow = 0.0 cfs @ 12.48 hrs, Volume= 0.011 af, Atten= 70%, Lag= 23.1 min
 Discarded = 0.0 cfs @ 11.80 hrs, Volume= 0.008 af
 Primary = 0.0 cfs @ 12.48 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 241.77' @ 12.48 hrs Surf.Area= 337 sf Storage= 104 cf

Plug-Flow detention time= 16.6 min calculated for 0.011 af (100% of inflow)
 Center-of-Mass det. time= 16.6 min (874.1 - 857.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	240.83'	781 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
240.83	337	0.0	0	0	337
241.50	337	33.0	75	75	381
242.00	337	33.0	56	130	413
242.50	337	33.0	56	186	446
243.00	337	100.0	169	354	478
244.00	523	100.0	427	781	678

Device	Routing	Invert	Outlet Devices	
#1	Primary	240.83'	12.0" Round Culvert L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.83' / 240.50' S= 0.0132 ' / Cc= 0.900 n= 0.012, Flow Area= 0.79 sf	
#2	Device 1	243.50'	12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads	
#3	Device 1	240.83'	1.0" Vert. Orifice/Grate C= 0.600	
#4	Discarded	240.83'	2.410 in/hr Exfiltration over Surface area	

Discarded OutFlow Max=0.0 cfs @ 11.80 hrs HW=240.86' (Free Discharge)

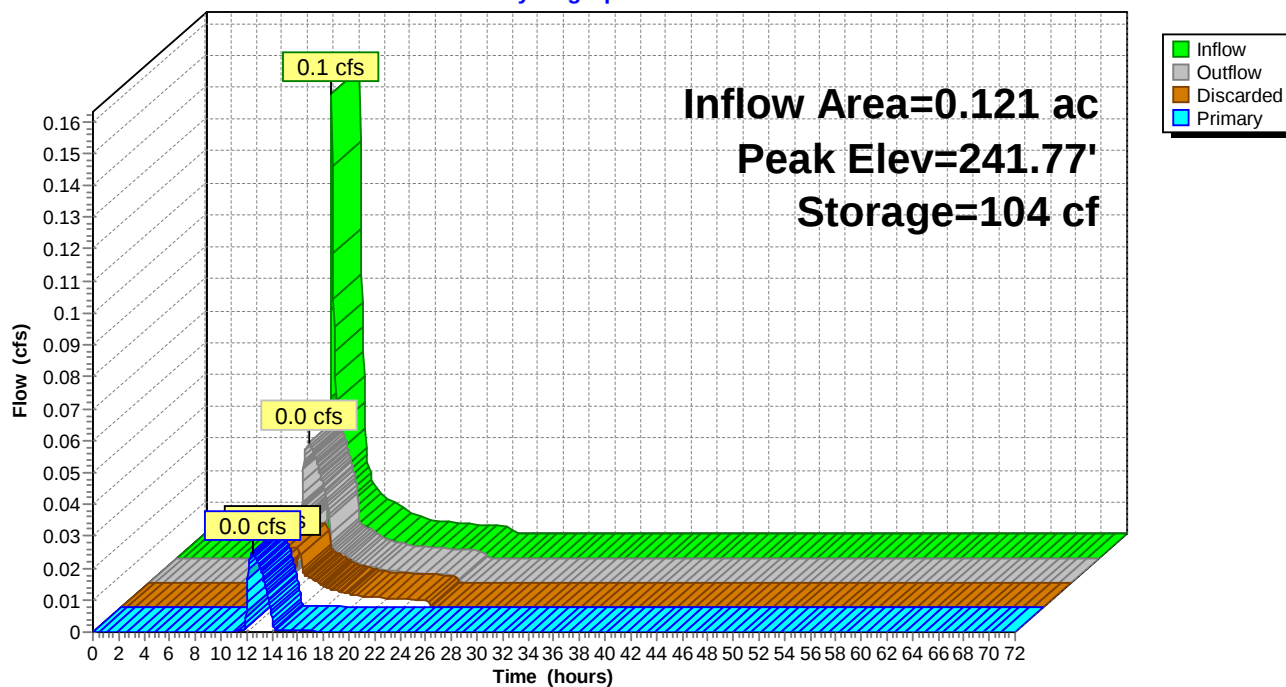
↑ **4=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.48 hrs HW=241.77' (Free Discharge)

↑ **1=Culvert** (Passes 0.0 cfs of 2.0 cfs potential flow)

↑ **2=Orifice/Grate** (Controls 0.0 cfs)

↑ **3=Orifice/Grate** (Orifice Controls 0.0 cfs @ 4.56 fps)

Pond BR-3: BR-3**Hydrograph**

Summary for Pond DS-1: DS-1

Inflow Area = 0.227 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2-YR event
 Inflow = 0.7 cfs @ 12.09 hrs, Volume = 0.054 af
 Outflow = 0.1 cfs @ 12.71 hrs, Volume = 0.054 af, Atten = 89%, Lag = 37.6 min
 Discarded = 0.1 cfs @ 12.71 hrs, Volume = 0.045 af
 Primary = 0.0 cfs @ 12.71 hrs, Volume = 0.010 af

Routing by Stor-Ind method, Time Span = 0.00-72.00 hrs, dt = 0.05 hrs

Peak Elev = 241.06' @ 12.71 hrs Surf.Area = 840 sf Storage = 804 cf

Plug-Flow detention time = 75.4 min calculated for 0.054 af (100% of inflow)

Center-of-Mass det. time = 75.4 min (832.4 - 757.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	238.50'	1,457 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.50	840	0.0	0	0
238.82	840	30.0	81	81
239.16	840	30.0	86	166
240.50	840	40.0	450	617
241.00	840	40.0	168	785
242.00	840	40.0	336	1,121
243.00	840	40.0	336	1,457

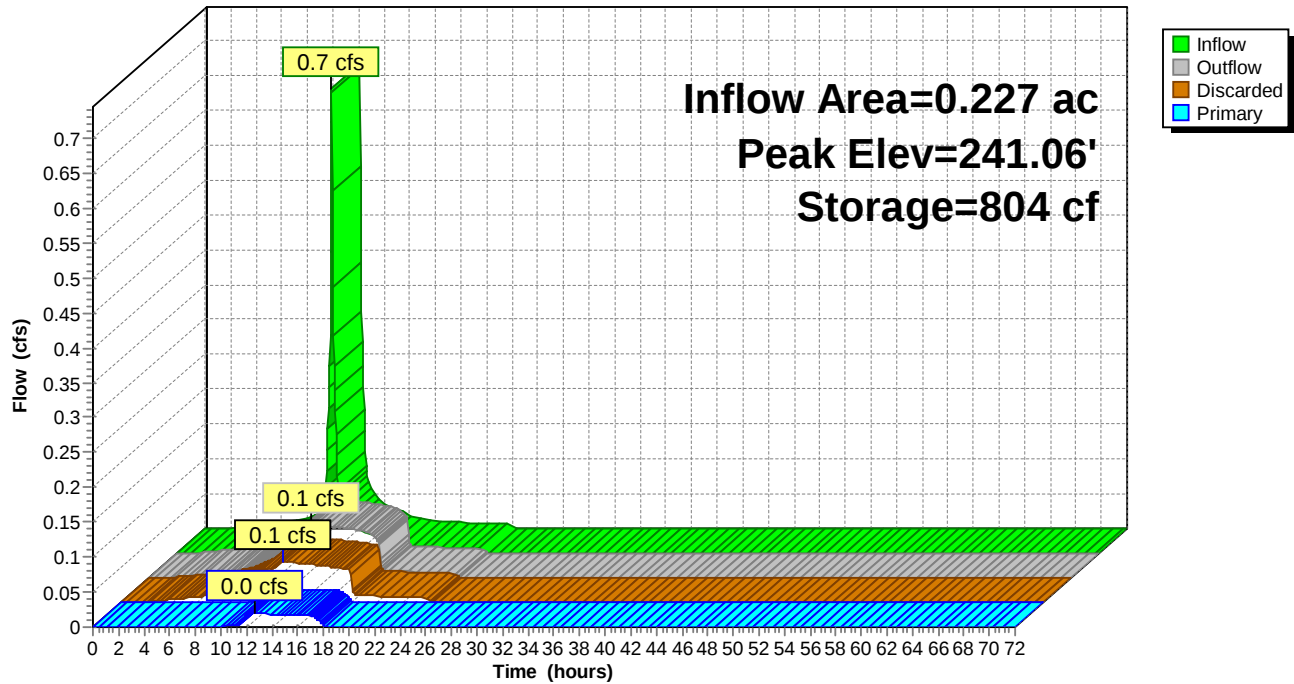
Device	Routing	Invert	Outlet Devices
#1	Primary	238.50'	1.0" Round Culvert L = 50.0' CPP, projecting, no headwall, Ke = 0.900 Inlet / Outlet Invert = 238.50' / 233.50' S = 0.1000 ' / ' Cc = 0.900 n = 0.012, Flow Area = 0.01 sf
#2	Discarded	238.50'	2.410 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 227.00'

Discarded OutFlow Max = 0.1 cfs @ 12.71 hrs HW = 241.06' (Free Discharge)

↑ **2=Exfiltration** (Controls 0.1 cfs)

Primary OutFlow Max = 0.0 cfs @ 12.71 hrs HW = 241.06' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 0.0 cfs @ 3.53 fps)

Pond DS-1: DS-1**Hydrograph**

Summary for Pond DS-2: DS-2

Inflow Area = 0.149 ac, 64.94% Impervious, Inflow Depth = 1.14" for 2-YR event
 Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.014 af
 Outflow = 0.0 cfs @ 12.52 hrs, Volume= 0.014 af, Atten= 75%, Lag= 25.5 min
 Discarded = 0.0 cfs @ 12.52 hrs, Volume= 0.011 af
 Primary = 0.0 cfs @ 12.52 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 241.55' @ 12.52 hrs Surf.Area= 413 sf Storage= 153 cf

Plug-Flow detention time= 23.0 min calculated for 0.014 af (100% of inflow)

Center-of-Mass det. time= 23.0 min (877.1 - 854.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	240.50'	723 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.50	413	0.0	0	0
240.83	413	30.0	41	41
241.00	413	30.0	21	62
242.50	413	40.0	248	310
243.00	413	40.0	83	392
244.00	413	40.0	165	558
245.00	413	40.0	165	723

Device	Routing	Invert	Outlet Devices
#1	Primary	240.50'	1.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.50' / 233.50' S= 0.1400 ' / ' Cc= 0.900 n= 0.012, Flow Area= 0.01 sf
#2	Discarded	240.50'	2.410 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 235.00'

Discarded OutFlow Max=0.0 cfs @ 12.52 hrs HW=241.55' (Free Discharge)

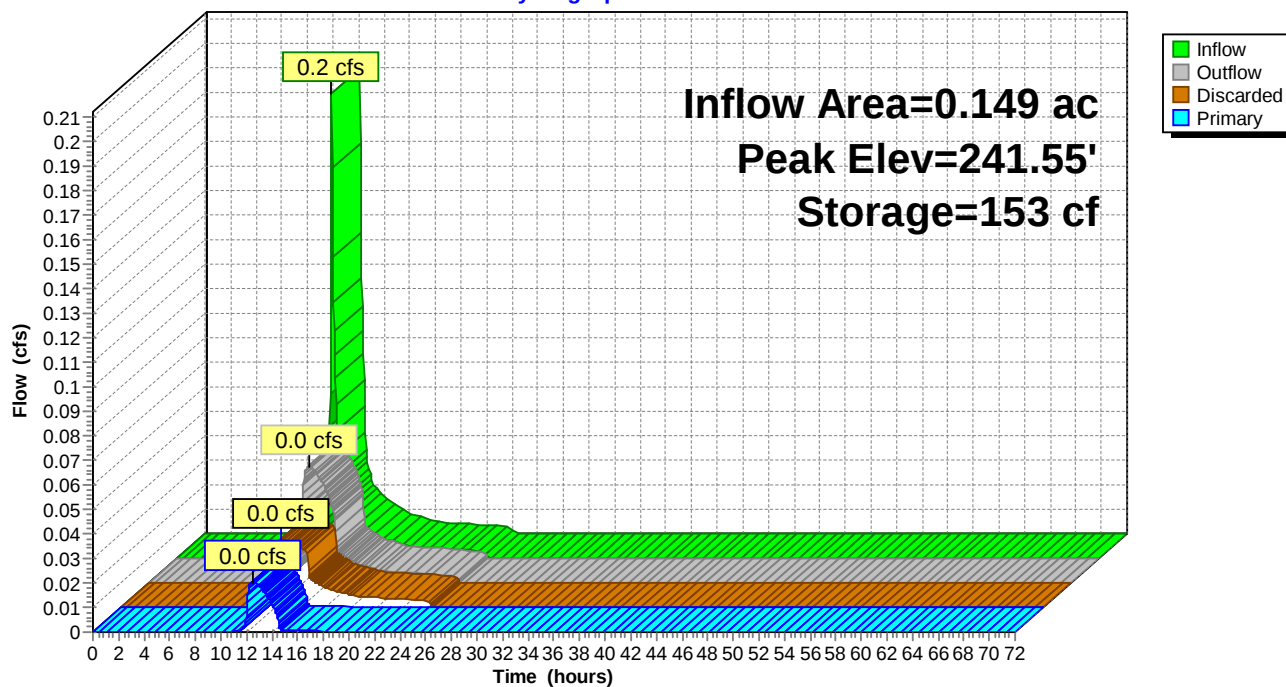
↑ **2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.52 hrs HW=241.55' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 0.0 cfs @ 3.64 fps)

Pond DS-2: DS-2

Hydrograph



Summary for Pond DS-3: DS-3

Inflow Area = 0.139 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2-YR event
 Inflow = 0.4 cfs @ 12.09 hrs, Volume = 0.033 af
 Outflow = 0.1 cfs @ 12.38 hrs, Volume = 0.033 af, Atten = 68%, Lag = 17.7 min
 Discarded = 0.0 cfs @ 12.38 hrs, Volume = 0.021 af
 Primary = 0.1 cfs @ 12.38 hrs, Volume = 0.012 af

Routing by Stor-Ind method, Time Span = 0.00-72.00 hrs, dt = 0.05 hrs

Peak Elev = 239.86' @ 12.38 hrs Surf.Area = 613 sf Storage = 302 cf

Plug-Flow detention time = 15.3 min calculated for 0.033 af (100% of inflow)

Center-of-Mass det. time = 15.3 min (772.4 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1	238.50'	1,073 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.50	613	0.0	0	0
238.83	613	30.0	61	61
239.00	613	30.0	31	92
240.50	613	40.0	368	460
241.00	613	40.0	123	582
242.00	613	40.0	245	828
243.00	613	40.0	245	1,073

Device	Routing	Invert	Outlet Devices
#1	Primary	238.50'	2.0" Round Culvert L = 50.0' CPP, projecting, no headwall, Ke = 0.900 Inlet / Outlet Invert = 238.50' / 233.50' S = 0.1000 ' S Cc = 0.900 n = 0.012, Flow Area = 0.02 sf
#2	Discarded	238.50'	2.410 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 227.00'

Discarded OutFlow Max = 0.0 cfs @ 12.38 hrs HW = 239.85' (Free Discharge)

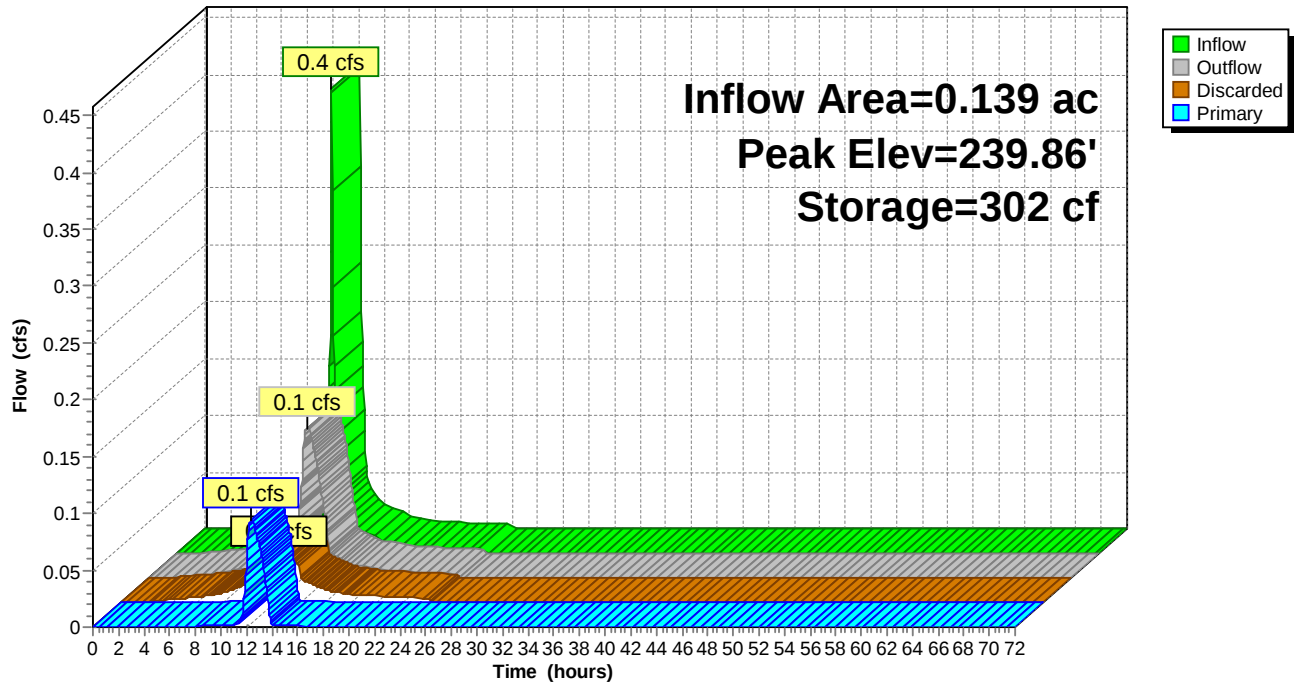
↑ **2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max = 0.1 cfs @ 12.38 hrs HW = 239.85' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 0.1 cfs @ 4.28 fps)

Pond DS-3: DS-3

Hydrograph



Summary for Pond DS-4: DS-4

Inflow Area = 0.232 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2-YR event
 Inflow = 0.7 cfs @ 12.09 hrs, Volume = 0.056 af
 Outflow = 0.4 cfs @ 12.21 hrs, Volume = 0.056 af, Atten = 42%, Lag = 7.3 min
 Discarded = 0.0 cfs @ 12.21 hrs, Volume = 0.029 af
 Primary = 0.3 cfs @ 12.21 hrs, Volume = 0.026 af

Routing by Stor-Ind method, Time Span = 0.00-72.00 hrs, dt = 0.05 hrs

Peak Elev = 239.76' @ 12.21 hrs Surf.Area = 613 sf Storage = 278 cf

Plug-Flow detention time = 6.3 min calculated for 0.056 af (100% of inflow)

Center-of-Mass det. time = 6.3 min (763.4 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1	238.50'	1,073 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.50	613	0.0	0	0
238.83	613	30.0	61	61
239.00	613	30.0	31	92
240.50	613	40.0	368	460
241.00	613	40.0	123	582
242.00	613	40.0	245	828
243.00	613	40.0	245	1,073

Device	Routing	Invert	Outlet Devices
#1	Primary	238.50'	4.0" Round Culvert L = 50.0' CPP, projecting, no headwall, Ke = 0.900 Inlet / Outlet Invert = 238.50' / 233.50' S = 0.1000 ' S Cc = 0.900 n = 0.012, Flow Area = 0.09 sf
#2	Discarded	238.50'	2.410 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 235.00'

Discarded OutFlow Max = 0.0 cfs @ 12.21 hrs HW = 239.75' (Free Discharge)

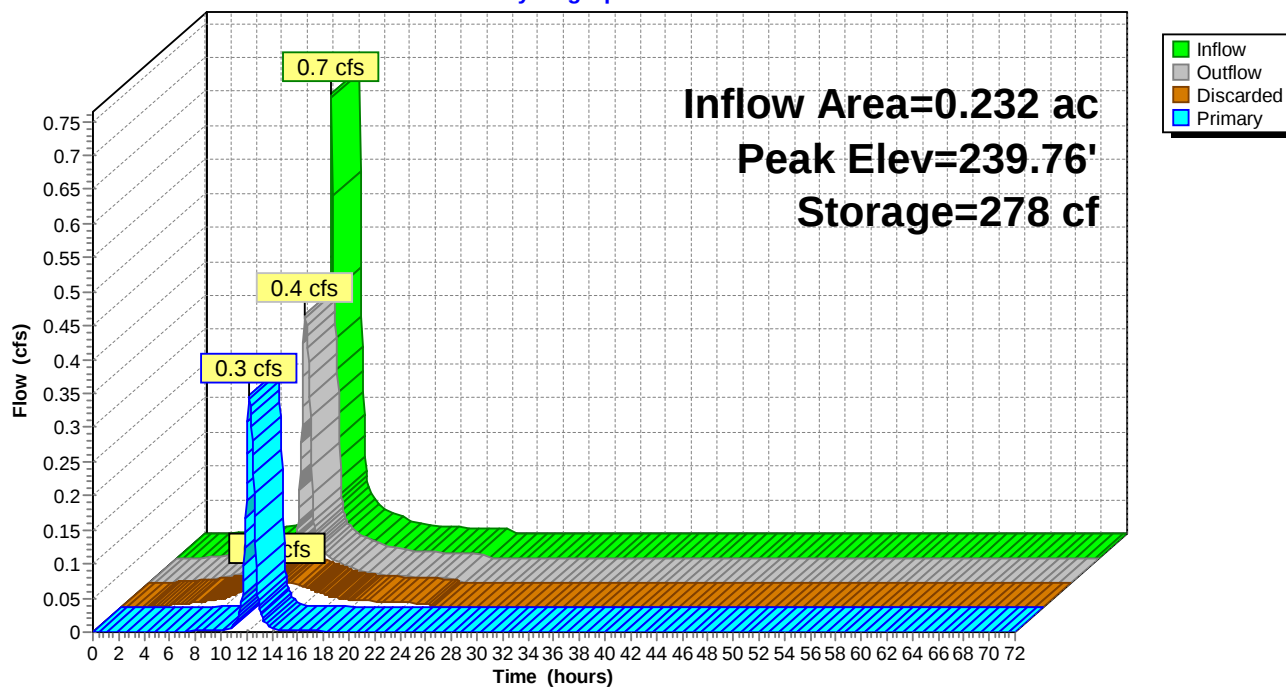
↑ **2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max = 0.3 cfs @ 12.21 hrs HW = 239.75' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 0.3 cfs @ 3.96 fps)

Pond DS-4: DS-4

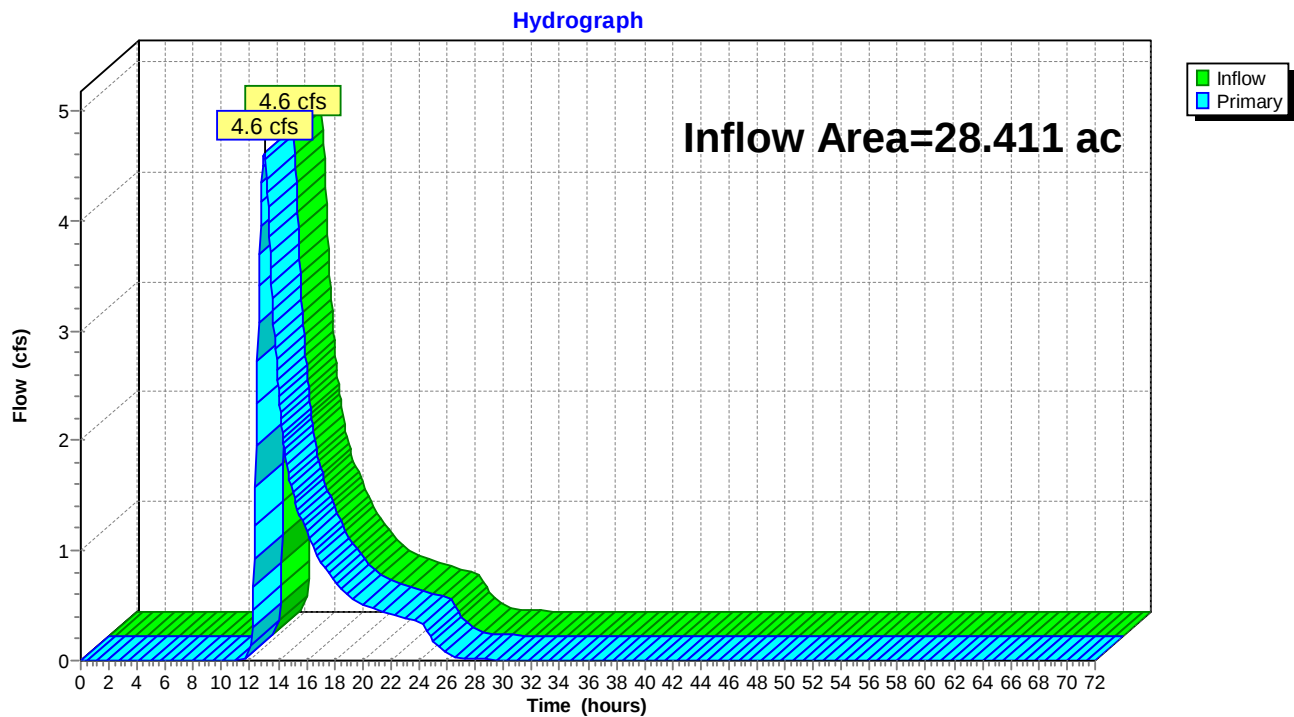
Hydrograph

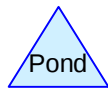
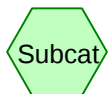
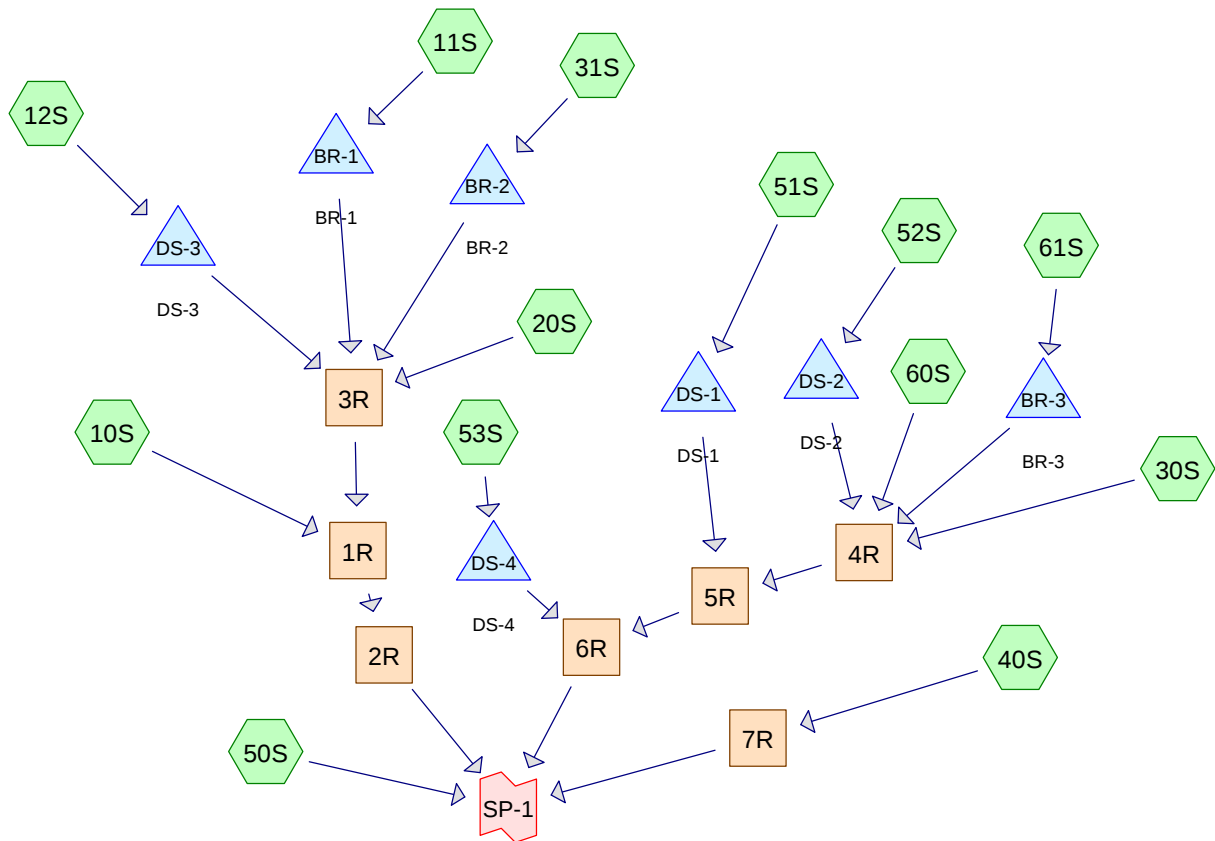


Summary for Link SP-1:

Inflow Area = 28.411 ac, 6.30% Impervious, Inflow Depth = 0.50" for 2-YR event
Inflow = 4.6 cfs @ 13.01 hrs, Volume= 1.194 af
Primary = 4.6 cfs @ 13.01 hrs, Volume= 1.194 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link SP-1:



Routing Diagram for 25-36465 POST
 Prepared by Atlantic Resource Consultants, Printed 6/7/2026
 HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 10-YR Rainfall=4.60"

Printed 6/7/2026

Page 2

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S:	Runoff Area=216,967 sf 5.22% Impervious Runoff Depth=0.54" Flow Length=905' Tc=79.3 min CN=50 Runoff=0.7 cfs 0.223 af
Subcatchment 11S:	Runoff Area=16,842 sf 0.00% Impervious Runoff Depth=2.72" Tc=6.0 min CN=82 Runoff=1.2 cfs 0.088 af
Subcatchment 12S:	Runoff Area=6,066 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=0.6 cfs 0.051 af
Subcatchment 20S:	Runoff Area=143,759 sf 10.43% Impervious Runoff Depth=0.79" Flow Length=612' Tc=34.8 min CN=55 Runoff=1.2 cfs 0.217 af
Subcatchment 30S:	Runoff Area=128,506 sf 6.46% Impervious Runoff Depth=1.26" Flow Length=612' Tc=47.4 min CN=63 Runoff=1.8 cfs 0.310 af
Subcatchment 31S:	Runoff Area=12,092 sf 0.00% Impervious Runoff Depth=1.97" Tc=6.0 min CN=73 Runoff=0.6 cfs 0.046 af
Subcatchment 40S:	Runoff Area=90,319 sf 9.67% Impervious Runoff Depth=1.89" Flow Length=699' Tc=20.7 min CN=72 Runoff=3.0 cfs 0.327 af
Subcatchment 50S:	Runoff Area=582,688 sf 0.54% Impervious Runoff Depth=1.60" Flow Length=599' Tc=55.5 min CN=68 Runoff=9.8 cfs 1.784 af
Subcatchment 51S:	Runoff Area=9,875 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=1.0 cfs 0.082 af
Subcatchment 52S:	Runoff Area=6,480 sf 64.94% Impervious Runoff Depth=2.29" Tc=6.0 min CN=77 Runoff=0.4 cfs 0.028 af
Subcatchment 53S:	Runoff Area=10,126 sf 100.00% Impervious Runoff Depth=4.36" Tc=6.0 min CN=98 Runoff=1.0 cfs 0.085 af
Subcatchment 60S:	Runoff Area=8,562 sf 0.00% Impervious Runoff Depth=0.58" Tc=6.0 min CN=51 Runoff=0.1 cfs 0.010 af
Subcatchment 61S:	Runoff Area=5,285 sf 22.59% Impervious Runoff Depth=2.21" Tc=6.0 min CN=76 Runoff=0.3 cfs 0.022 af
Reach 1R:	Avg. Flow Depth=0.16' Max Vel=0.95 fps Inflow=1.6 cfs 0.490 af n=0.080 L=162.0' S=0.0309 '/ Capacity=10.8 cfs Outflow=1.6 cfs 0.490 af
Reach 2R:	Avg. Flow Depth=0.09' Max Vel=0.55 fps Inflow=1.6 cfs 0.490 af n=0.080 L=334.0' S=0.0240 '/ Capacity=9.1 cfs Outflow=1.6 cfs 0.490 af
Reach 3R:	Avg. Flow Depth=0.33' Max Vel=6.33 fps Inflow=1.4 cfs 0.267 af 12.0" Round Pipe n=0.012 L=201.0' S=0.0250 '/ Capacity=6.1 cfs Outflow=1.4 cfs 0.267 af

25-36465 POST

Type III 24-hr 10-YR Rainfall=4.60"

Prepared by Atlantic Resource Consultants

Printed 6/7/2026

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Page 3

Reach 4R: Avg. Flow Depth=0.31' Max Vel=7.19 fps Inflow=1.9 cfs 0.339 af
18.0" Round Pipe n=0.012 L=328.0' S=0.0322 '/ Capacity=20.4 cfs Outflow=1.9 cfs 0.339 af

Reach 5R: Avg. Flow Depth=0.49' Max Vel=3.80 fps Inflow=1.9 cfs 0.355 af
18.0" Round Pipe n=0.012 L=169.0' S=0.0053 '/ Capacity=8.3 cfs Outflow=1.9 cfs 0.355 af

Reach 6R: Avg. Flow Depth=0.10' Max Vel=0.59 fps Inflow=2.1 cfs 0.401 af
n=0.080 L=614.0' S=0.0228 '/ Capacity=8.9 cfs Outflow=1.9 cfs 0.401 af

Reach 7R: Avg. Flow Depth=0.11' Max Vel=0.61 fps Inflow=3.0 cfs 0.327 af
n=0.080 L=803.0' S=0.0224 '/ Capacity=8.8 cfs Outflow=2.1 cfs 0.327 af

Pond BR-1: BR-1 Peak Elev=243.63' Storage=1,417 cf Inflow=1.2 cfs 0.088 af
Discarded=0.1 cfs 0.075 af Primary=0.0 cfs 0.013 af Outflow=0.1 cfs 0.088 af

Pond BR-2: BR-2 Peak Elev=242.92' Storage=703 cf Inflow=0.6 cfs 0.046 af
Discarded=0.0 cfs 0.030 af Primary=0.0 cfs 0.016 af Outflow=0.1 cfs 0.046 af

Pond BR-3: BR-3 Peak Elev=242.85' Storage=303 cf Inflow=0.3 cfs 0.022 af
Discarded=0.0 cfs 0.012 af Primary=0.0 cfs 0.010 af Outflow=0.1 cfs 0.022 af

Pond DS-1: DS-1 Peak Elev=242.81' Storage=1,394 cf Inflow=1.0 cfs 0.082 af
Discarded=0.1 cfs 0.066 af Primary=0.0 cfs 0.016 af Outflow=0.1 cfs 0.082 af

Pond DS-2: DS-2 Peak Elev=243.19' Storage=425 cf Inflow=0.4 cfs 0.028 af
Discarded=0.0 cfs 0.019 af Primary=0.0 cfs 0.009 af Outflow=0.1 cfs 0.028 af

Pond DS-3: DS-3 Peak Elev=240.82' Storage=539 cf Inflow=0.6 cfs 0.051 af
Discarded=0.0 cfs 0.029 af Primary=0.1 cfs 0.022 af Outflow=0.2 cfs 0.051 af

Pond DS-4: DS-4 Peak Elev=240.64' Storage=494 cf Inflow=1.0 cfs 0.085 af
Discarded=0.1 cfs 0.038 af Primary=0.5 cfs 0.046 af Outflow=0.5 cfs 0.085 af

Link SP-1: Inflow=14.6 cfs 3.002 af
Primary=14.6 cfs 3.002 af

Total Runoff Area = 28.411 ac Runoff Volume = 3.272 af Average Runoff Depth = 1.38"
93.70% Pervious = 26.620 ac 6.30% Impervious = 1.790 ac

25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=5.80"

Printed 6/7/2026

Page 4

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S:	Runoff Area=216,967 sf 5.22% Impervious Runoff Depth=1.05" Flow Length=905' Tc=79.3 min CN=50 Runoff=1.6 cfs 0.434 af
Subcatchment 11S:	Runoff Area=16,842 sf 0.00% Impervious Runoff Depth=3.80" Tc=6.0 min CN=82 Runoff=1.7 cfs 0.123 af
Subcatchment 12S:	Runoff Area=6,066 sf 100.00% Impervious Runoff Depth=5.56" Tc=6.0 min CN=98 Runoff=0.8 cfs 0.065 af
Subcatchment 20S:	Runoff Area=143,759 sf 10.43% Impervious Runoff Depth=1.40" Flow Length=612' Tc=34.8 min CN=55 Runoff=2.5 cfs 0.386 af
Subcatchment 30S:	Runoff Area=128,506 sf 6.46% Impervious Runoff Depth=2.04" Flow Length=612' Tc=47.4 min CN=63 Runoff=3.0 cfs 0.501 af
Subcatchment 31S:	Runoff Area=12,092 sf 0.00% Impervious Runoff Depth=2.92" Tc=6.0 min CN=73 Runoff=0.9 cfs 0.068 af
Subcatchment 40S:	Runoff Area=90,319 sf 9.67% Impervious Runoff Depth=2.83" Flow Length=699' Tc=20.7 min CN=72 Runoff=4.5 cfs 0.489 af
Subcatchment 50S:	Runoff Area=582,688 sf 0.54% Impervious Runoff Depth=2.47" Flow Length=599' Tc=55.5 min CN=68 Runoff=15.7 cfs 2.751 af
Subcatchment 51S:	Runoff Area=9,875 sf 100.00% Impervious Runoff Depth=5.56" Tc=6.0 min CN=98 Runoff=1.3 cfs 0.105 af
Subcatchment 52S:	Runoff Area=6,480 sf 64.94% Impervious Runoff Depth=3.31" Tc=6.0 min CN=77 Runoff=0.6 cfs 0.041 af
Subcatchment 53S:	Runoff Area=10,126 sf 100.00% Impervious Runoff Depth=5.56" Tc=6.0 min CN=98 Runoff=1.3 cfs 0.108 af
Subcatchment 60S:	Runoff Area=8,562 sf 0.00% Impervious Runoff Depth=1.12" Tc=6.0 min CN=51 Runoff=0.2 cfs 0.018 af
Subcatchment 61S:	Runoff Area=5,285 sf 22.59% Impervious Runoff Depth=3.21" Tc=6.0 min CN=76 Runoff=0.4 cfs 0.032 af
Reach 1R:	Avg. Flow Depth=0.25' Max Vel=1.24 fps Inflow=3.4 cfs 0.901 af n=0.080 L=162.0' S=0.0309 '/ Capacity=10.8 cfs Outflow=3.3 cfs 0.901 af
Reach 2R:	Avg. Flow Depth=0.14' Max Vel=0.73 fps Inflow=3.3 cfs 0.901 af n=0.080 L=334.0' S=0.0240 '/ Capacity=9.1 cfs Outflow=3.3 cfs 0.901 af
Reach 3R:	Avg. Flow Depth=0.47' Max Vel=7.55 fps Inflow=2.7 cfs 0.466 af 12.0" Round Pipe n=0.012 L=201.0' S=0.0250 '/ Capacity=6.1 cfs Outflow=2.7 cfs 0.466 af

25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 25-YR Rainfall=5.80"

Printed 6/7/2026

Page 5

Reach 4R: Avg. Flow Depth=0.40' Max Vel=8.37 fps Inflow=3.1 cfs 0.549 af
 18.0" Round Pipe n=0.012 L=328.0' S=0.0322 '/ Capacity=20.4 cfs Outflow=3.1 cfs 0.549 af

Reach 5R: Avg. Flow Depth=0.64' Max Vel=4.38 fps Inflow=3.2 cfs 0.572 af
 18.0" Round Pipe n=0.012 L=169.0' S=0.0053 '/ Capacity=8.3 cfs Outflow=3.2 cfs 0.572 af

Reach 6R: Avg. Flow Depth=0.14' Max Vel=0.72 fps Inflow=3.5 cfs 0.635 af
 n=0.080 L=614.0' S=0.0228 '/ Capacity=8.9 cfs Outflow=3.3 cfs 0.635 af

Reach 7R: Avg. Flow Depth=0.14' Max Vel=0.72 fps Inflow=4.5 cfs 0.489 af
 n=0.080 L=803.0' S=0.0224 '/ Capacity=8.8 cfs Outflow=3.4 cfs 0.489 af

Pond BR-1: BR-1 Peak Elev=244.08' Storage=2,213 cf Inflow=1.7 cfs 0.123 af
 Discarded=0.1 cfs 0.100 af Primary=0.0 cfs 0.023 af Outflow=0.1 cfs 0.123 af

Pond BR-2: BR-2 Peak Elev=243.52' Storage=1,164 cf Inflow=0.9 cfs 0.068 af
 Discarded=0.0 cfs 0.040 af Primary=0.1 cfs 0.027 af Outflow=0.1 cfs 0.068 af

Pond BR-3: BR-3 Peak Elev=243.39' Storage=500 cf Inflow=0.4 cfs 0.032 af
 Discarded=0.0 cfs 0.016 af Primary=0.0 cfs 0.016 af Outflow=0.1 cfs 0.032 af

Pond DS-1: DS-1 Peak Elev=454.56' Storage=1,457 cf Inflow=1.3 cfs 0.105 af
 Discarded=0.9 cfs 0.082 af Primary=0.1 cfs 0.023 af Outflow=1.0 cfs 0.105 af

Pond DS-2: DS-2 Peak Elev=244.78' Storage=687 cf Inflow=0.6 cfs 0.041 af
 Discarded=0.0 cfs 0.027 af Primary=0.0 cfs 0.013 af Outflow=0.1 cfs 0.041 af

Pond DS-3: DS-3 Peak Elev=241.71' Storage=756 cf Inflow=0.8 cfs 0.065 af
 Discarded=0.0 cfs 0.034 af Primary=0.1 cfs 0.030 af Outflow=0.2 cfs 0.065 af

Pond DS-4: DS-4 Peak Elev=241.43' Storage=687 cf Inflow=1.3 cfs 0.108 af
 Discarded=0.1 cfs 0.045 af Primary=0.6 cfs 0.063 af Outflow=0.6 cfs 0.108 af

Link SP-1: Inflow=24.7 cfs 4.777 af
 Primary=24.7 cfs 4.777 af

Total Runoff Area = 28.411 ac Runoff Volume = 5.121 af Average Runoff Depth = 2.16"
93.70% Pervious = 26.620 ac 6.30% Impervious = 1.790 ac

25-36465 POST

Prepared by Atlantic Resource Consultants

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 100-YR Rainfall=8.10"

Printed 6/7/2026

Page 6

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 10S:	Runoff Area=216,967 sf 5.22% Impervious Runoff Depth=2.31" Flow Length=905' Tc=79.3 min CN=50 Runoff=4.0 cfs 0.959 af
Subcatchment 11S:	Runoff Area=16,842 sf 0.00% Impervious Runoff Depth=5.95" Tc=6.0 min CN=82 Runoff=2.6 cfs 0.192 af
Subcatchment 12S:	Runoff Area=6,066 sf 100.00% Impervious Runoff Depth=7.86" Tc=6.0 min CN=98 Runoff=1.1 cfs 0.091 af
Subcatchment 20S:	Runoff Area=143,759 sf 10.43% Impervious Runoff Depth=2.85" Flow Length=612' Tc=34.8 min CN=55 Runoff=5.6 cfs 0.785 af
Subcatchment 30S:	Runoff Area=128,506 sf 6.46% Impervious Runoff Depth=3.75" Flow Length=612' Tc=47.4 min CN=63 Runoff=5.8 cfs 0.921 af
Subcatchment 31S:	Runoff Area=12,092 sf 0.00% Impervious Runoff Depth=4.90" Tc=6.0 min CN=73 Runoff=1.6 cfs 0.113 af
Subcatchment 40S:	Runoff Area=90,319 sf 9.67% Impervious Runoff Depth=4.78" Flow Length=699' Tc=20.7 min CN=72 Runoff=7.7 cfs 0.826 af
Subcatchment 50S:	Runoff Area=582,688 sf 0.54% Impervious Runoff Depth=4.32" Flow Length=599' Tc=55.5 min CN=68 Runoff=27.9 cfs 4.815 af
Subcatchment 51S:	Runoff Area=9,875 sf 100.00% Impervious Runoff Depth=7.86" Tc=6.0 min CN=98 Runoff=1.8 cfs 0.148 af
Subcatchment 52S:	Runoff Area=6,480 sf 64.94% Impervious Runoff Depth=5.37" Tc=6.0 min CN=77 Runoff=0.9 cfs 0.067 af
Subcatchment 53S:	Runoff Area=10,126 sf 100.00% Impervious Runoff Depth=7.86" Tc=6.0 min CN=98 Runoff=1.8 cfs 0.152 af
Subcatchment 60S:	Runoff Area=8,562 sf 0.00% Impervious Runoff Depth=2.42" Tc=6.0 min CN=51 Runoff=0.5 cfs 0.040 af
Subcatchment 61S:	Runoff Area=5,285 sf 22.59% Impervious Runoff Depth=5.25" Tc=6.0 min CN=76 Runoff=0.7 cfs 0.053 af
Reach 1R:	Avg. Flow Depth=0.44' Max Vel=1.74 fps Inflow=8.8 cfs 1.921 af n=0.080 L=162.0' S=0.0309 '/ Capacity=10.8 cfs Outflow=8.6 cfs 1.921 af
Reach 2R:	Avg. Flow Depth=0.24' Max Vel=1.01 fps Inflow=8.6 cfs 1.921 af n=0.080 L=334.0' S=0.0240 '/ Capacity=9.1 cfs Outflow=8.4 cfs 1.921 af
Reach 3R:	Avg. Flow Depth=1.00' Max Vel=8.86 fps Inflow=6.6 cfs 0.962 af 12.0" Round Pipe n=0.012 L=201.0' S=0.0250 '/ Capacity=6.1 cfs Outflow=6.5 cfs 0.962 af

25-36465 POST

Type III 24-hr 100-YR Rainfall=8.10"

Prepared by Atlantic Resource Consultants

Printed 6/7/2026

HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Page 7

Reach 4R: Avg. Flow Depth=0.56' Max Vel=10.03 fps Inflow=6.0 cfs 1.014 af
 18.0" Round Pipe n=0.012 L=328.0' S=0.0322 '/ Capacity=20.4 cfs Outflow=6.0 cfs 1.014 af

Reach 5R: Avg. Flow Depth=0.95' Max Vel=5.12 fps Inflow=6.0 cfs 1.043 af
 18.0" Round Pipe n=0.012 L=169.0' S=0.0053 '/ Capacity=8.3 cfs Outflow=6.0 cfs 1.043 af

Reach 6R: Avg. Flow Depth=0.20' Max Vel=0.90 fps Inflow=6.6 cfs 1.141 af
 n=0.080 L=614.0' S=0.0228 '/ Capacity=8.9 cfs Outflow=6.3 cfs 1.141 af

Reach 7R: Avg. Flow Depth=0.20' Max Vel=0.89 fps Inflow=7.7 cfs 0.826 af
 n=0.080 L=803.0' S=0.0224 '/ Capacity=8.8 cfs Outflow=6.2 cfs 0.826 af

Pond BR-1: BR-1 Peak Elev=244.63' Storage=3,346 cf Inflow=2.6 cfs 0.192 af
 Discarded=0.1 cfs 0.137 af Primary=0.5 cfs 0.055 af Outflow=0.6 cfs 0.192 af

Pond BR-2: BR-2 Peak Elev=243.70' Storage=1,321 cf Inflow=1.6 cfs 0.113 af
 Discarded=0.0 cfs 0.050 af Primary=1.0 cfs 0.063 af Outflow=1.0 cfs 0.113 af

Pond BR-3: BR-3 Peak Elev=243.62' Storage=598 cf Inflow=0.7 cfs 0.053 af
 Discarded=0.0 cfs 0.021 af Primary=0.5 cfs 0.032 af Outflow=0.5 cfs 0.053 af

Pond DS-1: DS-1 Peak Elev=964.40' Storage=1,457 cf Inflow=1.8 cfs 0.148 af
 Discarded=3.0 cfs 0.119 af Primary=0.2 cfs 0.029 af Outflow=3.2 cfs 0.148 af

Pond DS-2: DS-2 Peak Elev=438.11' Storage=723 cf Inflow=0.9 cfs 0.067 af
 Discarded=0.9 cfs 0.046 af Primary=0.1 cfs 0.021 af Outflow=1.0 cfs 0.067 af

Pond DS-3: DS-3 Peak Elev=282.30' Storage=1,073 cf Inflow=1.1 cfs 0.091 af
 Discarded=0.2 cfs 0.032 af Primary=0.3 cfs 0.059 af Outflow=0.5 cfs 0.091 af

Pond DS-4: DS-4 Peak Elev=245.37' Storage=1,073 cf Inflow=1.8 cfs 0.152 af
 Discarded=0.1 cfs 0.055 af Primary=0.9 cfs 0.098 af Outflow=1.0 cfs 0.152 af

Link SP-1: Inflow=47.4 cfs 8.703 af
 Primary=47.4 cfs 8.703 af

Total Runoff Area = 28.411 ac Runoff Volume = 9.163 af Average Runoff Depth = 3.87"
93.70% Pervious = 26.620 ac 6.30% Impervious = 1.790 ac

ATTACHMENT C - STORMWATER MAINTENANCE MANUAL

RIDING TO THE TOP

STORMWATER MAINTENANCE PLAN

Maintenance Responsibilities

During construction activities, the maintenance of all stormwater measures will be the direct responsibility of the Contractor. After acceptance by the Owner, the inspection and maintenance of all stormwater management facilities, the establishment of any contract services required to implement the program, and the keeping of records and maintenance log book will be the responsibility of Riding to the Top. The current contact for operational matters at Riding to the Top is:

Sarah Bronson, Executive Director
Riding to the Top
14 Lilac Drive
Windham, ME 04062
Tel: 207.892.2813
Email: sbronson@ridingtothetop.org

Notwithstanding any other schedule noted below, general inspections should be conducted monthly during wet weather conditions from March to November. All post-construction inspections shall be undertaken by a person with “knowledge of erosion and stormwater control, including the standards and conditions of the permit”. Post construction inspection and maintenance documents shall be retained for at least five years. A “wet weather event” that will trigger a post-construction inspection is one that produces 0.5 inches or more of rainfall in a 24-hour period.

Ditches, Swales, and Riprap Aprons

Open swales and ditches shall be inspected on a monthly basis or after a major rainfall event to assure that debris and/or sediments do not reduce the effectiveness of the system. Debris shall be removed at that time. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth of vegetation for the stability of the structure and proper function. Maintenance shall include, but not be limited to, mowing, trimming and removal vegetation in the ditches as required to prevent vegetation from blocking or diverting storm flows, replacement of riprap channel lining to prevent scour of the channel invert, removing vegetation and debris from the culverts.

Vegetated ditches should be mowed at least three times during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any areas where the vegetation fails will be subject to erosion and should be reseeded and mulched immediately.

Riprap ditches and aprons where stone is displaced should be replaced and chinked to assure stability. With time, additional riprap may be added. Vegetation growing through riprap and accumulated sediments and debris should be removed on a bi-annual basis.

Drainage Pipes and Culverts

Culverts and piped drainage systems shall be inspected on an annual basis to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the pipe inlet and outlet. Sediment should be removed when its level exceeds 20% of the pipe diameter. This may be accomplished by hydraulic flushing or any mechanical means; however, care should be taken to contain the sediment at the pipe outlet, and not flush the sediments into the detention/infiltration pond areas as this will reduce the ponds capacity and ability to infiltrate runoff, and will hasten the time when the pond must be cleaned/rehabilitated.

Driveways, Walkways and Parking Lots

Accumulations of winter sand along paved surfaces shall be cleared at least once a year, preferably in the spring, to minimize transportation of sediment during rainfall events. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. Grading of gravel roads, or grading of the gravel shoulders of gravel or paved roads, must be routinely performed to ensure that stormwater drains immediately off the road surface to adjacent buffer areas or stable ditches, and is not impeded by accumulations of graded material on the road shoulder or by excavation of false ditches in the shoulder.

Bioretention Cells

Inspections of the bioretention cells and underdrained filters shall be conducted on a semi-annual basis and following significant rainfall events. Delayed or poor maintenance practices can result in loss of treatment capacity. Records should be kept of all maintenance operations to help plan future work and identify problem areas.

The basin embankments should be maintained to preserve their integrity including, but not limited to, vegetation maintenance (mowing, control of woody vegetation), rodent control, erosion control and repair, and outlet control structure maintenance and repair. The embankment should be inspected annually for erosion or destabilization of side slopes, embankment settling and other signs of overtrop structural failure.

Basin plantings, and vegetation should be maintained on a quarterly basis. Regular maintenance activities should include cutting back shrub plantings where necessary to prevent excessive woody growth, removal of dead vegetation and re-planting to maintain good cover and root spread. Shrub or grass clippings should be removed to minimize the amount of organic material accumulation in the basin.

Sediment and debris should be removed from the sediment forebay at least annually, where applicable.

Bioretention cells and underdrained filters shall not be used for snow storage area. Snow storage should be sited so that snow melt flows to a pretreatment BMP before reaching the infiltration area.

Vehicular equipment used to maintain or rehabilitate the basins should work from the cell perimeter and not enter the basin floor area, as this would compact the soil surface and reduce infiltration.

The surface of the basins may clog with fine sediments over time. Maintenance of good plant or grass cover should minimize this; however, if ponded runoff does not infiltrate within 48 hours, rototilling the top of the soil bed may be required to reestablish the soils infiltration capacity.

Filtering Drip Strips

Inspections of the filtering drip strips shall be undertaken on a quarterly basis and following significant rainfall events. The surface stone should be inspected for evidence of displacement, or erosion. Any accumulated debris, leaves, or loose vegetative matter should be removed from the surface to prevent clogging of the void space. The areas adjacent to the filtering drip strips should be inspected for erosion or bare soil that could migrate into the stone or filter media. Evidence of standing water, or poorly draining media should be noted as this may indicate the need for replacement of the materials.

Maine DEP Five-Year Recertification

The Maine DEP Chapter 500 Recertification requirement will apply to this project. This requires all inspection, and maintenance tasks to be completed and the five-year recertification form to be completed, certified and submitted to Maine DEP. For full details of the requirements see: <https://www.maine.gov/dep/land/stormwater/stormwaterbmps/five-year-recertification.html>.

Stormwater Inspection and Maintenance Log

Site Name	Riding to the Top	Location	Windham	Date of Inspection		Maintenance Required	Maintenance Complete
BMP	Inspection tasks	Completed	Notes				
Ditches, swales and open channels	Inspect for debris and channel blockages Check vegetation for overgrowth Inspect for evidence of erosion						
Catch Basins	Check sediment level in sumps Inspect grates, frames and structures						
Pipe Inlet and Outlet	Inspect riprap aprons Look for evidence of erosion						
Bioretention Underdrained Filter	Check plantings/grass cover Inspect soil bed Inspect underdrain outlets Evidence of high water level Verify structure is draining Inspect inlet grate and outlet structure Look for evidence of sedimentation Check stability of side slopes						
Filtering Drip Strips	Inspect surface for displacement/erosion Check for poor drainage Check for debris/ soil ingress						
Paved areas, walkways	Check for sand and salt accumulation Check integrity of surfaces and edges						
Culverts	Inspect structural integrity Look for joint displacement Inspect inlet and outlet structures Check for sediment accumulation						