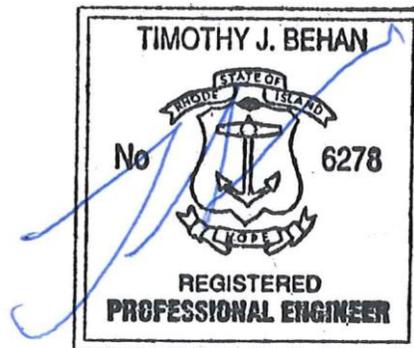


STORMWATER SITE PLANNING, ANALYSIS AND DESIGN REPORT

FOR
**PROPOSED STORAGE BUILDING
AIRPORT ROAD
COVENTRY, RI**

PREPARED FOR:

*BAIRD PROPERTIES, LLC
75 AIRPORT ROAD, UNIT 3
COVENTRY, RHODE ISLAND 02816*



PREPARED BY:



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MAY 2025

CEC PROJECT NO. 25023.00

Revised December 2025

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- 1. STORMWATER MANAGEMENT PLAN CHECKLIST AND LID PLANNING REPORT-
STORMWATER DESIGN SUMMARY
- 2. STORMWATER SYSTEM LONG-TERM OPERATION AND MAINTENANCE (O&M) PLAN
- 3. SOIL EROSION AND SEDIMENT CONTROL (SESC) PLAN

INTRODUCTION

On behalf of Baird Properties, LLC., Commonwealth Engineers & Consultants, Inc. (CEC) has prepared the following Rhode Island Department of Environmental Management (RIDEM) Stormwater Site Planning, Analysis and Design Report for the site redevelopment on Airport Road in Coventry, Rhode Island. This report has been prepared in accordance with the requirements of and guidance provided in the following:

- RIDEM Rules & Regulations for Governing the Administration and Enforcement of the Fresh Water Wetlands Act, issued 07/01/2022 (hereinafter referred to as the “FWW Regulations”)
- Rhode Island Stormwater Design and Installation Standards Manual, issued March 2015 (hereinafter referred to as the “RISDISM”),
- RIPDES Construction General Permit, issued 09/25/2020,
- RISDISM Stormwater Management Checklist (hereinafter referred to as the “Checklist”)

I-A - General Project Narrative

The following are a general description of the existing conditions on and near the subject parcel, and a detailed description of the proposed development within a portion of same.

General Description of Project: The applicant proposes to redevelop A.P. 43, Lots 33 and 34 into a contractors’ garage/storage site, with one 5,000 square foot building. The site development will also include paved driveways and parking areas to serve the anticipated use of the site by large vehicles and/or towed trailer vehicles. The project will include new electric and telecommunications from Airport Road, as well as on-site stormwater management features. The development will be designed to comply fully with all applicable zoning and land development requirements.

Existing Property: Identified as 0 Airport Road, A.P. 43, Lots 33 and 34 occupy approximately 10.9± acres of land located in an I-1 industrial zoning district. The lot has existing frontage on Airport Road.

The parcels immediately abutting the lot vary in zoning districts with an R-20 Residential district to the west, a Planned Development district to the south and east and Industrial I-1 to the north. The parcel is primarily wooded, although evidence of former fill placement was located during test hole excavations. A small portion of the property has been cleared for development, refer to existing conditions plan for greater detail.

Natural Resources in the Area: There are freshwater wetlands located at near the center of the parcel, occupying approximately 5.7± acres of the property. The wetlands were flagged by Avizinis Environmental Services, Inc., (Avizinis) in March of 2025. Avizinis has established one wetland flag series on the property. Flagging labeled A1 – A44 delineates the closest limit of a swamp that covers the center of the property and extends well offsite to the north. This wetland is associated with the south branch of the Pawtuxet River to the north. These wetland features were flagged and surveyed, and they and their associated jurisdictional wetlands are depicted on the plans.

The subject property is not situated in a sole source aquifer. The subject property is situated in a , natural heritage area (Area #99), a groundwater recharge area and a groundwater reservoir area as depicted on Rhode Island Department of Environmental Management (RIDEM) Geographical Information System.

Flood Zones: The area of proposed development subject property is situated in “Zone X – Areas of Minimal Flood Hazard” as identified by the Federal Emergency Management Agency map #440003C0104H, effective date October 2, 2015. Portions of the site, primarily located within the wetlands, contain an AE Flood Zone with a flood elevation of 238.6-feet. No work is proposed in the wetlands or the AE Flood Zone.

Topography: The project site slopes in from the east and the west toward the wetlands in the center of the property. The area of proposed development is relatively flat, sloping from the east toward the west, from a localized high point of elevation 251.00, located in Airport Road (NAVD 88), to the lowest elevation on the parcel of 234.00 (NAVD 88) located in the north end of the wetlands. The existing topographic contours are depicted on the plans.

Drainage Divides and Soils: The RIDEM GIS map web site indicates the project site is situated in the Pawtuxet River South Branch drainage basin. The site is underlain by a combination of Merrimac Fine Sandy Loam of varying slopes, Ninigret Fine Sandy Loam and in the wetland areas, Swansea Muck.

On-site soil explorations to support the design of the on-site stormwater management system were performed by the owner and observed by a Commonwealth Engineers and Consultants engineer on May 2, 2025. The Test hole Logs are included in Appendix C.

Stormwater Management System: Management of stormwater runoff from the proposed development has been designed in accordance with the Rhode Island “Stormwater Management Design and Installation Rules” (RISMDIR), latest revision, and supplemented with the Town’s requirements. Generally, stormwater management and treatment are provided in the area east of the 75’ Wetland Buffer associated with the on-site wetland. The stormwater management and treatment systems consist of a water quality infiltration pond with 2- sediment forebays, a smaller infiltration pond and sediment forebay on the south end of the site and two area of underground infiltration chambers. The locations and details of the specific elements of the stormwater management systems are contained in the attached plans.

Wastewater Disposal System: The proposed building is for storage and will not have a restroom or water service.

Potable Water Source: The proposed buildings will not have a water service.

Use of Pesticides, Herbicides & Fertilizers: It is not anticipated that pesticides or herbicides will be proposed for use as part of this construction project. Fertilizers will be used at conventional rates in the new landscape areas.

Erosion Control Practices: A detailed soil erosion and sedimentation control (SESC) plan sheet has been prepared in conformance with RI Stormwater Handbook requirements, and a written SESC plan has been prepared in accordance with the RISMDIR.

I-B – Proposed Stormwater Collection and Treatment system

Stormwater System Design:

The stormwater collection and treatment systems were designed to meet the criteria set forth by RIDEM. The system features the following:

- The minimum standards for Groundwater Recharge, Water Quality Volume, Conveyance and Natural Channel Protection, Overbank Flood Protection, Construction Erosion and Sedimentation Control and Stormwater Management System Operation and Maintenance have been met as well as the additional standards listed in Chapter 3.
- The proposed design includes infiltration ponds and infiltration chambers. The pond bottoms and infiltration systems are located more than 4-feet above the estimated seasonal high groundwater. Detailed elevations for the infiltration ponds and chambers systems are provided on Sheets 9 and 10 of the construction plans.
- The proposed building will not have a basement and will be constructed on a slab on grade.
- The dimensions of the infiltration pond bottoms (and infiltration calculations) do not include the sediment forebay areas.
- The impervious areas of the developed site will drain to the water quality pond as well as an area of Airport Road, as shown on the Watershed Maps. The southern portion of Airport Road, adjacent to the site, will drain to the south infiltration pond. The water quality pond will discharge to underground infiltration chambers located to the north of the north driveway and south of the south driveway. An emergency overflow has been attached to the southern infiltration chambers as a precaution. The 100 Year HYDROCAD modeling shows no discharge from the chambers systems.
- The attached HydroCAD analysis reports (Appendix A) show that the proposed condition discharge rates and volumes are less than or equal to the existing condition discharge rates and volumes, see summary table below

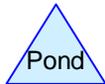
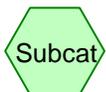
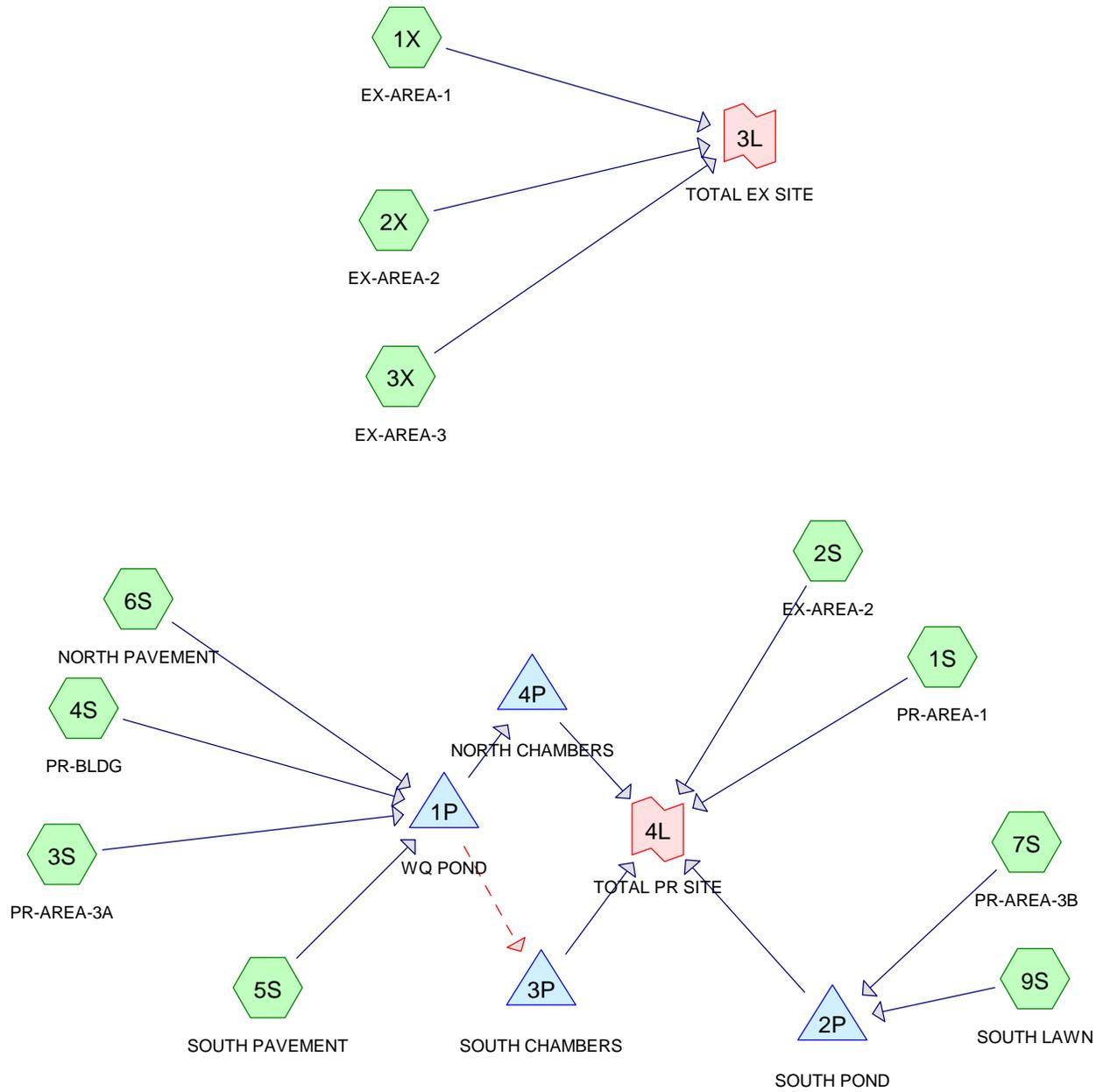
PRE-POST STORMWATER SUMMARY TABLE								
	WQ PEAK DISCHARGE	WQ PEAK VOLUME	1-YEAR PEAK DISCHARGE	1-YEAR PEAK VOLUME	10-YEAR PEAK DISCHARGE	10-YEAR PEAK VOLUME	100-YEAR PEAK DISCHARGE	100-YEAR PEAK VOLUME
	(CFS)	(ACRE-FEET)	(CFS)	(ACRE-FEET)	(CFS)	(ACRE-FEET)	(CFS)	(ACRE-FEET)
PRE-DEVELOPMENT CONDITIONS	0.25	0.041	2.26	0.34	8.96	1.211	27.71	3.627
POST-DEVELOPMENT CONDITIONS	0.03	0.018	2.23	0.331	8.59	1.161	27.57	3.462
REDUCTION	0.22	0.023	0.03	0.009	0.37	0.050	0.14	0.165

Conclusion

The stormwater collection and treatment system meet the intent of the design criteria set forth by RIDEM. The system will protect the natural resources in the area by providing pollution protection and reduced peak flow rates and volumes.

APPENDIX A-1

HYDROCAD PRINTOUTS 1, 10, AND 100-YEAR STORMS
EXISTING & PROPOSED CONDITIONS



Routing Diagram for 25023.00-AIRPORT ROAD-12-01-2025
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Project Notes

Rainfall events imported from "RED BROOK EXISTING-12-15-20.hcp"

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.248	39	>75% Grass cover, Good, HSG A (1S, 3S, 3X, 4S, 7S, 9S)
0.049	80	>75% Grass cover, Good, HSG D (1S)
0.644	98	Paved parking, HSG A (3S, 3X, 5S, 6S, 7S)
0.115	98	Roofs, HSG A (4S)
0.073	98	Unconnected pavement, HSG A (3S, 3X, 7S)
6.799	30	Woods, Good, HSG A (1S, 1X, 2S, 2X)
4.684	70	Woods, Good, HSG C (2S, 2X)
9.092	77	Woods, Good, HSG D (1S, 1X, 2S, 2X)
23.704	59	TOTAL AREA

25023.00-AIRPORT ROAD-12-01-2025

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
9.879	HSG A	1S, 1X, 2S, 2X, 3S, 3X, 4S, 5S, 6S, 7S, 9S
0.000	HSG B	
4.684	HSG C	2S, 2X
9.141	HSG D	1S, 1X, 2S, 2X
0.000	Other	
23.704		TOTAL AREA

25023.00-AIRPORT ROAD-12-01-2025Prepared by Commonwealth Engineering and Consultants, Inc.
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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.248	0.000	0.000	0.049	0.000	2.296	>75% Grass cover, Good	1S, 3S, 3X, 4S, 7S, 9S
0.644	0.000	0.000	0.000	0.000	0.644	Paved parking	3S, 3X, 5S, 6S, 7S
0.115	0.000	0.000	0.000	0.000	0.115	Roofs	4S
0.073	0.000	0.000	0.000	0.000	0.073	Unconnected pavement	3S, 3X, 7S
6.799	0.000	4.684	9.092	0.000	20.575	Woods, Good	1S, 1X, 2S, 2X
9.879	0.000	4.684	9.141	0.000	23.704	TOTAL AREA	

Time span=0.00-32.00 hrs, dt=0.03 hrs, 1068 points x 3
 Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR-AREA-1	Runoff Area=154,871 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=634' Tc=21.1 min CN=41/0 Runoff=0.00 cfs 0.000 af
Subcatchment 1X: EX-AREA-1	Runoff Area=183,986 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=993' Tc=22.4 min CN=38/0 Runoff=0.00 cfs 0.000 af
Subcatchment 2S: EX-AREA-2	Runoff Area=290,921 sf 0.00% Impervious Runoff Depth=0.03" Tc=30.0 min CN=71/0 Runoff=0.03 cfs 0.018 af
Subcatchment 2X: EX-AREA-2	Runoff Area=290,921 sf 0.00% Impervious Runoff Depth=0.03" Tc=30.0 min CN=71/0 Runoff=0.03 cfs 0.018 af
Subcatchment 3S: PR-AREA-3A	Runoff Area=21,423 sf 25.94% Impervious Runoff Depth=0.26" Flow Length=140' Tc=11.9 min CN=39/98 Runoff=0.12 cfs 0.010 af
Subcatchment 3X: EX-AREA-3	Runoff Area=41,357 sf 28.63% Impervious Runoff Depth=0.28" Flow Length=140' Tc=11.9 min CN=39/98 Runoff=0.25 cfs 0.022 af
Subcatchment 4S: PR-BLDG	Runoff Area=12,191 sf 41.01% Impervious Runoff Depth=0.40" Tc=5.0 min CN=39/98 Runoff=0.13 cfs 0.009 af
Subcatchment 5S: SOUTH PAVEMENT	Runoff Area=3,839 sf 100.00% Impervious Runoff Depth=0.99" Tc=5.0 min CN=0/98 Runoff=0.10 cfs 0.007 af
Subcatchment 6S: NORTH PAVEMENT	Runoff Area=3,710 sf 100.00% Impervious Runoff Depth=0.99" Tc=5.0 min CN=0/98 Runoff=0.10 cfs 0.007 af
Subcatchment 7S: PR-AREA-3B	Runoff Area=19,934 sf 31.52% Impervious Runoff Depth=0.31" Flow Length=100' Tc=13.0 min CN=39/98 Runoff=0.13 cfs 0.012 af
Subcatchment 9S: SOUTH LAWN	Runoff Area=9,375 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=158' Tc=9.1 min CN=39/0 Runoff=0.00 cfs 0.000 af
Pond 1P: WQ POND	Peak Elev=246.33' Storage=421 cf Inflow=0.41 cfs 0.034 af Discarded=0.08 cfs 0.034 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.034 af
Pond 2P: SOUTH POND	Peak Elev=245.44' Storage=161 cf Inflow=0.13 cfs 0.012 af Discarded=0.03 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.012 af
Pond 3P: SOUTH CHAMBERS	Peak Elev=245.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond 4P: NORTH CHAMBERS	Peak Elev=245.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Link 3L: TOTAL EX SITE	Inflow=0.25 cfs 0.041 af Primary=0.25 cfs 0.041 af

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Type III 24-hr WQv Rainfall=1.20"

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Link 4L: TOTAL PR SITE

Inflow=0.03 cfs 0.018 af

Primary=0.03 cfs 0.018 af

Total Runoff Area = 23.704 ac Runoff Volume = 0.105 af Average Runoff Depth = 0.05"
96.49% Pervious = 22.872 ac 3.51% Impervious = 0.832 ac

Summary for Subcatchment 1S: PR-AREA-1

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

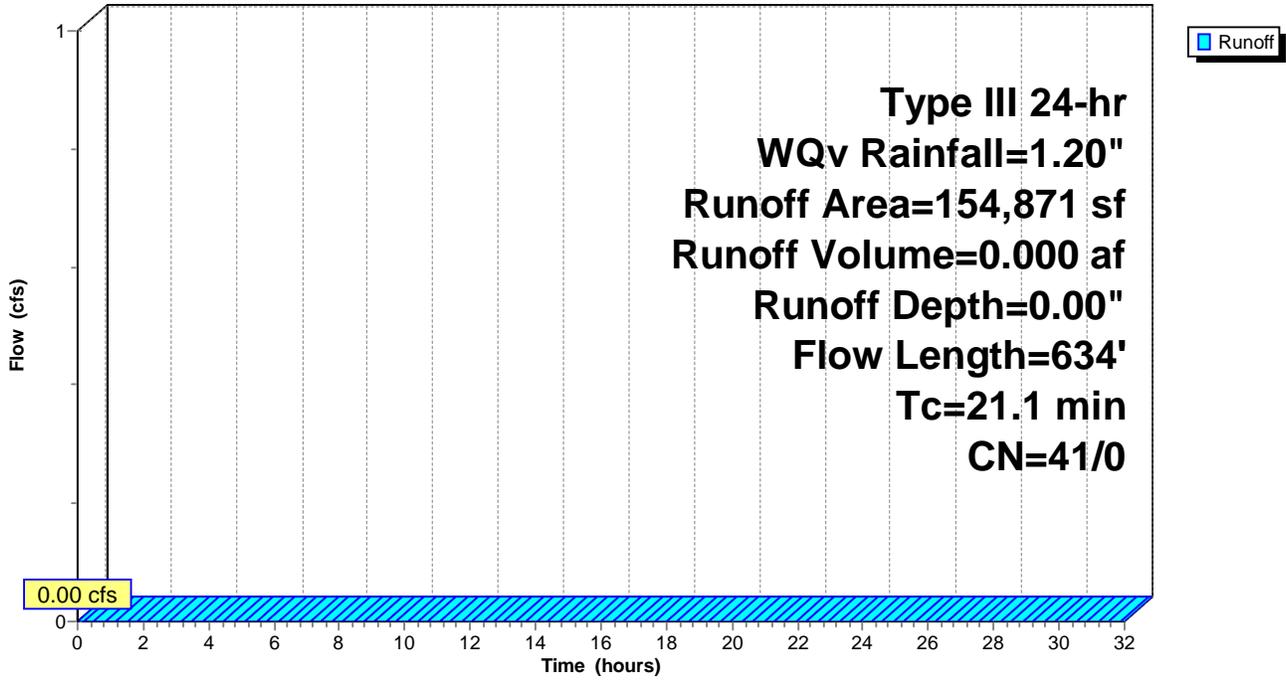
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
99,694	30	Woods, Good, HSG A
30,746	77	Woods, Good, HSG D
22,307	39	>75% Grass cover, Good, HSG A
2,124	80	>75% Grass cover, Good, HSG D
154,871	41	Weighted Average
154,871	41	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	80	0.0240	0.08		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
1.7	18	0.3300	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
0.1	21	0.3300	2.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.9	515	0.0040	3.00	30.04	Channel Flow, Area= 10.0 sf Perim= 14.0' r= 0.71' n= 0.025 Earth, clean & winding
21.1	634	Total			

Subcatchment 1S: PR-AREA-1

Hydrograph



Summary for Subcatchment 1X: EX-AREA-1

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

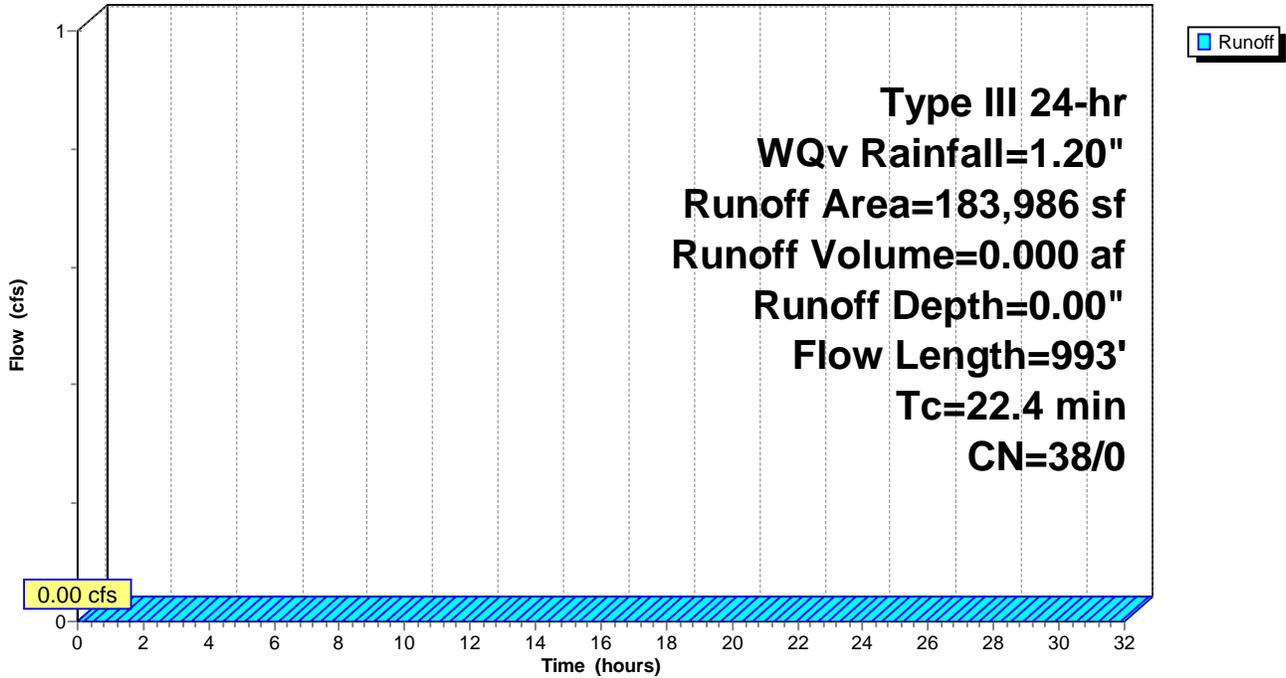
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
63,300	30	Woods, Good, HSG A
32,870	77	Woods, Good, HSG D
87,816	30	Woods, Good, HSG A
183,986	38	Weighted Average
183,986	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	20	0.0050	0.05		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.6	20	0.0050	0.58		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
9.7	60	0.0500	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
1.5	123	0.0700	1.32		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.8	770	0.0050	3.36	33.58	Channel Flow, Area= 10.0 sf Perim= 14.0' r= 0.71' n= 0.025 Earth, clean & winding
22.4	993	Total			

Subcatchment 1X: EX-AREA-1

Hydrograph



Summary for Subcatchment 2S: EX-AREA-2

Runoff = 0.03 cfs @ 14.91 hrs, Volume= 0.018 af, Depth= 0.03"

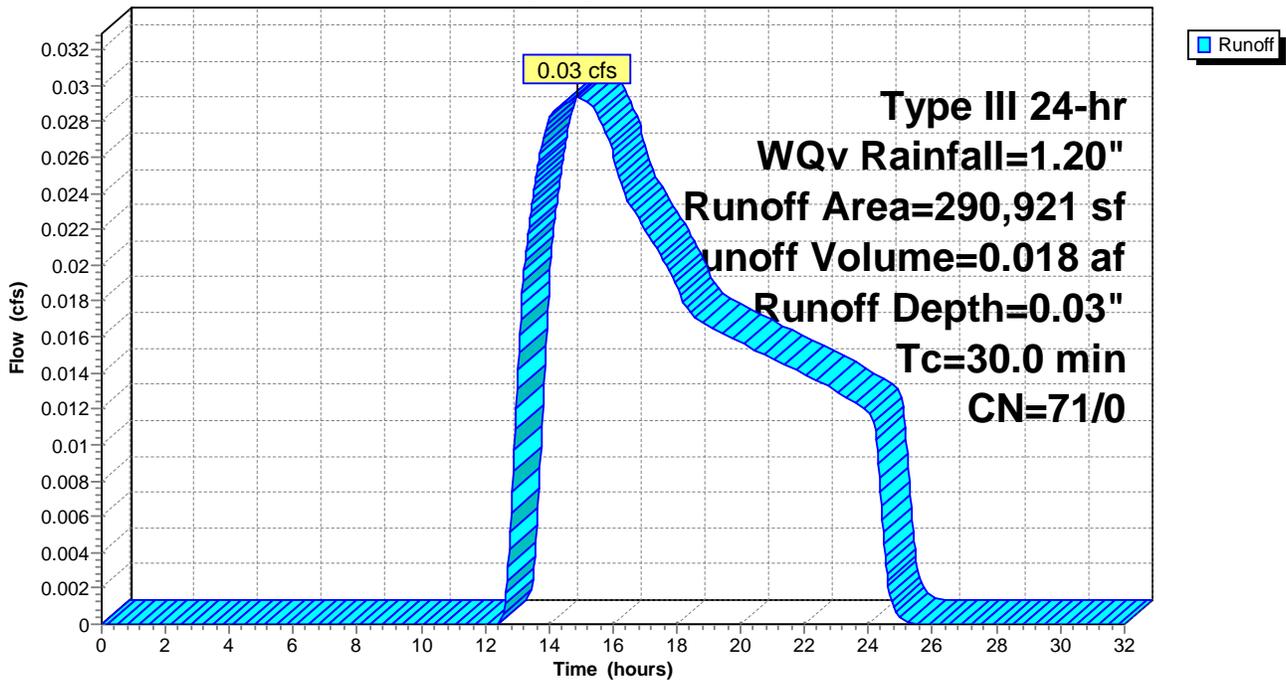
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
166,225	77	Woods, Good, HSG D
102,013	70	Woods, Good, HSG C
22,683	30	Woods, Good, HSG A
290,921	71	Weighted Average
290,921	71	100.00% Pervious Area

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

Subcatchment 2S: EX-AREA-2

Hydrograph



Summary for Subcatchment 2X: EX-AREA-2

Runoff = 0.03 cfs @ 14.91 hrs, Volume= 0.018 af, Depth= 0.03"

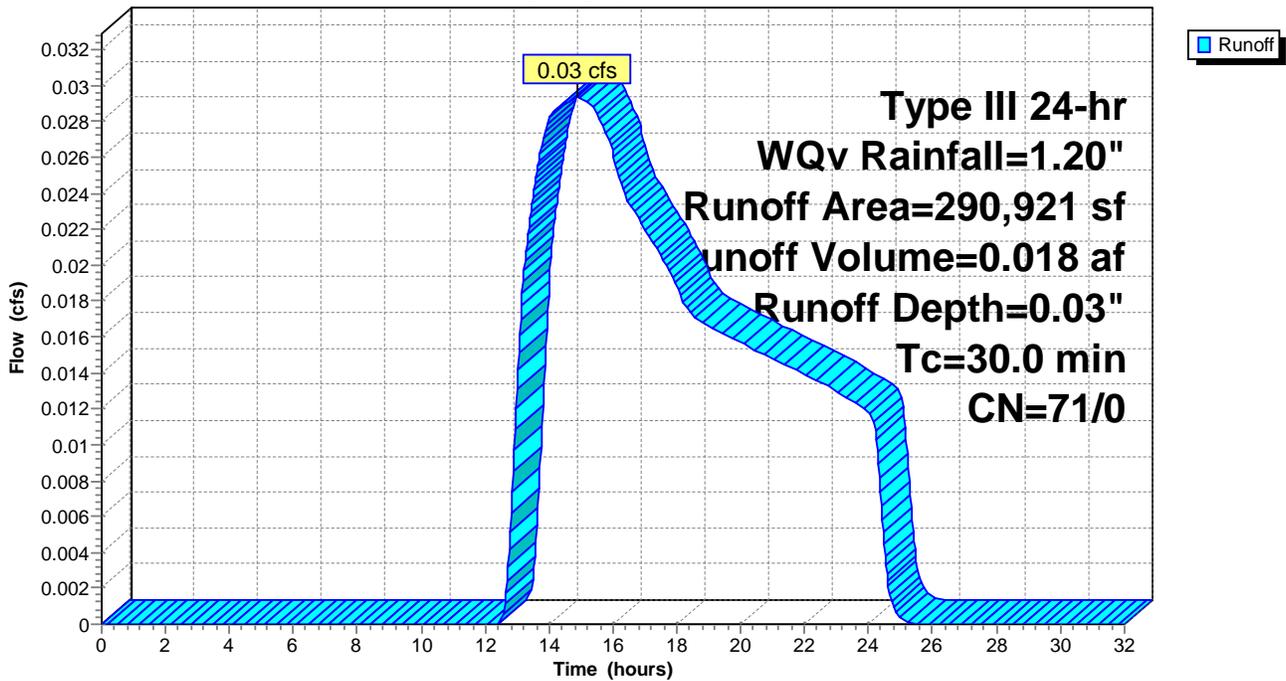
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
166,225	77	Woods, Good, HSG D
102,013	70	Woods, Good, HSG C
22,683	30	Woods, Good, HSG A
290,921	71	Weighted Average
290,921	71	100.00% Pervious Area

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

Subcatchment 2X: EX-AREA-2

Hydrograph



Summary for Subcatchment 3S: PR-AREA-3A

Runoff = 0.12 cfs @ 12.16 hrs, Volume= 0.010 af, Depth= 0.26"

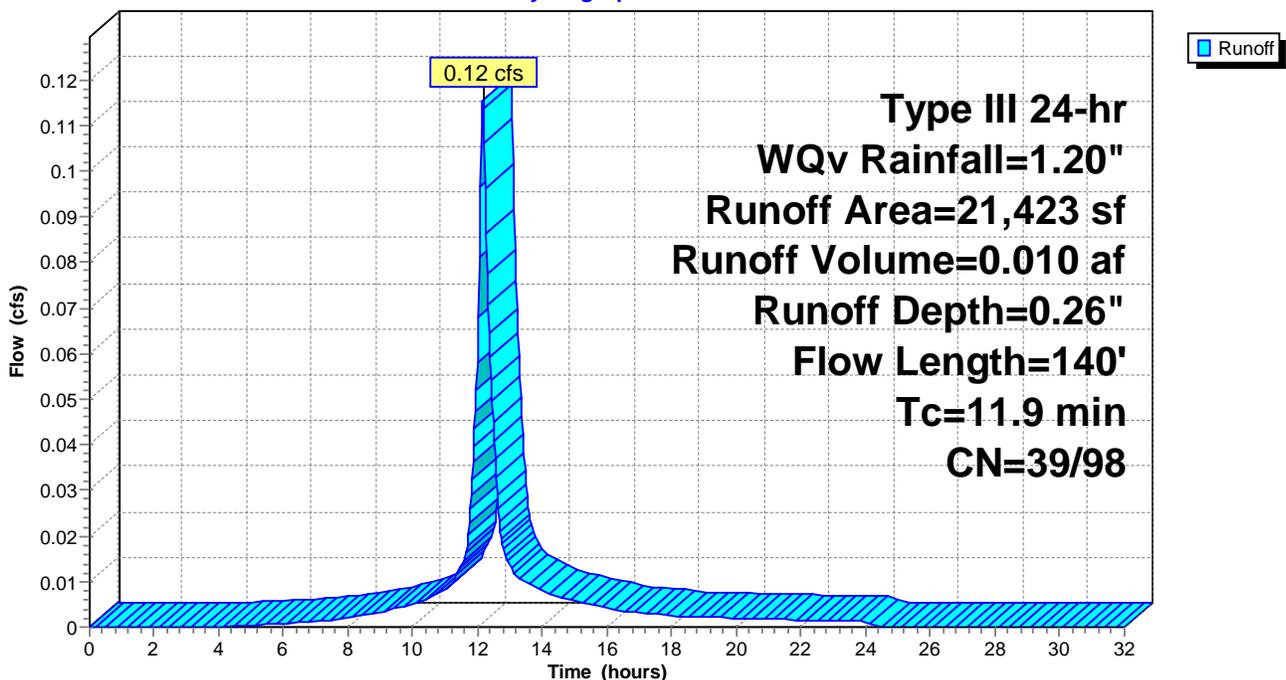
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
4,752	98	Paved parking, HSG A
806	98	Unconnected pavement, HSG A
15,865	39	>75% Grass cover, Good, HSG A
21,423	54	Weighted Average
15,865	39	74.06% Pervious Area
5,558	98	25.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	76	0.0200	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	24	0.0200	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	140	Total			

Subcatchment 3S: PR-AREA-3A

Hydrograph



Summary for Subcatchment 3X: EX-AREA-3

Runoff = 0.25 cfs @ 12.16 hrs, Volume= 0.022 af, Depth= 0.28"

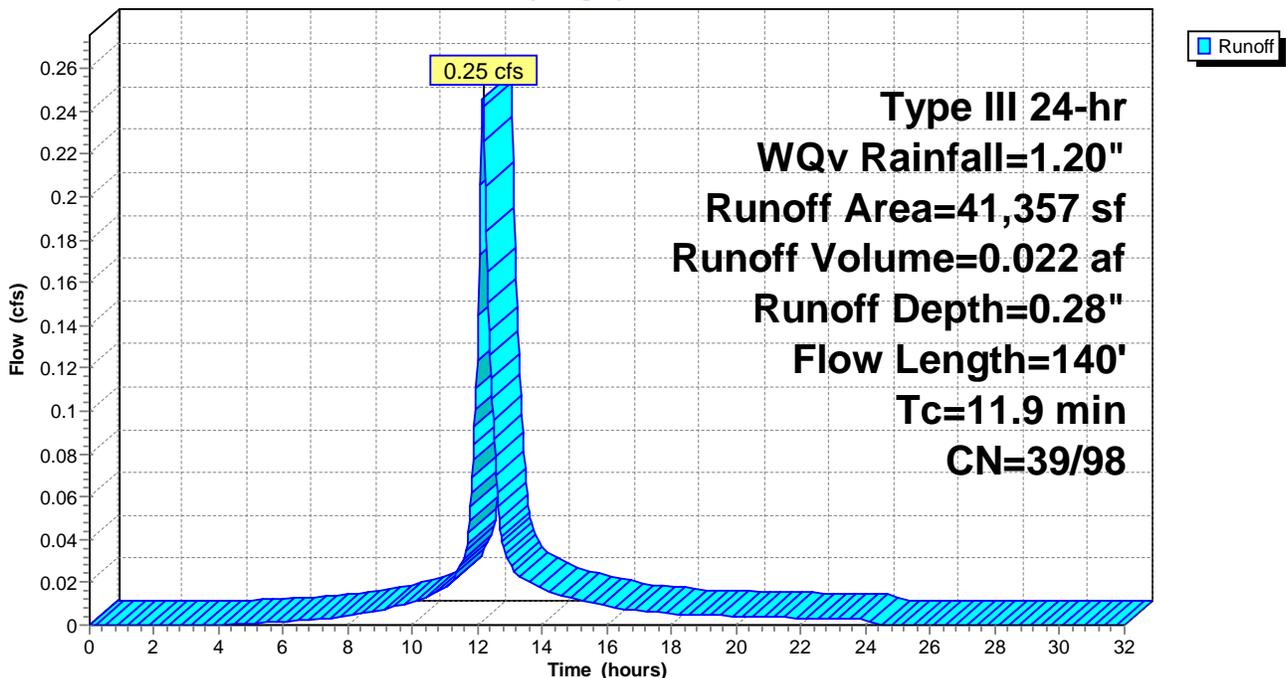
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
10,245	98	Paved parking, HSG A
1,596	98	Unconnected pavement, HSG A
29,516	39	>75% Grass cover, Good, HSG A
41,357	56	Weighted Average
29,516	39	71.37% Pervious Area
11,841	98	28.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	76	0.0200	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	24	0.0200	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	140	Total			

Subcatchment 3X: EX-AREA-3

Hydrograph



Summary for Subcatchment 4S: PR-BLDG

Runoff = 0.13 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 0.40"

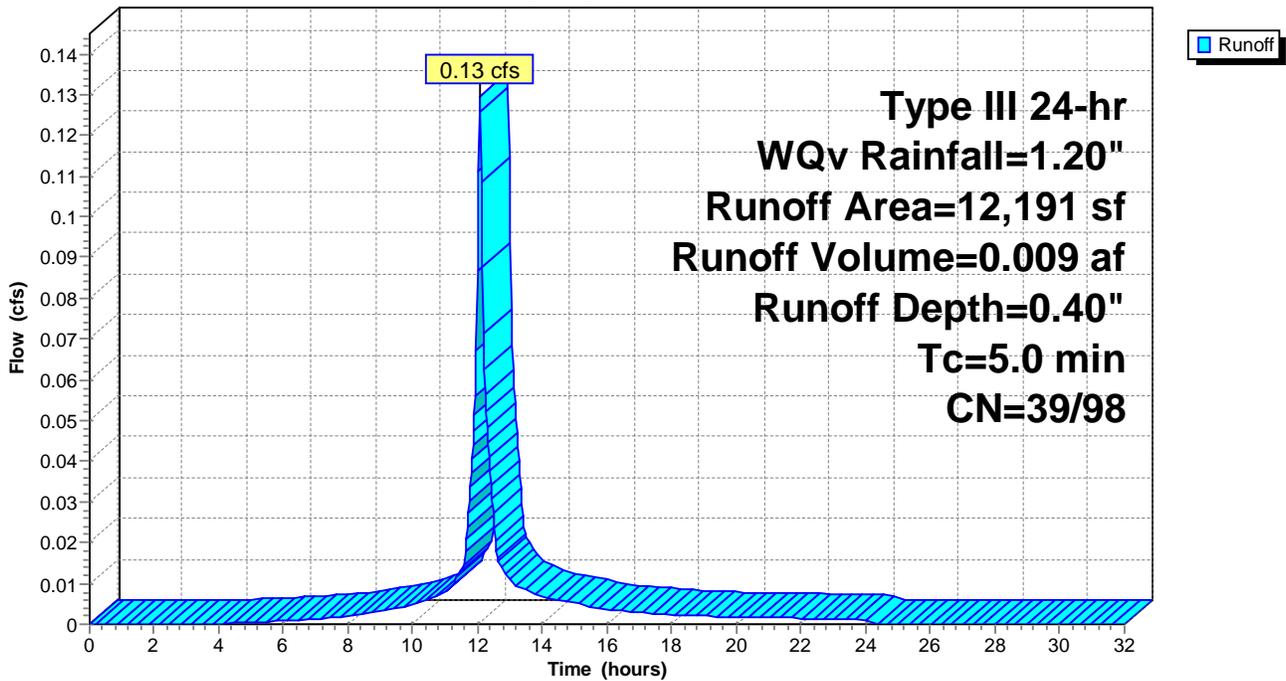
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
5,000	98	Roofs, HSG A
7,191	39	>75% Grass cover, Good, HSG A
12,191	63	Weighted Average
7,191	39	58.99% Pervious Area
5,000	98	41.01% Impervious Area

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

Subcatchment 4S: PR-BLDG

Hydrograph



Summary for Subcatchment 5S: SOUTH PAVEMENT

Runoff = 0.10 cfs @ 12.07 hrs, Volume= 0.007 af, Depth= 0.99"

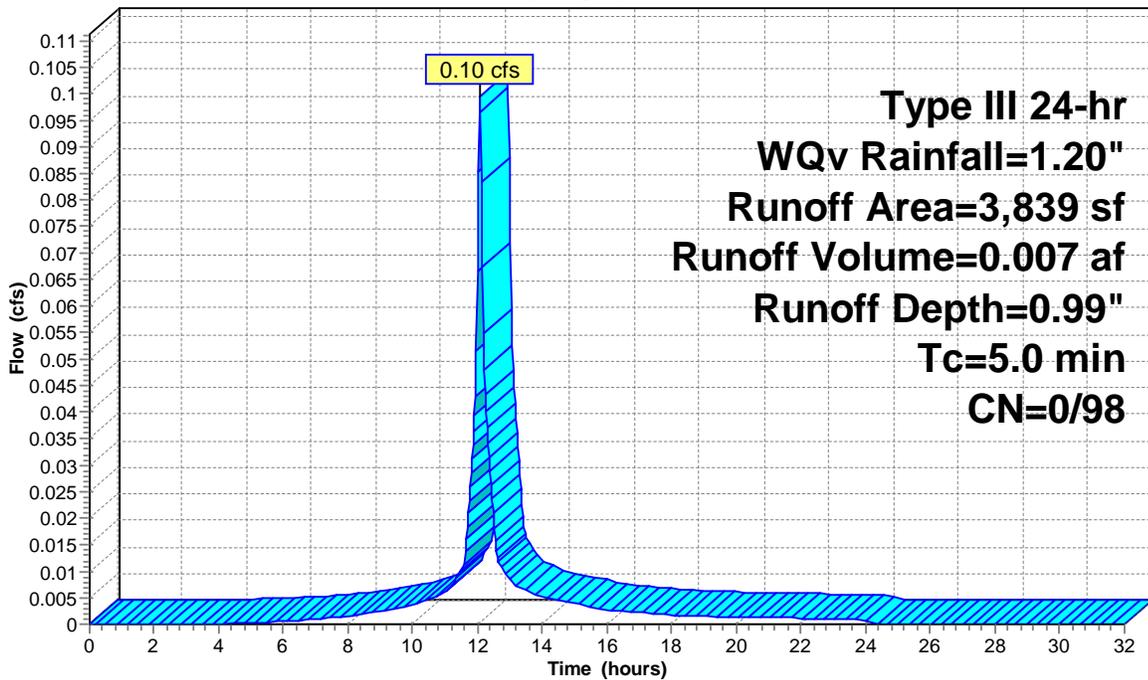
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
3,839	98	Paved parking, HSG A
3,839	98	100.00% Impervious Area

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

Subcatchment 5S: SOUTH PAVEMENT

Hydrograph



Summary for Subcatchment 6S: NORTH PAVEMENT

Runoff = 0.10 cfs @ 12.07 hrs, Volume= 0.007 af, Depth= 0.99"

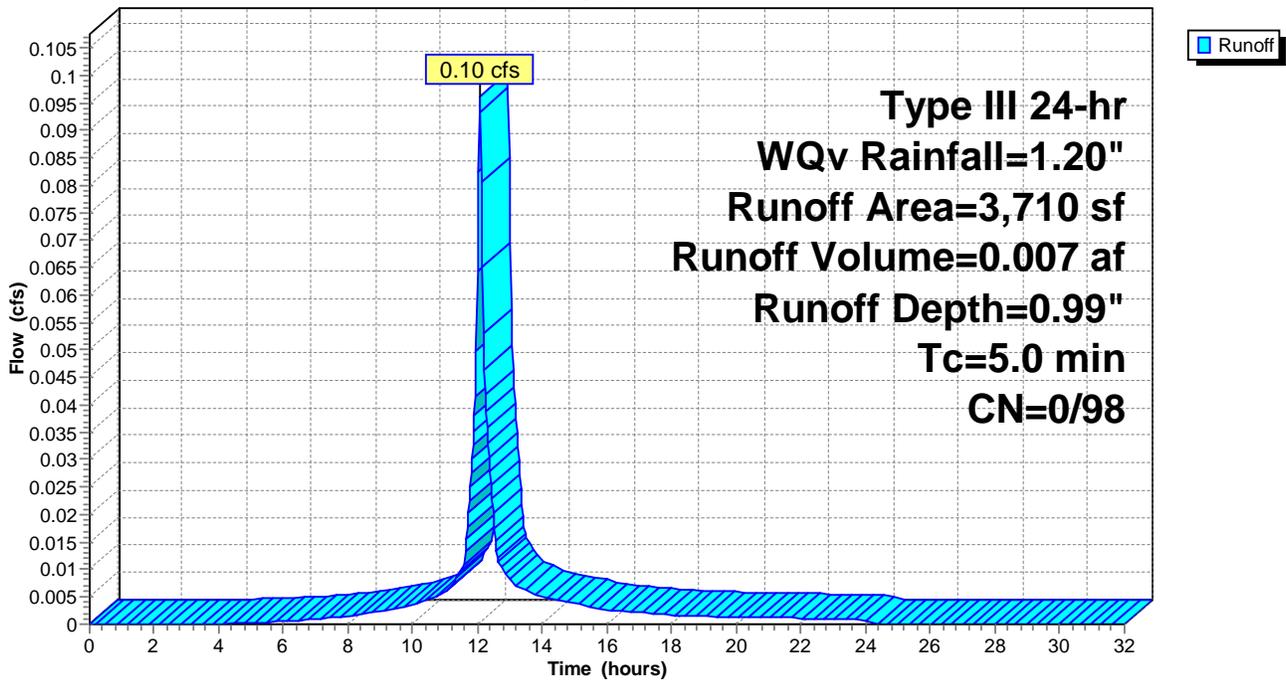
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
3,710	98	Paved parking, HSG A
3,710	98	100.00% Impervious Area

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

Subcatchment 6S: NORTH PAVEMENT

Hydrograph



Summary for Subcatchment 7S: PR-AREA-3B

Runoff = 0.13 cfs @ 12.17 hrs, Volume= 0.012 af, Depth= 0.31"

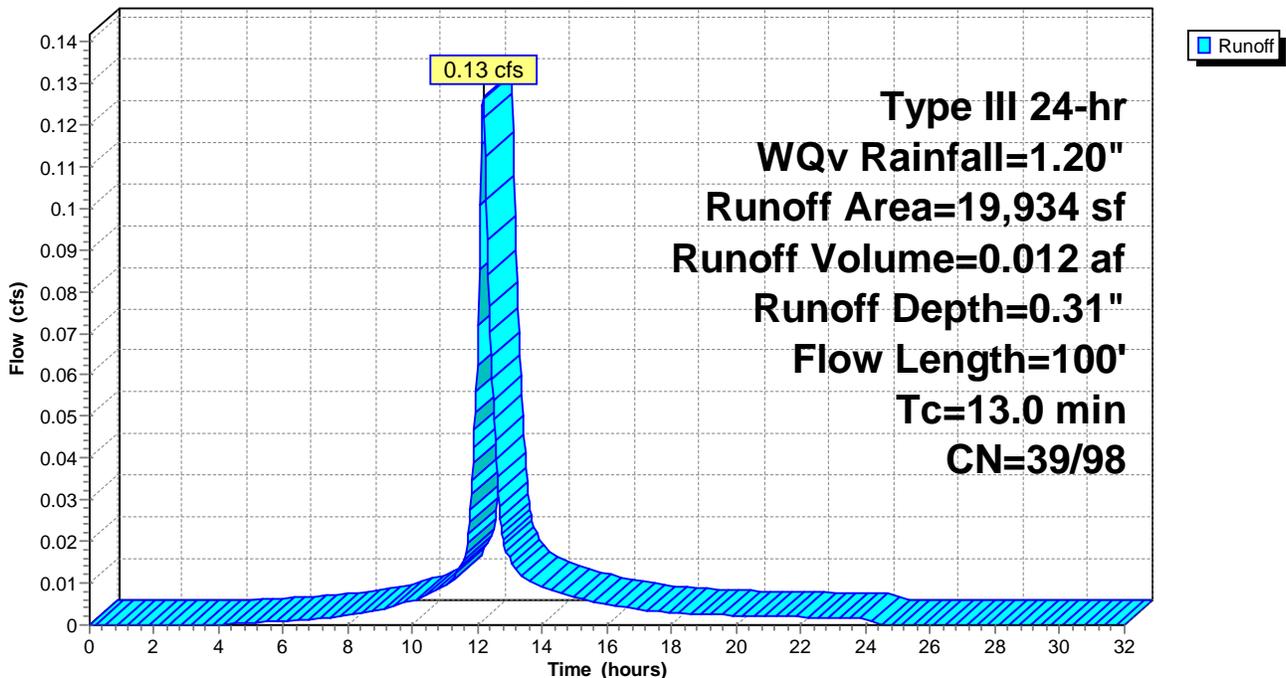
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
5,493	98	Paved parking, HSG A
790	98	Unconnected pavement, HSG A
13,651	39	>75% Grass cover, Good, HSG A
19,934	58	Weighted Average
13,651	39	68.48% Pervious Area
6,283	98	31.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	20	0.0050	0.05		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.6	20	0.0050	0.58		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
4.1	36	0.0555	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.5	24	0.3300	0.27		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
13.0	100	Total			

Subcatchment 7S: PR-AREA-3B

Hydrograph



Summary for Subcatchment 9S: SOUTH LAWN

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

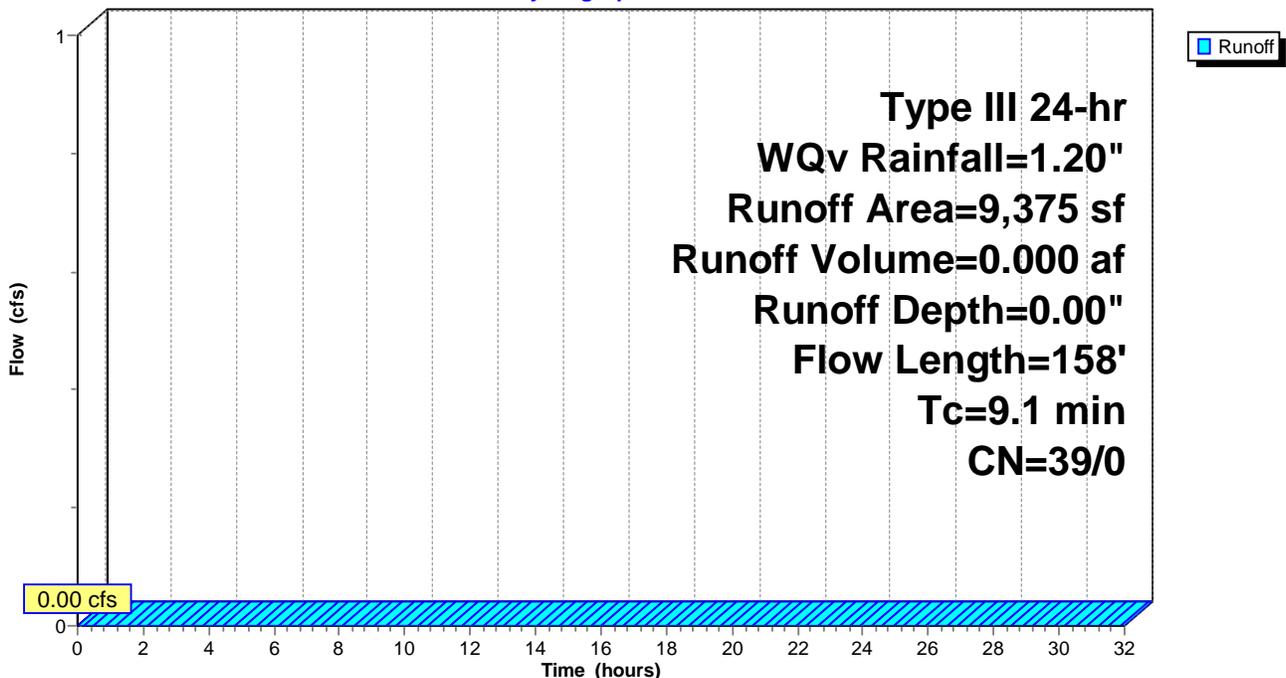
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
Type III 24-hr WQv Rainfall=1.20"

Area (sf)	CN	Description
9,375	39	>75% Grass cover, Good, HSG A
9,375	39	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.0700	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	36	0.0556	1.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	22	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.1	158	Total			

Subcatchment 9S: SOUTH LAWN

Hydrograph



Summary for Pond 1P: WQ POND

Inflow Area = 0.945 ac, 43.99% Impervious, Inflow Depth = 0.43" for WQv event
 Inflow = 0.41 cfs @ 12.08 hrs, Volume= 0.034 af
 Outflow = 0.08 cfs @ 12.56 hrs, Volume= 0.034 af, Atten= 80%, Lag= 28.4 min
 Discarded = 0.08 cfs @ 12.56 hrs, Volume= 0.034 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 246.33' @ 12.56 hrs Surf.Area= 1,478 sf Storage= 421 cf

Plug-Flow detention time= 33.8 min calculated for 0.034 af (100% of inflow)
 Center-of-Mass det. time= 33.8 min (816.8 - 783.0)

Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	8,240 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.00	1,070	0	0
247.00	2,305	1,688	1,688
248.00	3,262	2,784	4,471
249.00	4,275	3,769	8,240

Device	Routing	Invert	Outlet Devices
#1	Discarded	246.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'
#2	Primary	248.00'	2.5" x 2.5" Horiz. Orifice/Grate X 6.00 columns X 6 rows C= 0.600 Limited to weir flow at low heads
#3	Secondary	248.00'	2.5" x 2.5" Horiz. Orifice/Grate X 6.00 columns X 6 rows C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.08 cfs @ 12.56 hrs HW=246.33' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=246.00' TW=245.00' (Dynamic Tailwater)

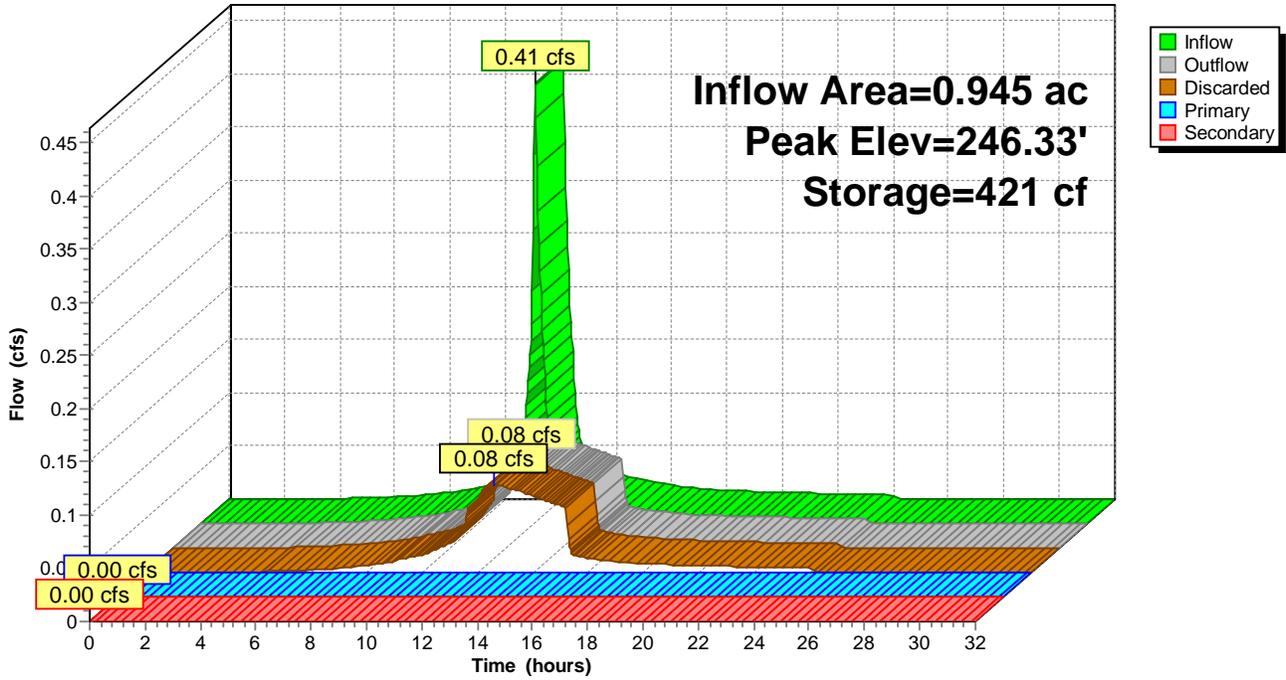
↑2=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=246.00' TW=245.00' (Dynamic Tailwater)

↑3=Orifice/Grate (Controls 0.00 cfs)

Pond 1P: WQ POND

Hydrograph



Summary for Pond 2P: SOUTH POND

Inflow Area = 0.673 ac, 21.44% Impervious, Inflow Depth = 0.21" for WQv event
 Inflow = 0.13 cfs @ 12.17 hrs, Volume= 0.012 af
 Outflow = 0.03 cfs @ 12.67 hrs, Volume= 0.012 af, Atten= 79%, Lag= 30.1 min
 Discarded = 0.03 cfs @ 12.67 hrs, Volume= 0.012 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 245.44' @ 12.67 hrs Surf.Area= 485 sf Storage= 161 cf

Plug-Flow detention time= 45.8 min calculated for 0.012 af (100% of inflow)
 Center-of-Mass det. time= 45.7 min (834.2 - 788.5)

Volume	Invert	Avail.Storage	Storage Description
#1	245.00'	2,920 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.00	244	0	0
246.00	791	518	518
247.00	1,182	987	1,504
248.00	1,650	1,416	2,920

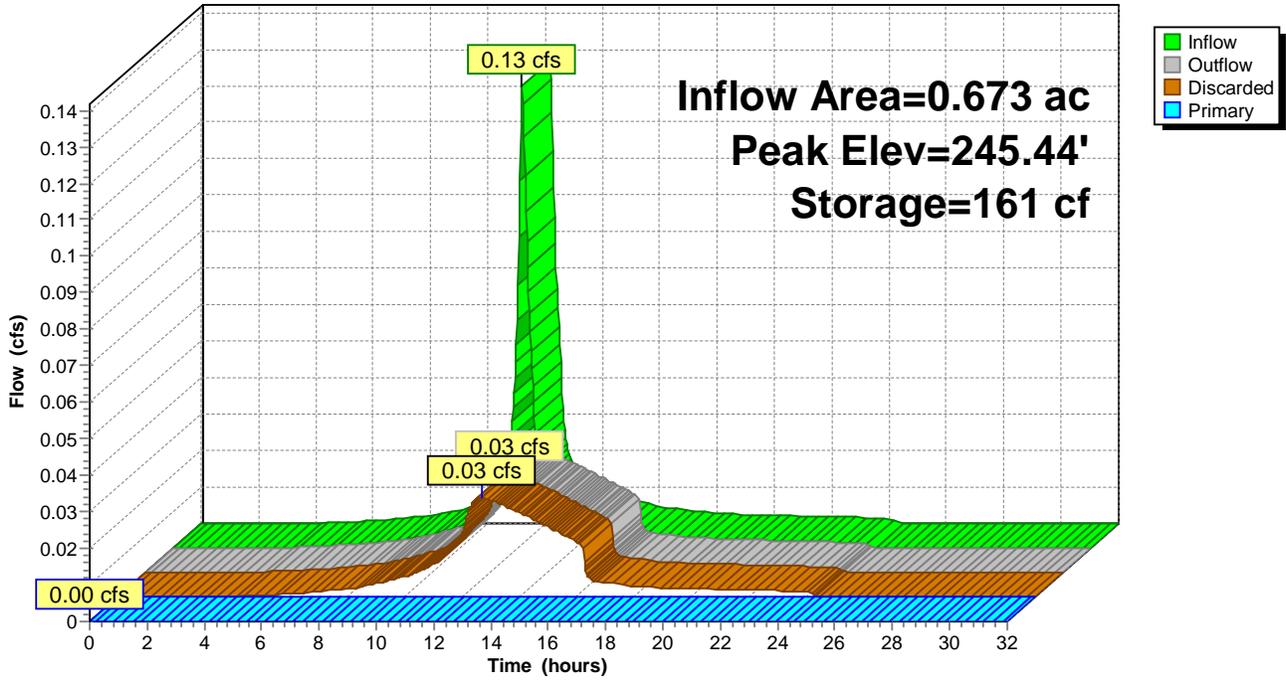
Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.02'
#2	Primary	247.00'	20.0' long x 12.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Discarded OutFlow Max=0.03 cfs @ 12.67 hrs HW=245.44' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=245.00' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 2P: SOUTH POND

Hydrograph



Summary for Pond 3P: SOUTH CHAMBERS

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 245.00' @ 0.00 hrs Surf.Area= 0.037 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	245.00'	0.022 af	21.50'W x 74.40'L x 2.33'H Field A 0.086 af Overall - 0.020 af Embedded = 0.065 af x 33.0% Voids
#2A	245.50'	0.020 af	ADS_StormTech SC-310 +Cap x 60 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 60 Chambers in 6 Rows
		0.042 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=245.00' (Free Discharge)

↑**1=Exfiltration** (Controls 0.00 cfs)

Pond 3P: SOUTH CHAMBERS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-310 +Cap (ADS StormTech® SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

6 Rows x 34.0" Wide + 6.0" Spacing x 5 + 12.0" Side Stone x 2 = 21.50' Base Width

6.0" Base + 16.0" Chamber Height + 6.0" Cover = 2.33' Field Height

60 Chambers x 14.7 cf = 884.5 cf Chamber Storage

3,732.4 cf Field - 884.5 cf Chambers = 2,847.9 cf Stone x 33.0% Voids = 939.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,824.3 cf = 0.042 af

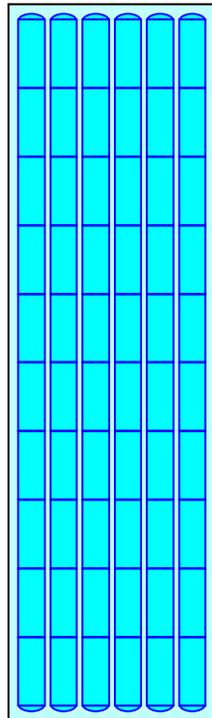
Overall Storage Efficiency = 48.9%

Overall System Size = 74.40' x 21.50' x 2.33'

60 Chambers

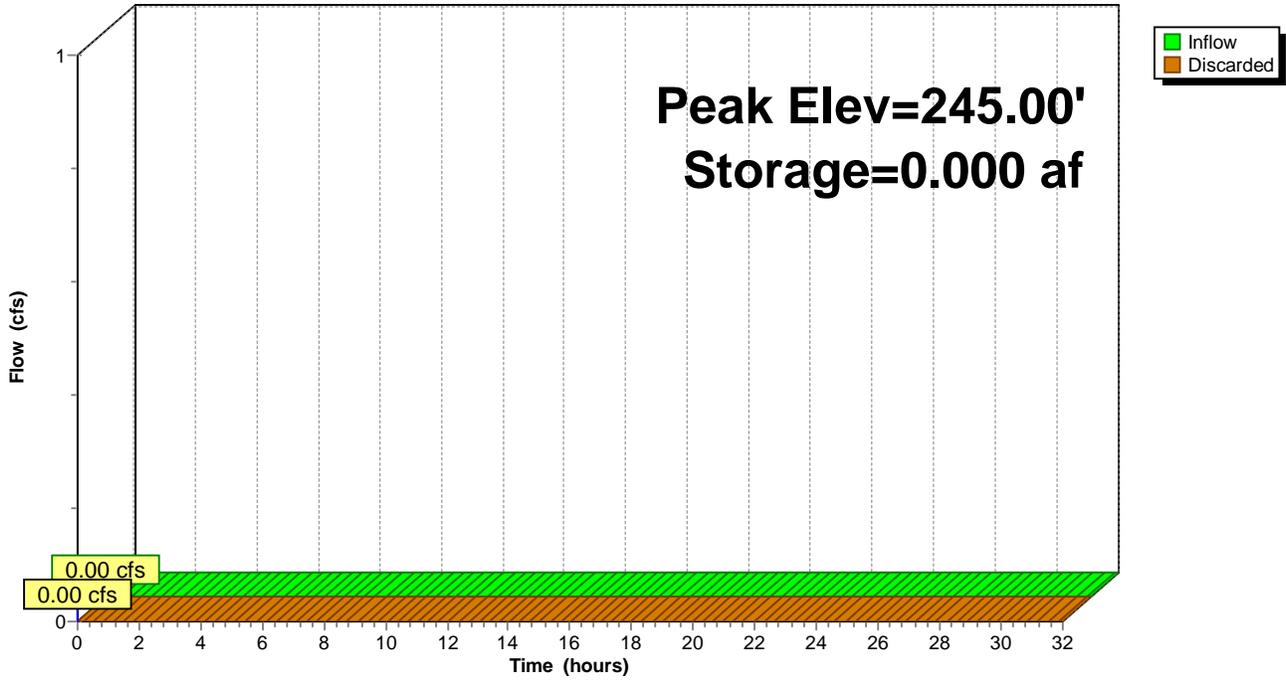
138.2 cy Field

105.5 cy Stone



Pond 3P: SOUTH CHAMBERS

Hydrograph



Summary for Pond 4P: NORTH CHAMBERS

Inflow Area = 0.945 ac, 43.99% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 245.00' @ 0.00 hrs Surf.Area= 0.037 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	245.00'	0.022 af	21.50"W x 74.40"L x 2.33"H Field A 0.086 af Overall - 0.020 af Embedded = 0.065 af x 33.0% Voids
#2A	245.50'	0.020 af	ADS_StormTech SC-310 +Cap x 60 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 60 Chambers in 6 Rows
		0.042 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=245.00' (Free Discharge)
 ↑**1=Exfiltration** (Passes 0.00 cfs of 0.09 cfs potential flow)

Pond 4P: NORTH CHAMBERS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-310 +Cap (ADS StormTech® SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

6 Rows x 34.0" Wide + 6.0" Spacing x 5 + 12.0" Side Stone x 2 = 21.50' Base Width

6.0" Base + 16.0" Chamber Height + 6.0" Cover = 2.33' Field Height

60 Chambers x 14.7 cf = 884.5 cf Chamber Storage

3,732.4 cf Field - 884.5 cf Chambers = 2,847.9 cf Stone x 33.0% Voids = 939.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,824.3 cf = 0.042 af

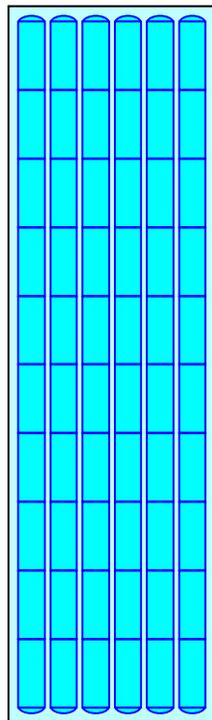
Overall Storage Efficiency = 48.9%

Overall System Size = 74.40' x 21.50' x 2.33'

60 Chambers

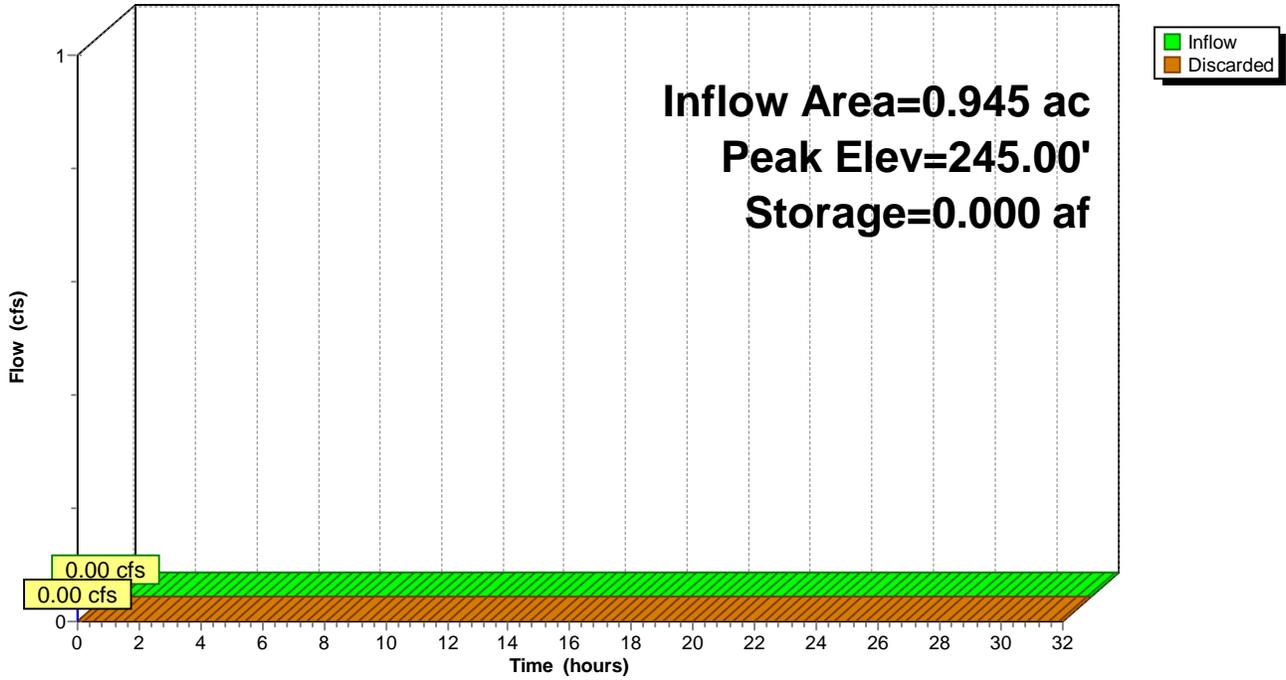
138.2 cy Field

105.5 cy Stone



Pond 4P: NORTH CHAMBERS

Hydrograph

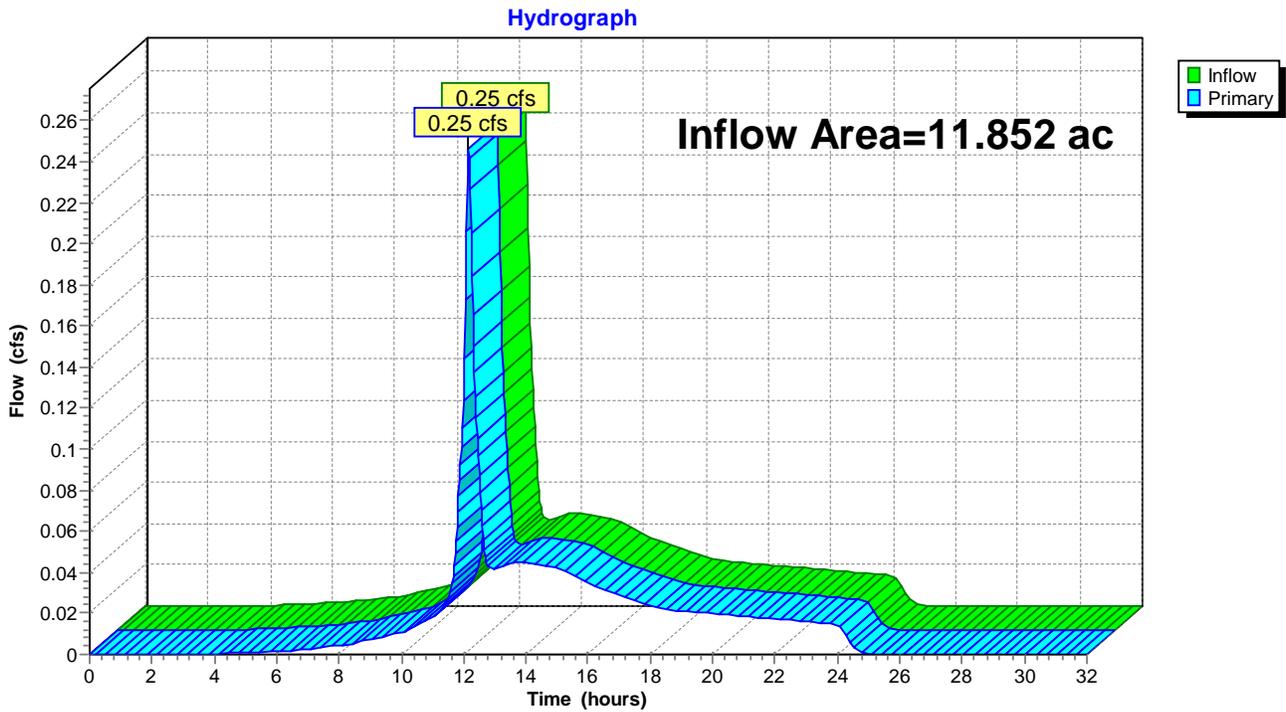


Summary for Link 3L: TOTAL EX SITE

Inflow Area = 11.852 ac, 2.29% Impervious, Inflow Depth = 0.04" for WQv event
Inflow = 0.25 cfs @ 12.16 hrs, Volume= 0.041 af
Primary = 0.25 cfs @ 12.16 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs

Link 3L: TOTAL EX SITE

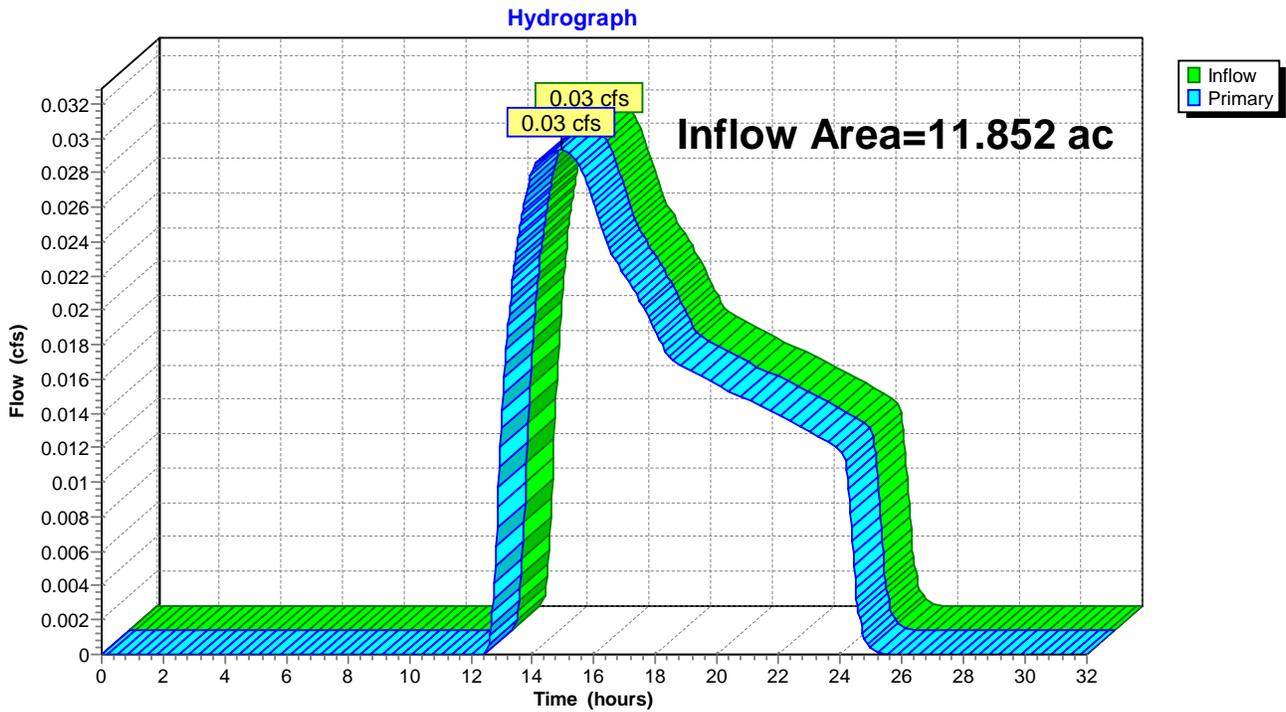


Summary for Link 4L: TOTAL PR SITE

Inflow Area = 11.852 ac, 4.72% Impervious, Inflow Depth = 0.02" for WQv event
Inflow = 0.03 cfs @ 14.91 hrs, Volume= 0.018 af
Primary = 0.03 cfs @ 14.91 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs

Link 4L: TOTAL PR SITE



Time span=0.00-32.00 hrs, dt=0.03 hrs, 1068 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR-AREA-1	Runoff Area=154,871 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=634' Tc=21.1 min CN=41 Runoff=0.00 cfs 0.000 af
Subcatchment 1X: EX-AREA-1	Runoff Area=183,986 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=993' Tc=22.4 min CN=38 Runoff=0.00 cfs 0.000 af
Subcatchment 2S: EX-AREA-2	Runoff Area=290,921 sf 0.00% Impervious Runoff Depth=0.59" Tc=30.0 min CN=71 Runoff=2.23 cfs 0.331 af
Subcatchment 2X: EX-AREA-2	Runoff Area=290,921 sf 0.00% Impervious Runoff Depth=0.59" Tc=30.0 min CN=71 Runoff=2.23 cfs 0.331 af
Subcatchment 3S: PR-AREA-3A	Runoff Area=21,423 sf 25.94% Impervious Runoff Depth=0.09" Flow Length=140' Tc=11.9 min UI Adjusted CN=53 Runoff=0.01 cfs 0.004 af
Subcatchment 3X: EX-AREA-3	Runoff Area=41,357 sf 28.63% Impervious Runoff Depth=0.12" Flow Length=140' Tc=11.9 min UI Adjusted CN=55 Runoff=0.02 cfs 0.010 af
Subcatchment 4S: PR-BLDG	Runoff Area=12,191 sf 41.01% Impervious Runoff Depth=0.31" Tc=5.0 min CN=63 Runoff=0.06 cfs 0.007 af
Subcatchment 5S: SOUTH PAVEMENT	Runoff Area=3,839 sf 100.00% Impervious Runoff Depth=2.47" Tc=5.0 min CN=98 Runoff=0.24 cfs 0.018 af
Subcatchment 6S: NORTH PAVEMENT	Runoff Area=3,710 sf 100.00% Impervious Runoff Depth=2.47" Tc=5.0 min CN=98 Runoff=0.23 cfs 0.018 af
Subcatchment 7S: PR-AREA-3B	Runoff Area=19,934 sf 31.52% Impervious Runoff Depth=0.18" Flow Length=100' Tc=13.0 min CN=58 Runoff=0.03 cfs 0.007 af
Subcatchment 9S: SOUTH LAWN	Runoff Area=9,375 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=158' Tc=9.1 min CN=39 Runoff=0.00 cfs 0.000 af
Pond 1P: WQ POND	Peak Elev=246.38' Storage=498 cf Inflow=0.51 cfs 0.047 af Discarded=0.09 cfs 0.047 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.09 cfs 0.047 af
Pond 2P: SOUTH POND	Peak Elev=245.07' Storage=20 cf Inflow=0.03 cfs 0.007 af Discarded=0.02 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.007 af
Pond 3P: SOUTH CHAMBERS	Peak Elev=245.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond 4P: NORTH CHAMBERS	Peak Elev=245.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Link 3L: TOTAL EX SITE	Inflow=2.26 cfs 0.340 af Primary=2.26 cfs 0.340 af

25023.00-AIRPORT ROAD-12-01-2025

Type III 24-hr 1-Year Rainfall=2.70"

Prepared by Commonwealth Engineering and Consultants, Inc.

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Page 2

Link 4L: TOTAL PR SITE

Inflow=2.23 cfs 0.331 af

Primary=2.23 cfs 0.331 af

Total Runoff Area = 23.704 ac Runoff Volume = 0.725 af Average Runoff Depth = 0.37"
96.49% Pervious = 22.872 ac 3.51% Impervious = 0.832 ac

Summary for Subcatchment 1S: PR-AREA-1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

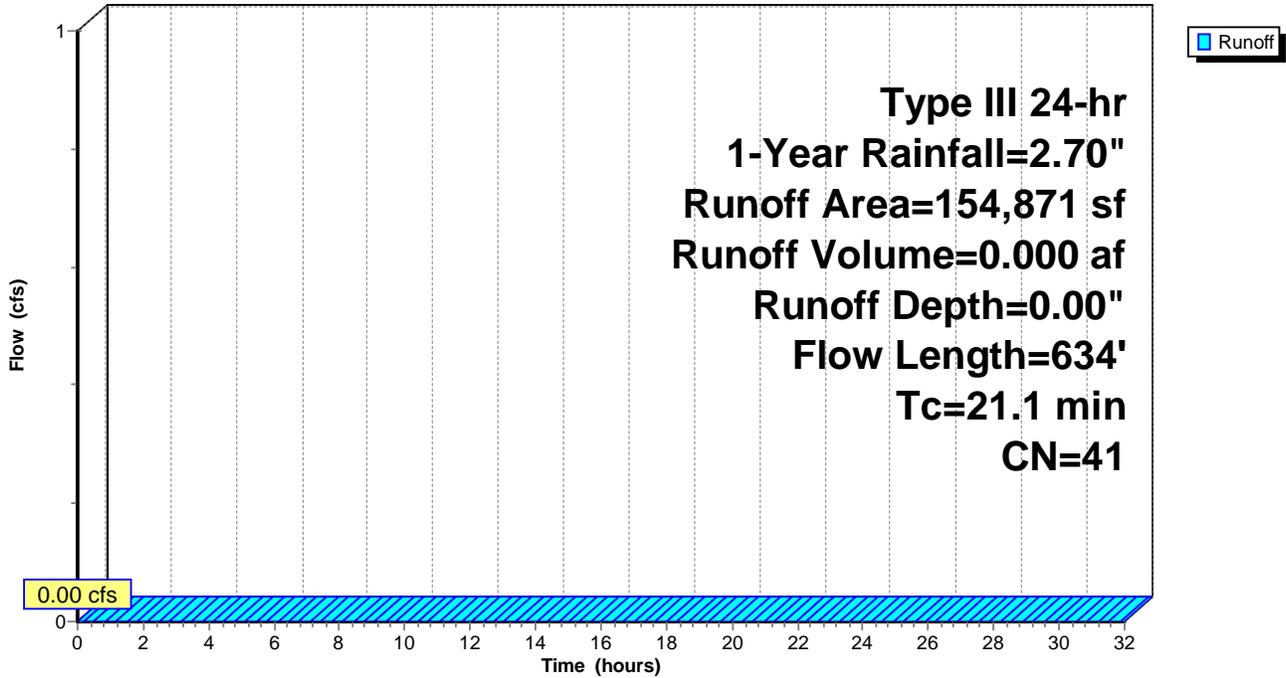
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
99,694	30	Woods, Good, HSG A
30,746	77	Woods, Good, HSG D
22,307	39	>75% Grass cover, Good, HSG A
2,124	80	>75% Grass cover, Good, HSG D
154,871	41	Weighted Average
154,871	41	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	80	0.0240	0.08		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
1.7	18	0.3300	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
0.1	21	0.3300	2.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.9	515	0.0040	3.00	30.04	Channel Flow, Area= 10.0 sf Perim= 14.0' r= 0.71' n= 0.025 Earth, clean & winding
21.1	634	Total			

Subcatchment 1S: PR-AREA-1

Hydrograph



Summary for Subcatchment 1X: EX-AREA-1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

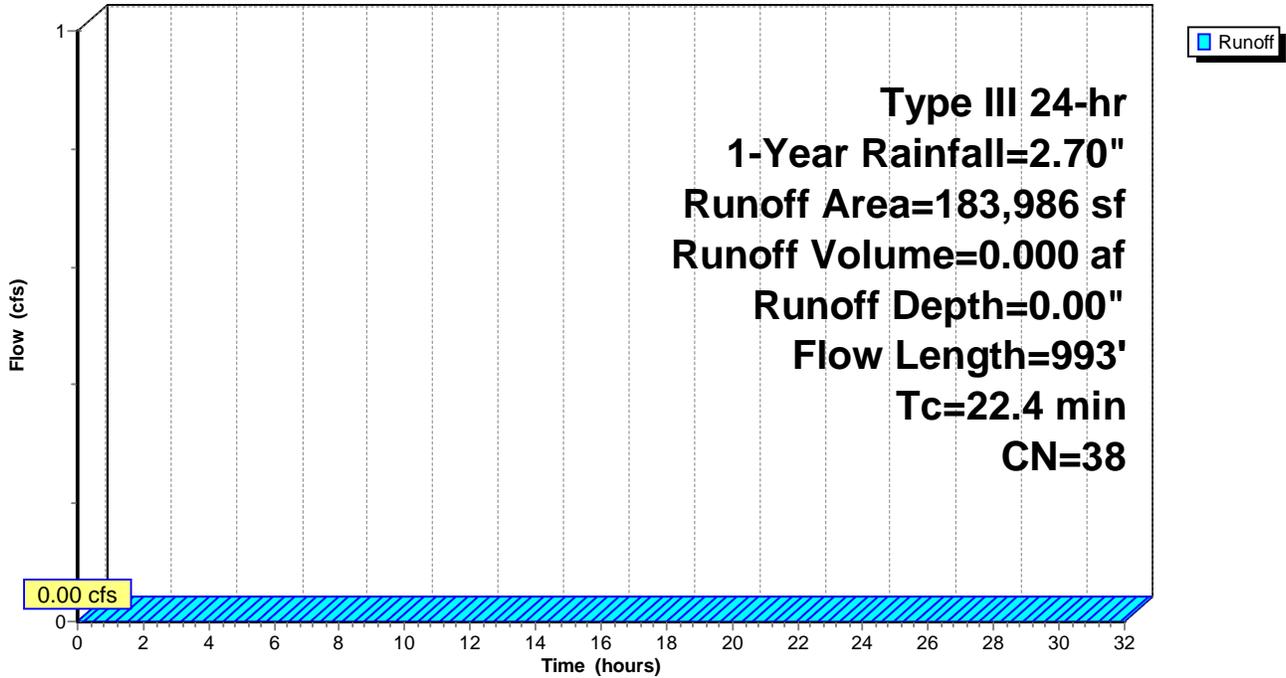
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
63,300	30	Woods, Good, HSG A
32,870	77	Woods, Good, HSG D
87,816	30	Woods, Good, HSG A
183,986	38	Weighted Average
183,986	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	20	0.0050	0.05		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.6	20	0.0050	0.58		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
9.7	60	0.0500	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
1.5	123	0.0700	1.32		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.8	770	0.0050	3.36	33.58	Channel Flow, Area= 10.0 sf Perim= 14.0' r= 0.71' n= 0.025 Earth, clean & winding
22.4	993	Total			

Subcatchment 1X: EX-AREA-1

Hydrograph



Summary for Subcatchment 2S: EX-AREA-2

Runoff = 2.23 cfs @ 12.49 hrs, Volume= 0.331 af, Depth= 0.59"

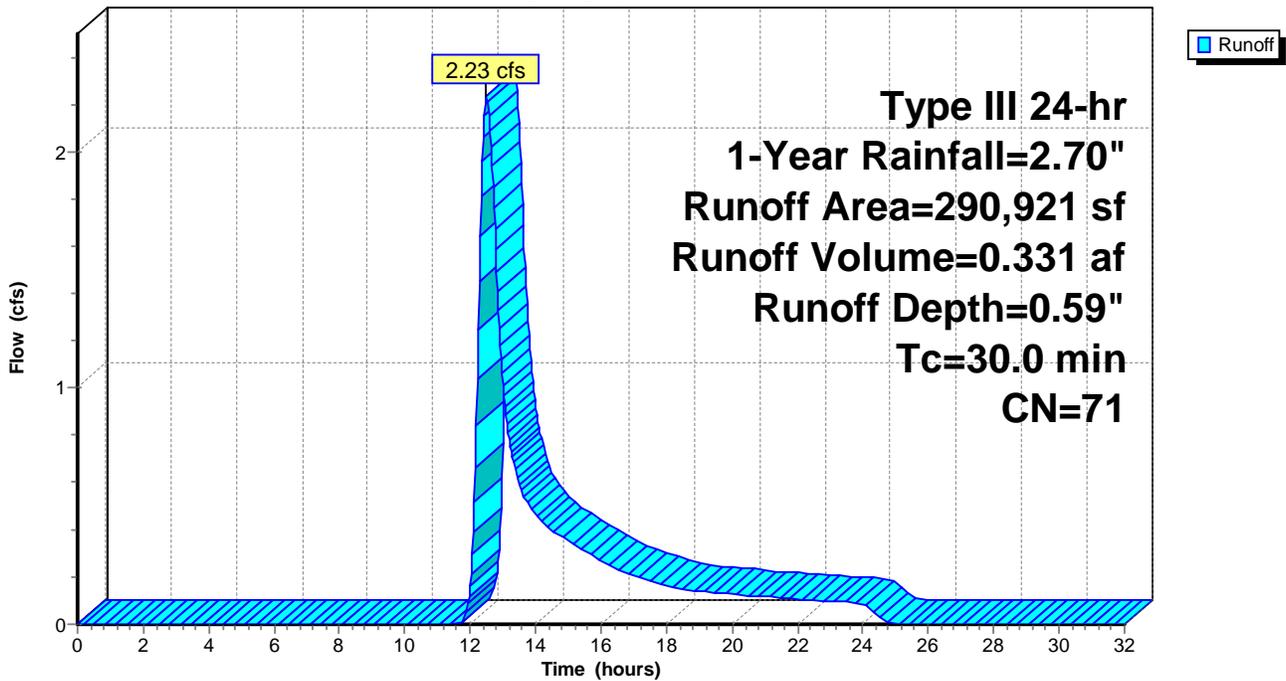
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
166,225	77	Woods, Good, HSG D
102,013	70	Woods, Good, HSG C
22,683	30	Woods, Good, HSG A
290,921	71	Weighted Average
290,921	71	100.00% Pervious Area

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

Subcatchment 2S: EX-AREA-2

Hydrograph



Summary for Subcatchment 2X: EX-AREA-2

Runoff = 2.23 cfs @ 12.49 hrs, Volume= 0.331 af, Depth= 0.59"

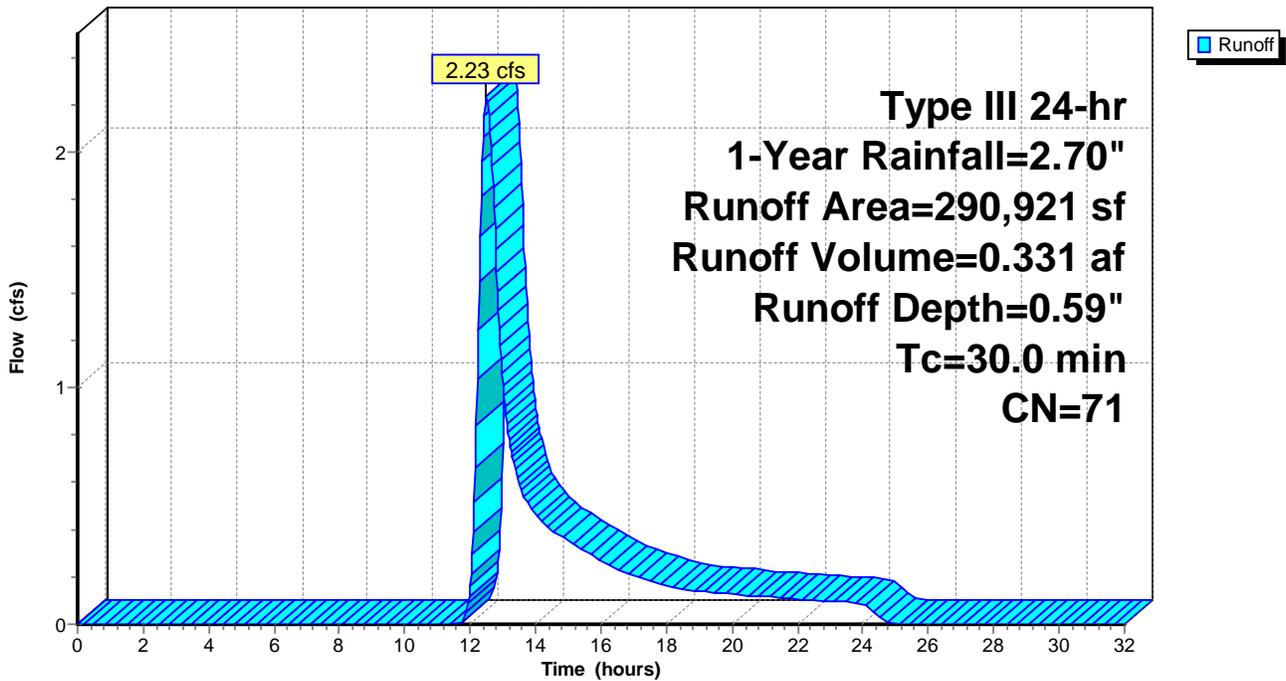
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
166,225	77	Woods, Good, HSG D
102,013	70	Woods, Good, HSG C
22,683	30	Woods, Good, HSG A
290,921	71	Weighted Average
290,921	71	100.00% Pervious Area

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

Subcatchment 2X: EX-AREA-2

Hydrograph



Summary for Subcatchment 3S: PR-AREA-3A

Runoff = 0.01 cfs @ 13.80 hrs, Volume= 0.004 af, Depth= 0.09"

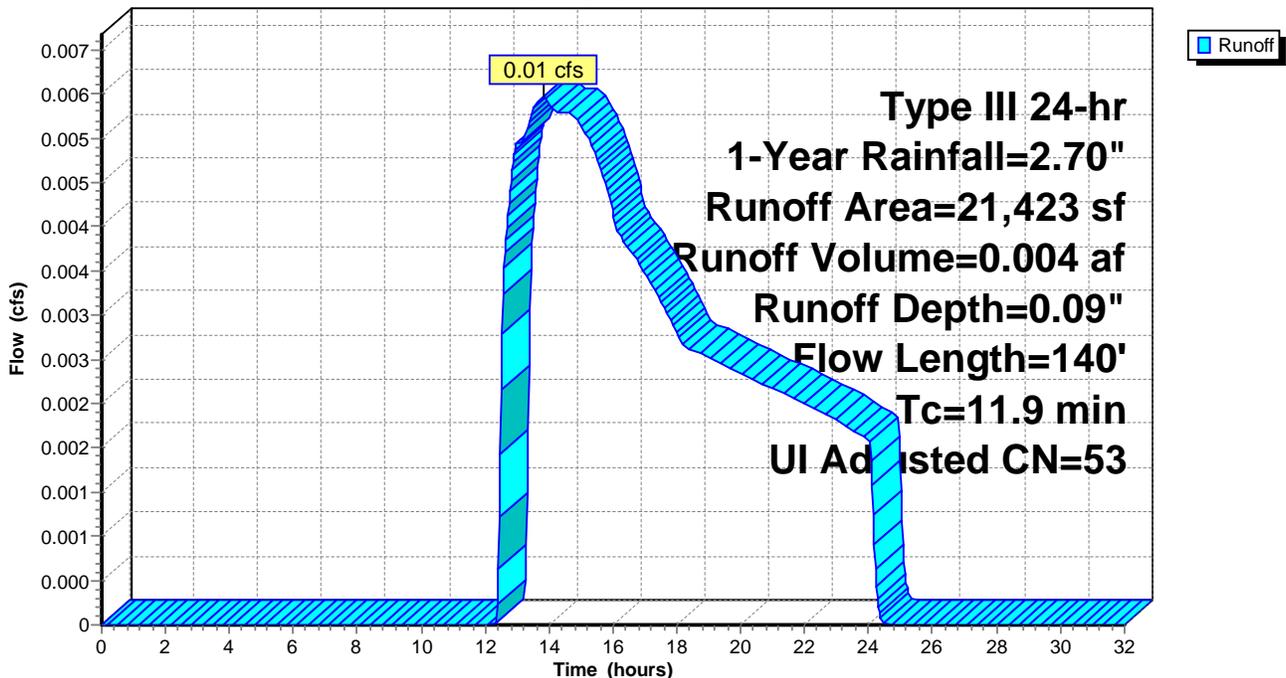
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Adj	Description
4,752	98		Paved parking, HSG A
806	98		Unconnected pavement, HSG A
15,865	39		>75% Grass cover, Good, HSG A
21,423	54	53	Weighted Average, UI Adjusted
15,865	39	39	74.06% Pervious Area
5,558	98	98	25.94% Impervious Area
806			14.50% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	76	0.0200	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	24	0.0200	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	140	Total			

Subcatchment 3S: PR-AREA-3A

Hydrograph



Summary for Subcatchment 3X: EX-AREA-3

Runoff = 0.02 cfs @ 12.54 hrs, Volume= 0.010 af, Depth= 0.12"

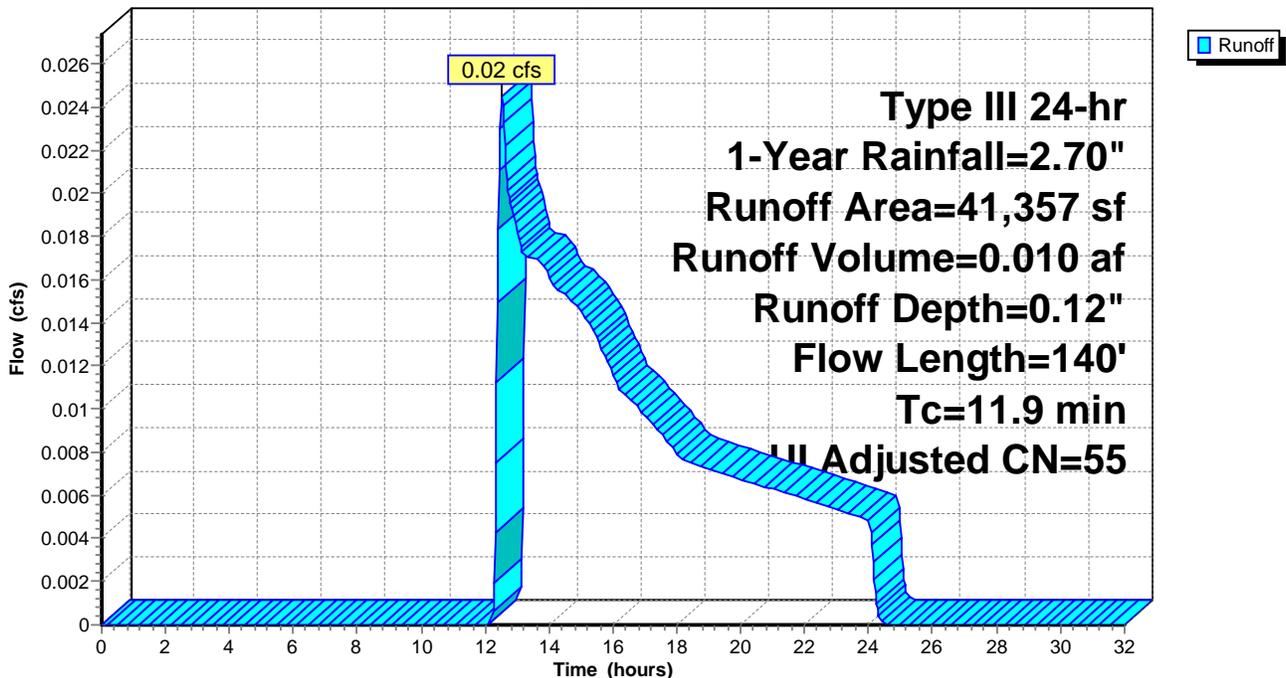
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Adj	Description
10,245	98		Paved parking, HSG A
1,596	98		Unconnected pavement, HSG A
29,516	39		>75% Grass cover, Good, HSG A
41,357	56	55	Weighted Average, UI Adjusted
29,516	39	39	71.37% Pervious Area
11,841	98	98	28.63% Impervious Area
1,596			13.48% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	76	0.0200	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	24	0.0200	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	140	Total			

Subcatchment 3X: EX-AREA-3

Hydrograph



Summary for Subcatchment 4S: PR-BLDG

Runoff = 0.06 cfs @ 12.12 hrs, Volume= 0.007 af, Depth= 0.31"

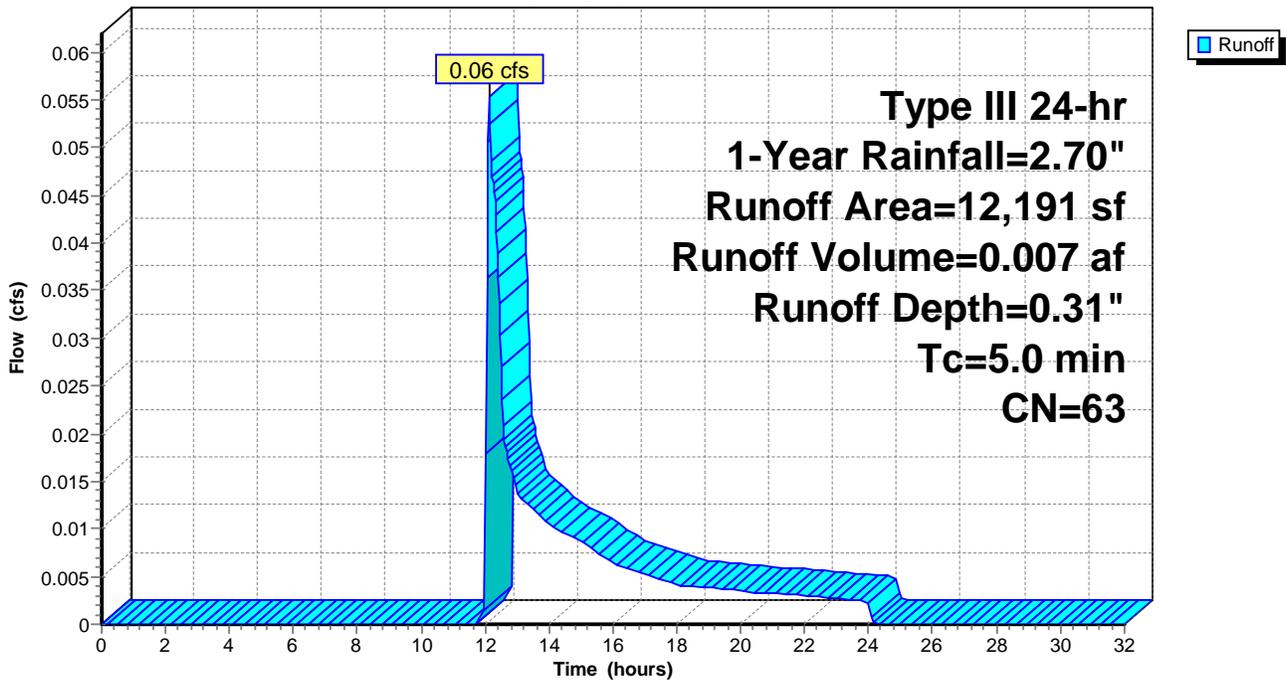
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
5,000	98	Roofs, HSG A
7,191	39	>75% Grass cover, Good, HSG A
12,191	63	Weighted Average
7,191	39	58.99% Pervious Area
5,000	98	41.01% Impervious Area

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

Subcatchment 4S: PR-BLDG

Hydrograph



Summary for Subcatchment 5S: SOUTH PAVEMENT

Runoff = 0.24 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 2.47"

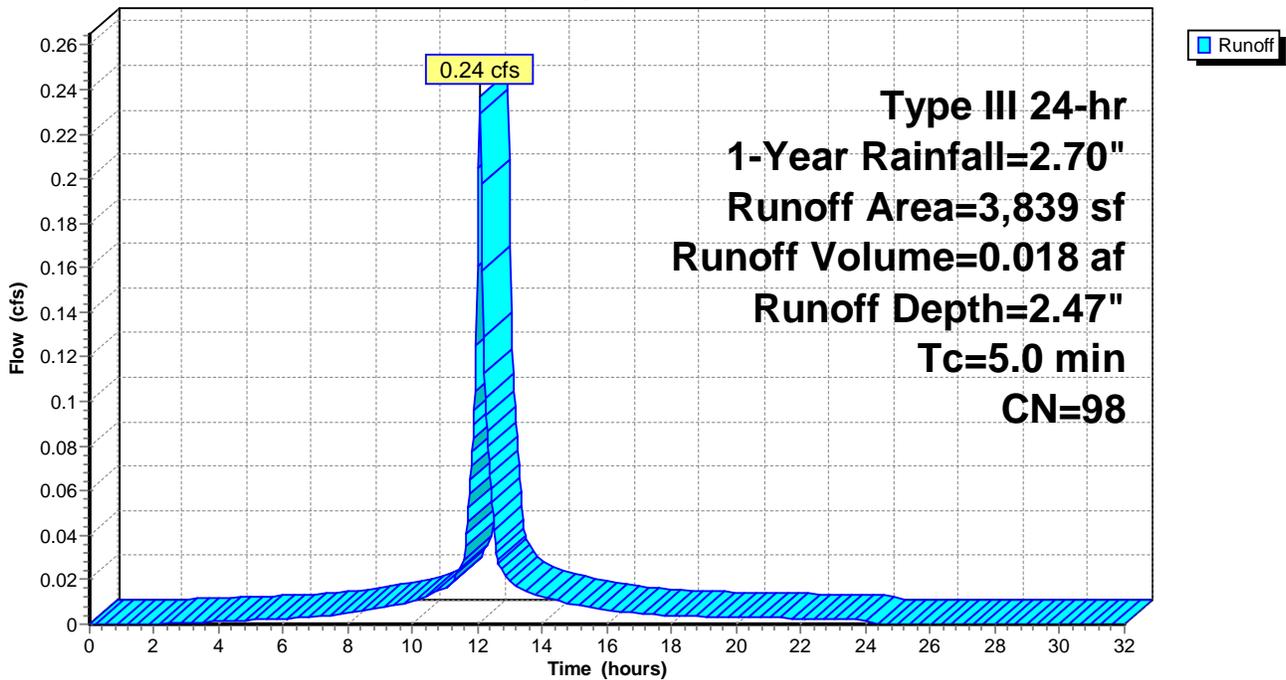
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
3,839	98	Paved parking, HSG A
3,839	98	100.00% Impervious Area

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

Subcatchment 5S: SOUTH PAVEMENT

Hydrograph



Summary for Subcatchment 6S: NORTH PAVEMENT

Runoff = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 2.47"

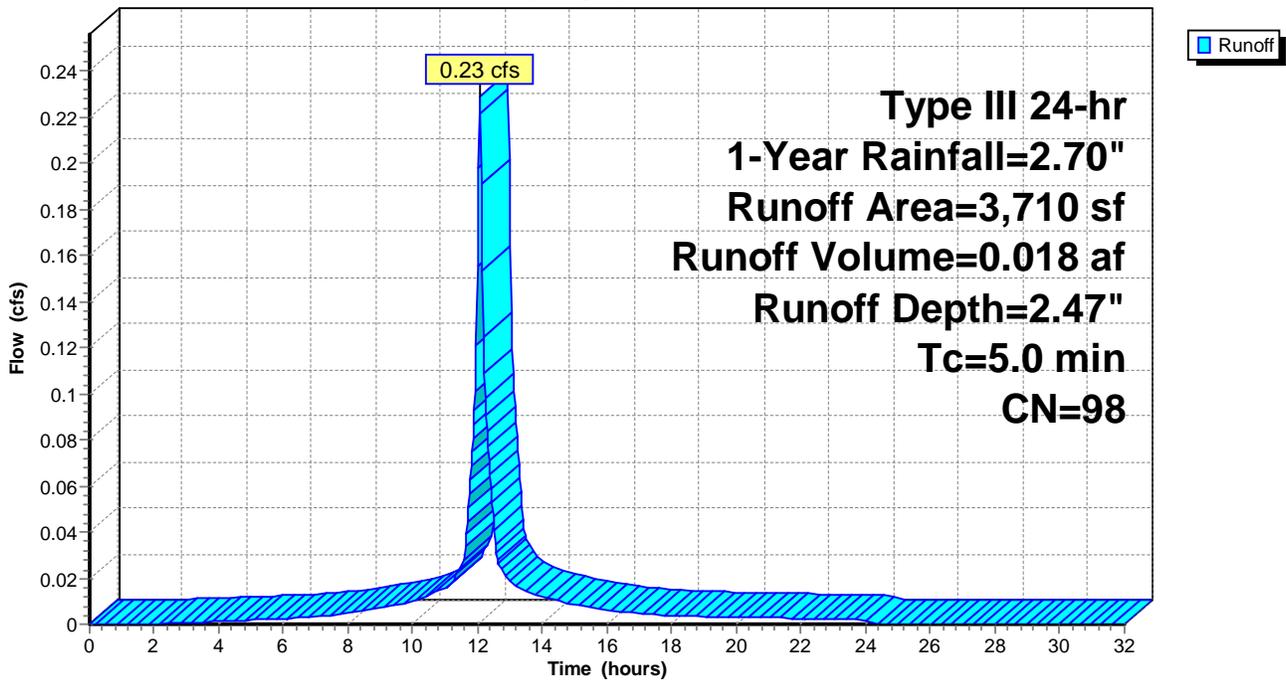
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
3,710	98	Paved parking, HSG A
3,710	98	100.00% Impervious Area

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

Subcatchment 6S: NORTH PAVEMENT

Hydrograph



Summary for Subcatchment 7S: PR-AREA-3B

Runoff = 0.03 cfs @ 12.47 hrs, Volume= 0.007 af, Depth= 0.18"

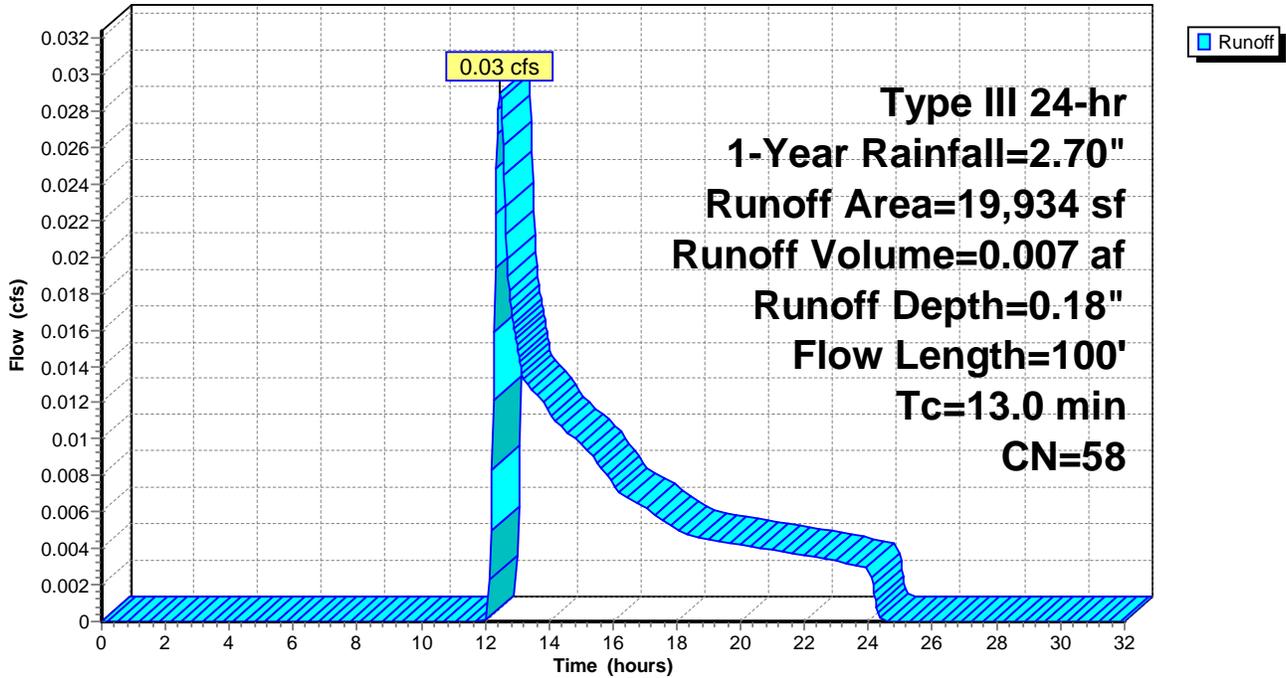
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
5,493	98	Paved parking, HSG A
790	98	Unconnected pavement, HSG A
13,651	39	>75% Grass cover, Good, HSG A
19,934	58	Weighted Average
13,651	39	68.48% Pervious Area
6,283	98	31.52% Impervious Area
790		12.57% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	20	0.0050	0.05		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.6	20	0.0050	0.58		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
4.1	36	0.0555	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.5	24	0.3300	0.27		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
13.0	100	Total			

Subcatchment 7S: PR-AREA-3B

Hydrograph



Summary for Subcatchment 9S: SOUTH LAWN

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

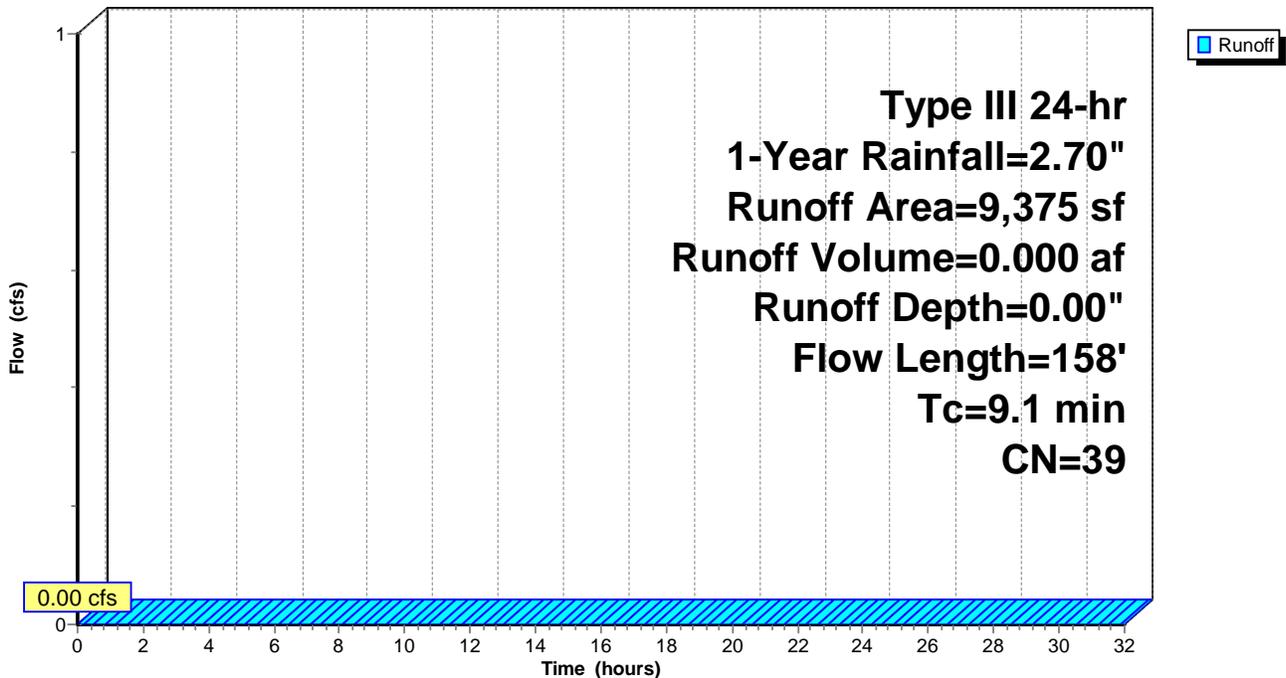
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
9,375	39	>75% Grass cover, Good, HSG A
9,375	39	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.0700	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	36	0.0556	1.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	22	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.1	158	Total			

Subcatchment 9S: SOUTH LAWN

Hydrograph



Summary for Pond 1P: WQ POND

Inflow Area = 0.945 ac, 43.99% Impervious, Inflow Depth = 0.59" for 1-Year event
 Inflow = 0.51 cfs @ 12.08 hrs, Volume= 0.047 af
 Outflow = 0.09 cfs @ 12.58 hrs, Volume= 0.047 af, Atten= 83%, Lag= 30.1 min
 Discarded = 0.09 cfs @ 12.58 hrs, Volume= 0.047 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 246.38' @ 12.58 hrs Surf.Area= 1,541 sf Storage= 498 cf

Plug-Flow detention time= 39.3 min calculated for 0.047 af (100% of inflow)
 Center-of-Mass det. time= 39.3 min (845.9 - 806.6)

Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	8,240 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.00	1,070	0	0
247.00	2,305	1,688	1,688
248.00	3,262	2,784	4,471
249.00	4,275	3,769	8,240

Device	Routing	Invert	Outlet Devices
#1	Discarded	246.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'
#2	Primary	248.00'	2.5" x 2.5" Horiz. Orifice/Grate X 6.00 columns X 6 rows C= 0.600 Limited to weir flow at low heads
#3	Secondary	248.00'	2.5" x 2.5" Horiz. Orifice/Grate X 6.00 columns X 6 rows C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.09 cfs @ 12.58 hrs HW=246.38' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=246.00' TW=245.00' (Dynamic Tailwater)

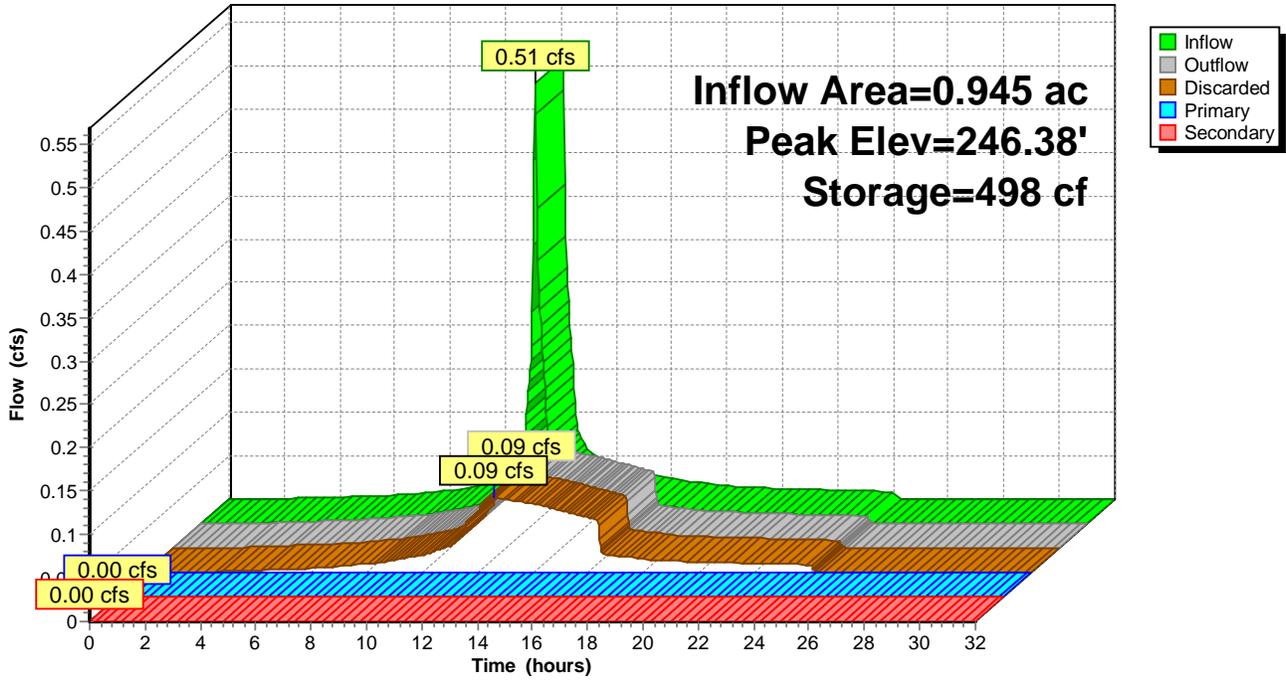
↑2=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=246.00' TW=245.00' (Dynamic Tailwater)

↑3=Orifice/Grate (Controls 0.00 cfs)

Pond 1P: WQ POND

Hydrograph



Summary for Pond 2P: SOUTH POND

Inflow Area = 0.673 ac, 21.44% Impervious, Inflow Depth = 0.13" for 1-Year event
 Inflow = 0.03 cfs @ 12.47 hrs, Volume= 0.007 af
 Outflow = 0.02 cfs @ 12.92 hrs, Volume= 0.007 af, Atten= 45%, Lag= 26.7 min
 Discarded = 0.02 cfs @ 12.92 hrs, Volume= 0.007 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 245.07' @ 12.92 hrs Surf.Area= 285 sf Storage= 20 cf

Plug-Flow detention time= 9.4 min calculated for 0.007 af (100% of inflow)
 Center-of-Mass det. time= 9.4 min (981.9 - 972.5)

Volume	Invert	Avail.Storage	Storage Description
#1	245.00'	2,920 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.00	244	0	0
246.00	791	518	518
247.00	1,182	987	1,504
248.00	1,650	1,416	2,920

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.02'
#2	Primary	247.00'	20.0' long x 12.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Discarded OutFlow Max=0.02 cfs @ 12.92 hrs HW=245.07' (Free Discharge)

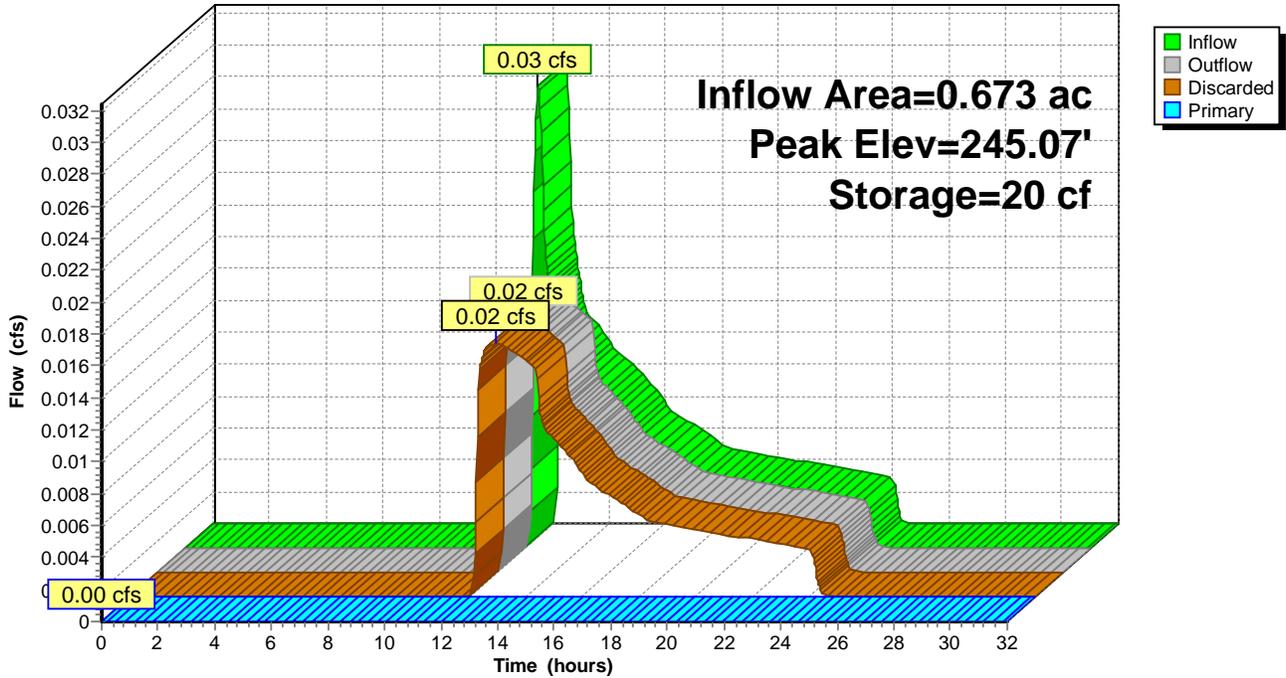
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=245.00' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: SOUTH POND

Hydrograph



Summary for Pond 3P: SOUTH CHAMBERS

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 245.00' @ 0.00 hrs Surf.Area= 0.037 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	245.00'	0.022 af	21.50'W x 74.40'L x 2.33'H Field A 0.086 af Overall - 0.020 af Embedded = 0.065 af x 33.0% Voids
#2A	245.50'	0.020 af	ADS_StormTech SC-310 +Cap x 60 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 60 Chambers in 6 Rows
		0.042 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=245.00' (Free Discharge)

↑**1=Exfiltration** (Controls 0.00 cfs)

Pond 3P: SOUTH CHAMBERS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-310 +Cap (ADS StormTech® SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

6 Rows x 34.0" Wide + 6.0" Spacing x 5 + 12.0" Side Stone x 2 = 21.50' Base Width

6.0" Base + 16.0" Chamber Height + 6.0" Cover = 2.33' Field Height

60 Chambers x 14.7 cf = 884.5 cf Chamber Storage

3,732.4 cf Field - 884.5 cf Chambers = 2,847.9 cf Stone x 33.0% Voids = 939.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,824.3 cf = 0.042 af

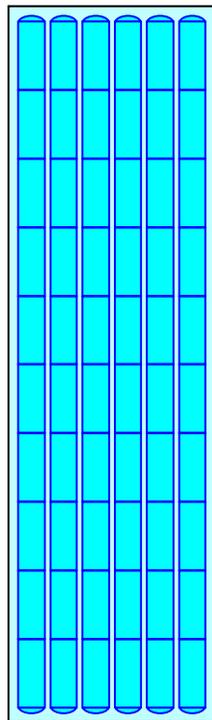
Overall Storage Efficiency = 48.9%

Overall System Size = 74.40' x 21.50' x 2.33'

60 Chambers

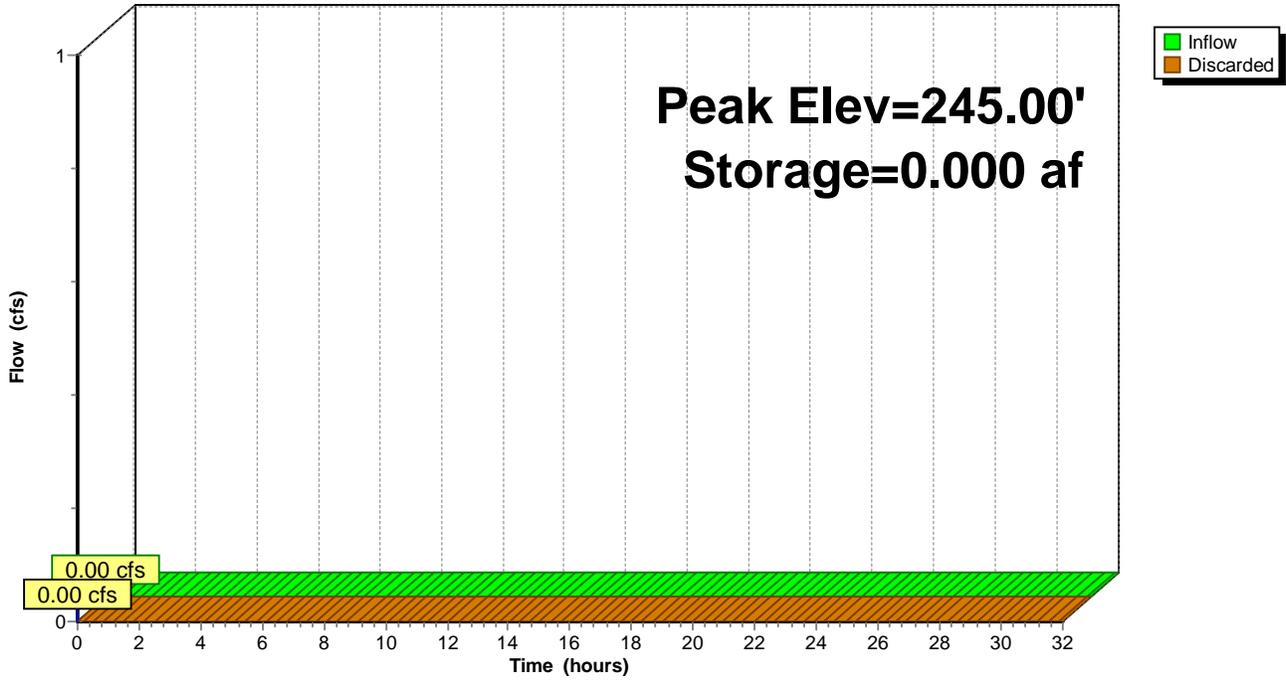
138.2 cy Field

105.5 cy Stone



Pond 3P: SOUTH CHAMBERS

Hydrograph



Summary for Pond 4P: NORTH CHAMBERS

Inflow Area = 0.945 ac, 43.99% Impervious, Inflow Depth = 0.00" for 1-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 245.00' @ 0.00 hrs Surf.Area= 0.037 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	245.00'	0.022 af	21.50"W x 74.40"L x 2.33'H Field A 0.086 af Overall - 0.020 af Embedded = 0.065 af x 33.0% Voids
#2A	245.50'	0.020 af	ADS_StormTech SC-310 +Cap x 60 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 60 Chambers in 6 Rows
		0.042 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=245.00' (Free Discharge)
 ↑**1=Exfiltration** (Passes 0.00 cfs of 0.09 cfs potential flow)

Pond 4P: NORTH CHAMBERS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-310 +Cap (ADS StormTech® SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

6 Rows x 34.0" Wide + 6.0" Spacing x 5 + 12.0" Side Stone x 2 = 21.50' Base Width

6.0" Base + 16.0" Chamber Height + 6.0" Cover = 2.33' Field Height

60 Chambers x 14.7 cf = 884.5 cf Chamber Storage

3,732.4 cf Field - 884.5 cf Chambers = 2,847.9 cf Stone x 33.0% Voids = 939.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,824.3 cf = 0.042 af

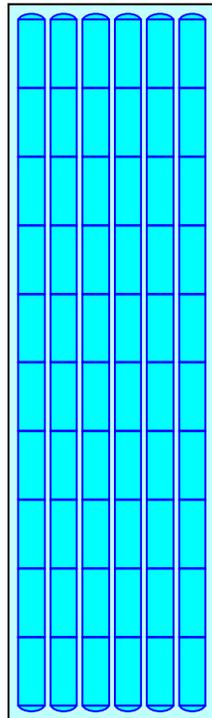
Overall Storage Efficiency = 48.9%

Overall System Size = 74.40' x 21.50' x 2.33'

60 Chambers

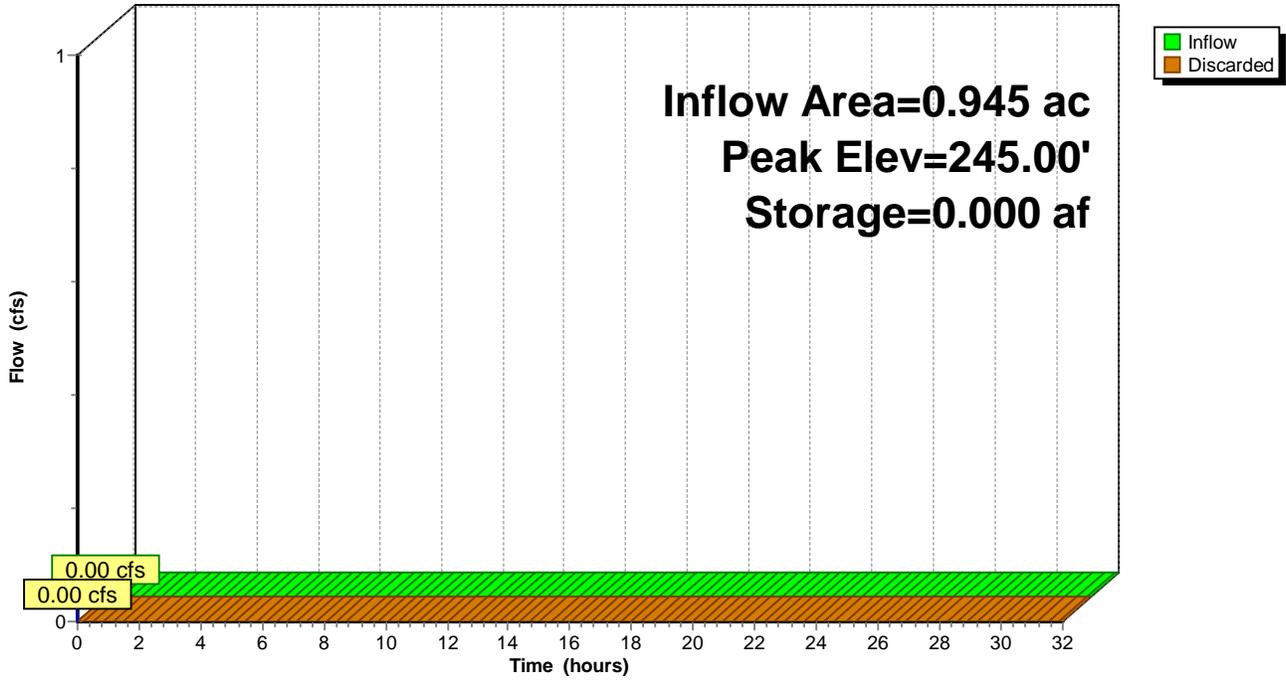
138.2 cy Field

105.5 cy Stone



Pond 4P: NORTH CHAMBERS

Hydrograph

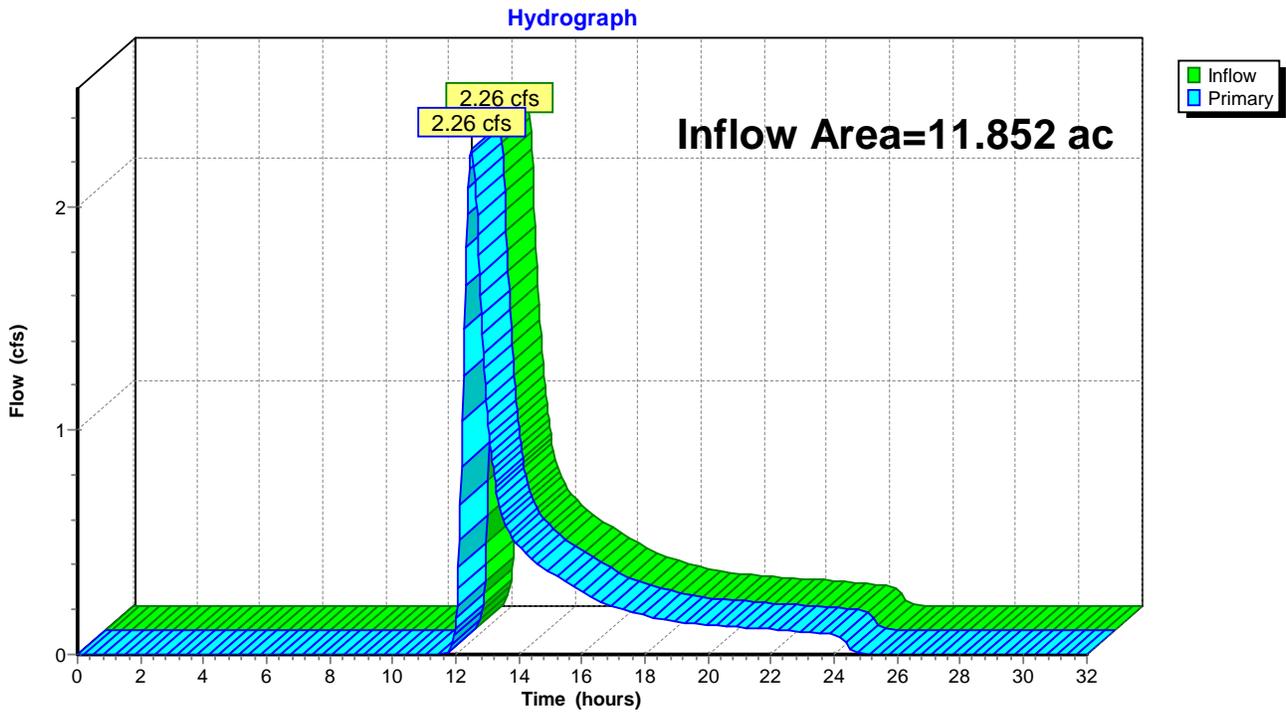


Summary for Link 3L: TOTAL EX SITE

Inflow Area = 11.852 ac, 2.29% Impervious, Inflow Depth = 0.34" for 1-Year event
Inflow = 2.26 cfs @ 12.50 hrs, Volume= 0.340 af
Primary = 2.26 cfs @ 12.50 hrs, Volume= 0.340 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs

Link 3L: TOTAL EX SITE

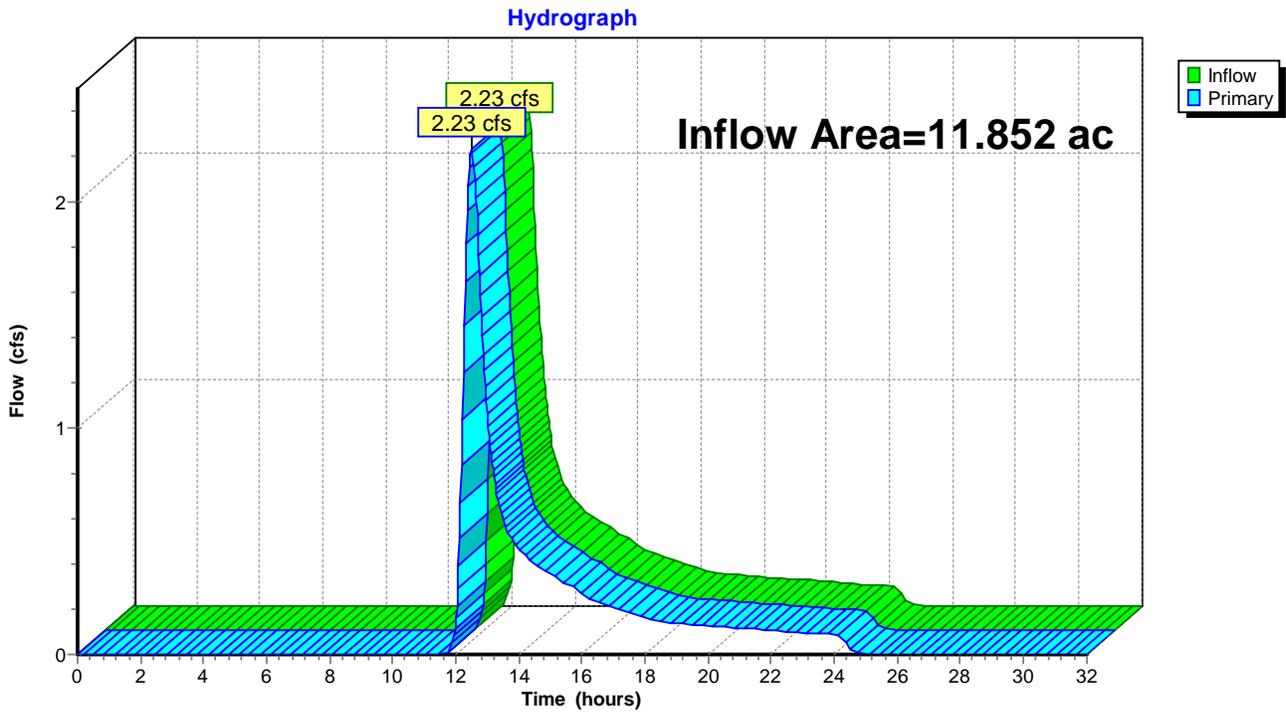


Summary for Link 4L: TOTAL PR SITE

Inflow Area = 11.852 ac, 4.72% Impervious, Inflow Depth = 0.33" for 1-Year event
Inflow = 2.23 cfs @ 12.49 hrs, Volume= 0.331 af
Primary = 2.23 cfs @ 12.49 hrs, Volume= 0.331 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs

Link 4L: TOTAL PR SITE



Time span=0.00-32.00 hrs, dt=0.03 hrs, 1068 points x 3
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR-AREA-1	Runoff Area=154,871 sf 0.00% Impervious Runoff Depth=0.23" Flow Length=634' Tc=21.1 min CN=41 Runoff=0.15 cfs 0.067 af
Subcatchment 1X: EX-AREA-1	Runoff Area=183,986 sf 0.00% Impervious Runoff Depth=0.13" Flow Length=993' Tc=22.4 min CN=38 Runoff=0.07 cfs 0.047 af
Subcatchment 2S: EX-AREA-2	Runoff Area=290,921 sf 0.00% Impervious Runoff Depth=1.97" Tc=30.0 min CN=71 Runoff=8.52 cfs 1.094 af
Subcatchment 2X: EX-AREA-2	Runoff Area=290,921 sf 0.00% Impervious Runoff Depth=1.97" Tc=30.0 min CN=71 Runoff=8.52 cfs 1.094 af
Subcatchment 3S: PR-AREA-3A	Runoff Area=21,423 sf 25.94% Impervious Runoff Depth=0.77" Flow Length=140' Tc=11.9 min UI Adjusted CN=53 Runoff=0.25 cfs 0.032 af
Subcatchment 3X: EX-AREA-3	Runoff Area=41,357 sf 28.63% Impervious Runoff Depth=0.88" Flow Length=140' Tc=11.9 min UI Adjusted CN=55 Runoff=0.61 cfs 0.070 af
Subcatchment 4S: PR-BLDG	Runoff Area=12,191 sf 41.01% Impervious Runoff Depth=1.38" Tc=5.0 min CN=63 Runoff=0.43 cfs 0.032 af
Subcatchment 5S: SOUTH PAVEMENT	Runoff Area=3,839 sf 100.00% Impervious Runoff Depth=4.56" Tc=5.0 min CN=98 Runoff=0.43 cfs 0.034 af
Subcatchment 6S: NORTH PAVEMENT	Runoff Area=3,710 sf 100.00% Impervious Runoff Depth=4.56" Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af
Subcatchment 7S: PR-AREA-3B	Runoff Area=19,934 sf 31.52% Impervious Runoff Depth=1.06" Flow Length=100' Tc=13.0 min CN=58 Runoff=0.38 cfs 0.040 af
Subcatchment 9S: SOUTH LAWN	Runoff Area=9,375 sf 0.00% Impervious Runoff Depth=0.16" Flow Length=158' Tc=9.1 min CN=39 Runoff=0.00 cfs 0.003 af
Pond 1P: WQ POND	Peak Elev=247.17' Storage=2,091 cf Inflow=1.38 cfs 0.130 af Discarded=0.14 cfs 0.130 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.130 af
Pond 2P: SOUTH POND	Peak Elev=246.22' Storage=701 cf Inflow=0.38 cfs 0.043 af Discarded=0.05 cfs 0.043 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.043 af
Pond 3P: SOUTH CHAMBERS	Peak Elev=245.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond 4P: NORTH CHAMBERS	Peak Elev=245.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Link 3L: TOTAL EX SITE	Inflow=8.96 cfs 1.211 af Primary=8.96 cfs 1.211 af

25023.00-AIRPORT ROAD-12-01-2025

Type III 24-hr 10-Year Rainfall=4.80"

Prepared by Commonwealth Engineering and Consultants, Inc.

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Link 4L: TOTAL PR SITE

Inflow=8.59 cfs 1.162 af

Primary=8.59 cfs 1.162 af

Total Runoff Area = 23.704 ac Runoff Volume = 2.545 af Average Runoff Depth = 1.29"
96.49% Pervious = 22.872 ac 3.51% Impervious = 0.832 ac

Summary for Subcatchment 1S: PR-AREA-1

Runoff = 0.15 cfs @ 12.69 hrs, Volume= 0.067 af, Depth= 0.23"

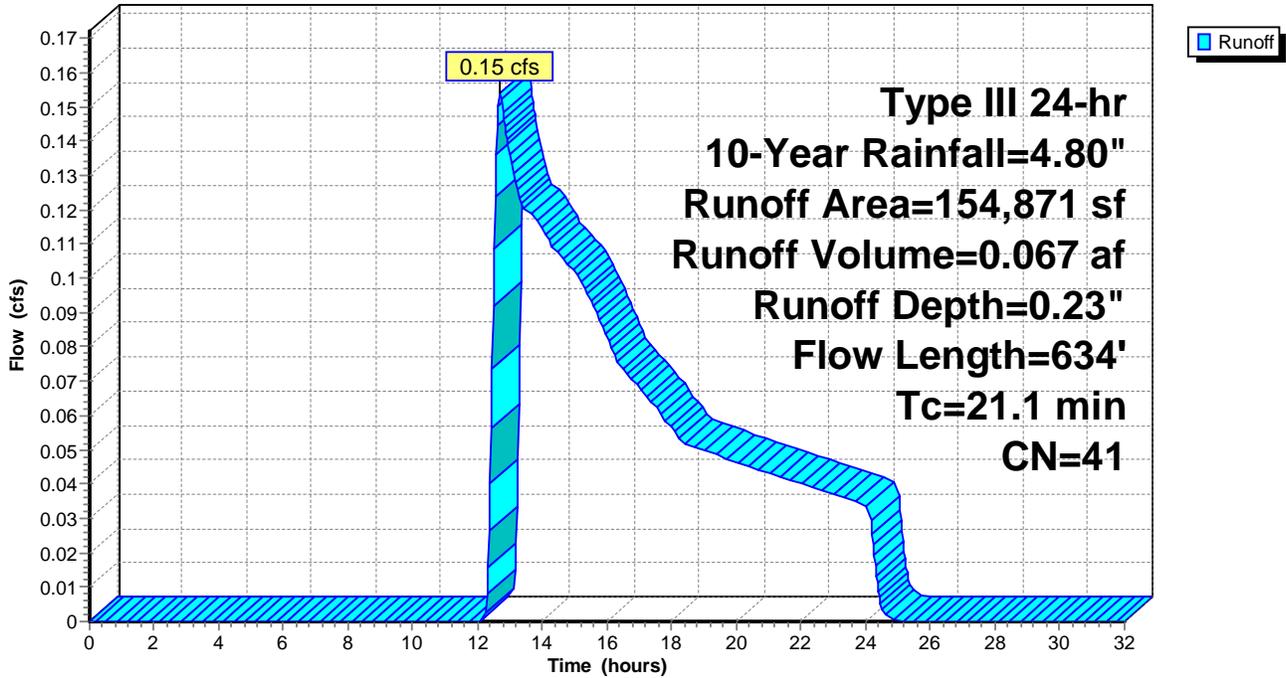
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
99,694	30	Woods, Good, HSG A
30,746	77	Woods, Good, HSG D
22,307	39	>75% Grass cover, Good, HSG A
2,124	80	>75% Grass cover, Good, HSG D
154,871	41	Weighted Average
154,871	41	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	80	0.0240	0.08		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
1.7	18	0.3300	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
0.1	21	0.3300	2.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.9	515	0.0040	3.00	30.04	Channel Flow, Area= 10.0 sf Perim= 14.0' r= 0.71' n= 0.025 Earth, clean & winding
21.1	634	Total			

Subcatchment 1S: PR-AREA-1

Hydrograph



Summary for Subcatchment 1X: EX-AREA-1

Runoff = 0.07 cfs @ 14.83 hrs, Volume= 0.047 af, Depth= 0.13"

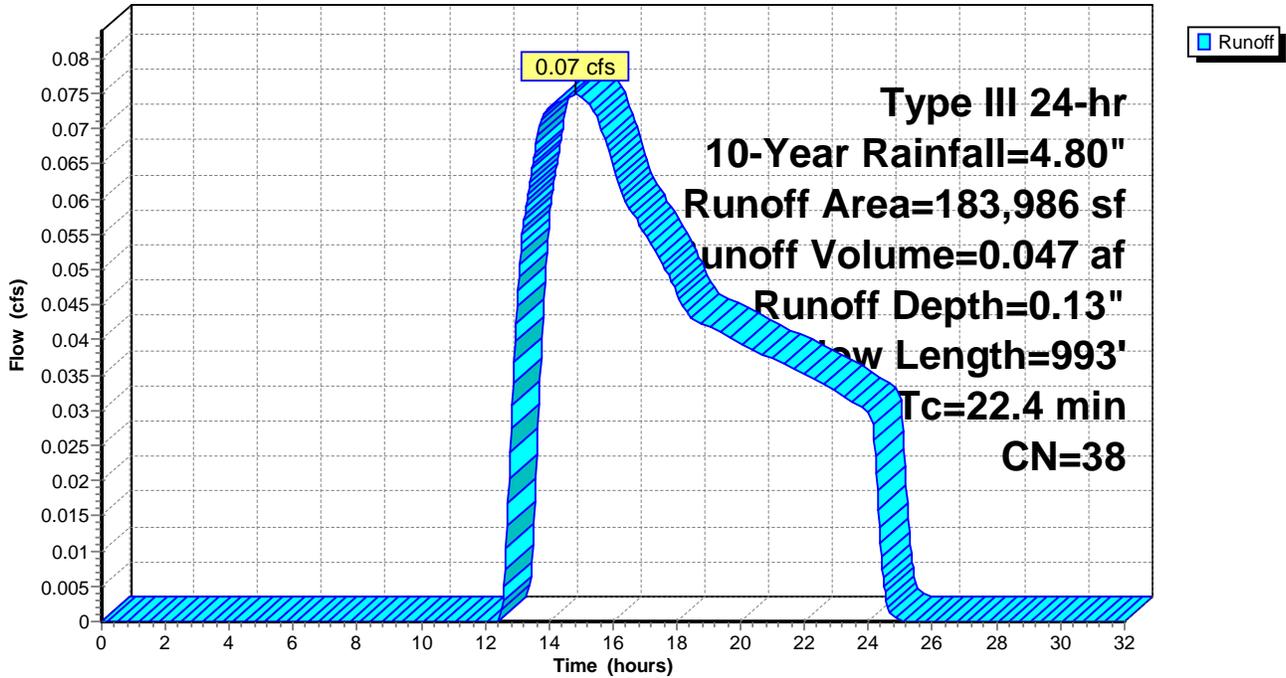
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
63,300	30	Woods, Good, HSG A
32,870	77	Woods, Good, HSG D
87,816	30	Woods, Good, HSG A
183,986	38	Weighted Average
183,986	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	20	0.0050	0.05		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.6	20	0.0050	0.58		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
9.7	60	0.0500	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
1.5	123	0.0700	1.32		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.8	770	0.0050	3.36	33.58	Channel Flow, Area= 10.0 sf Perim= 14.0' r= 0.71' n= 0.025 Earth, clean & winding
22.4	993	Total			

Subcatchment 1X: EX-AREA-1

Hydrograph



Summary for Subcatchment 2S: EX-AREA-2

Runoff = 8.52 cfs @ 12.44 hrs, Volume= 1.094 af, Depth= 1.97"

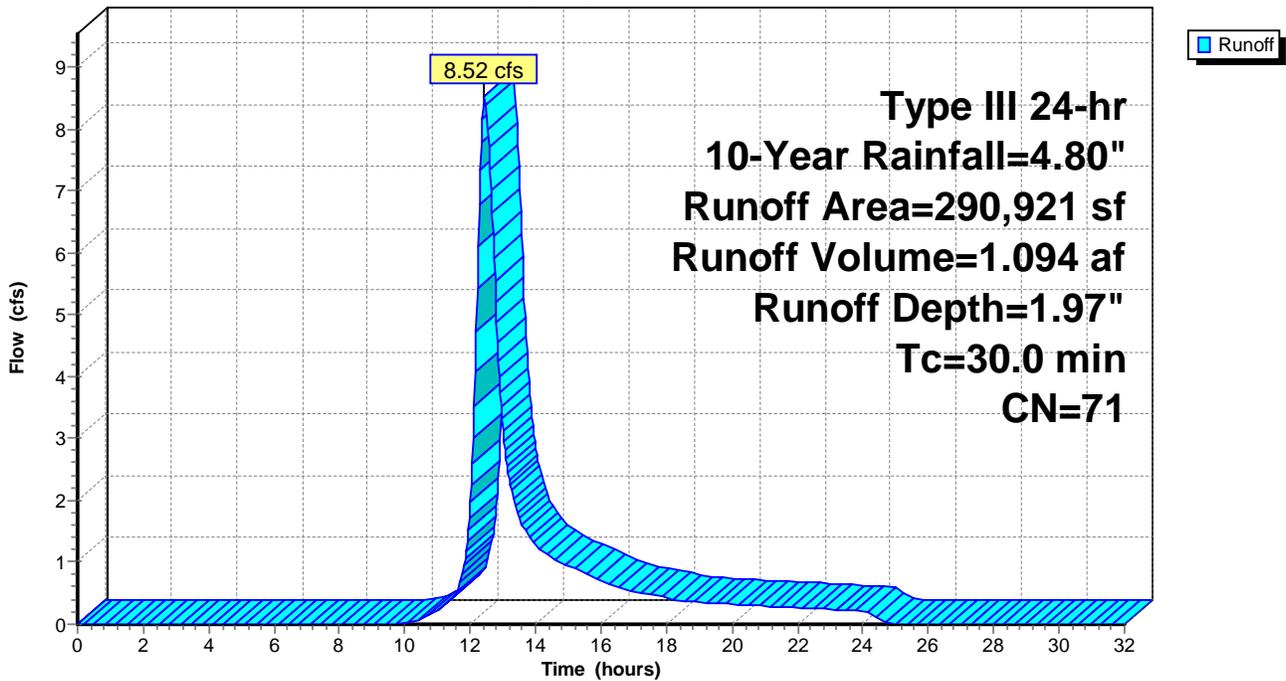
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
166,225	77	Woods, Good, HSG D
102,013	70	Woods, Good, HSG C
22,683	30	Woods, Good, HSG A
290,921	71	Weighted Average
290,921	71	100.00% Pervious Area

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

Subcatchment 2S: EX-AREA-2

Hydrograph



Summary for Subcatchment 2X: EX-AREA-2

Runoff = 8.52 cfs @ 12.44 hrs, Volume= 1.094 af, Depth= 1.97"

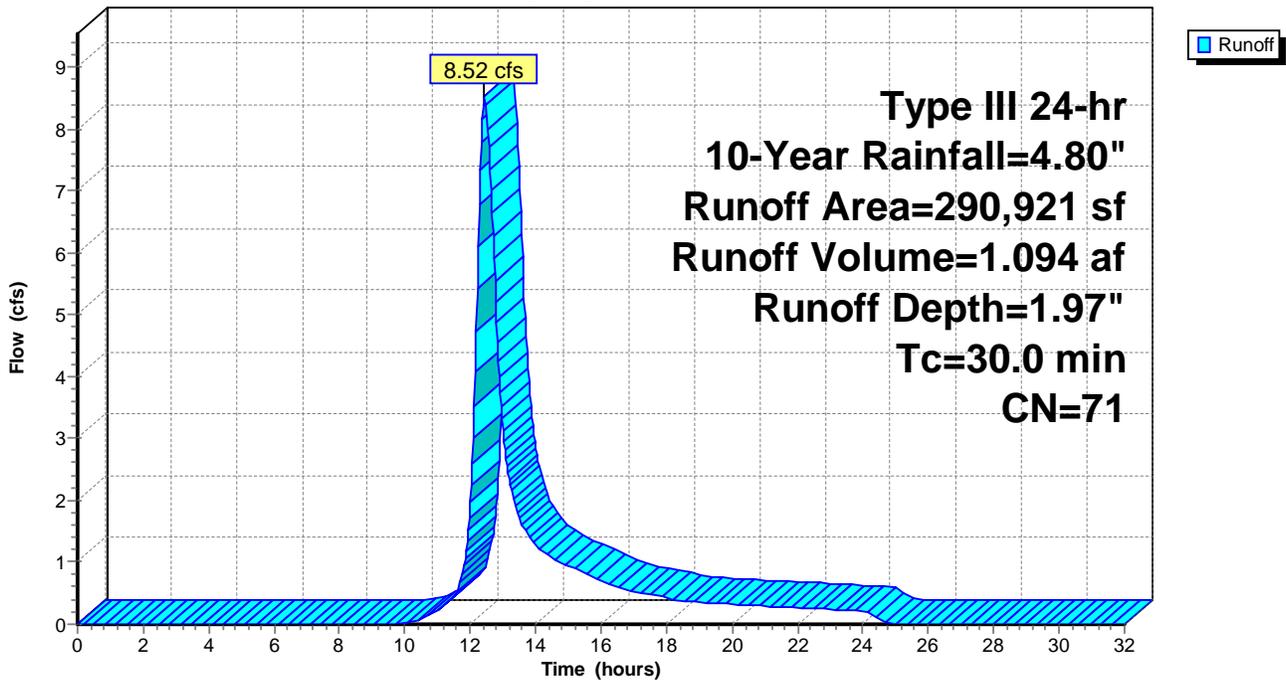
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
166,225	77	Woods, Good, HSG D
102,013	70	Woods, Good, HSG C
22,683	30	Woods, Good, HSG A
290,921	71	Weighted Average
290,921	71	100.00% Pervious Area

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

Subcatchment 2X: EX-AREA-2

Hydrograph



Summary for Subcatchment 3S: PR-AREA-3A

Runoff = 0.25 cfs @ 12.21 hrs, Volume= 0.032 af, Depth= 0.77"

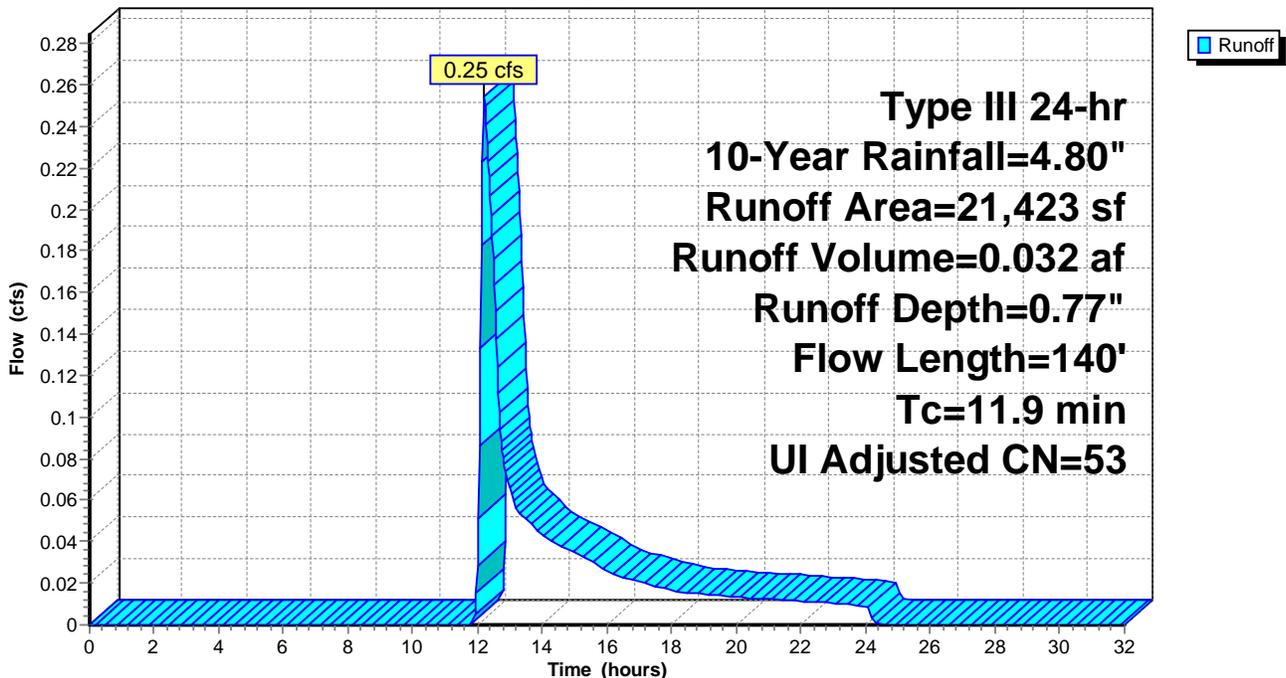
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Adj	Description
4,752	98		Paved parking, HSG A
806	98		Unconnected pavement, HSG A
15,865	39		>75% Grass cover, Good, HSG A
21,423	54	53	Weighted Average, UI Adjusted
15,865	39	39	74.06% Pervious Area
5,558	98	98	25.94% Impervious Area
806			14.50% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	76	0.0200	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	24	0.0200	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	140	Total			

Subcatchment 3S: PR-AREA-3A

Hydrograph



Summary for Subcatchment 3X: EX-AREA-3

Runoff = 0.61 cfs @ 12.20 hrs, Volume= 0.070 af, Depth= 0.88"

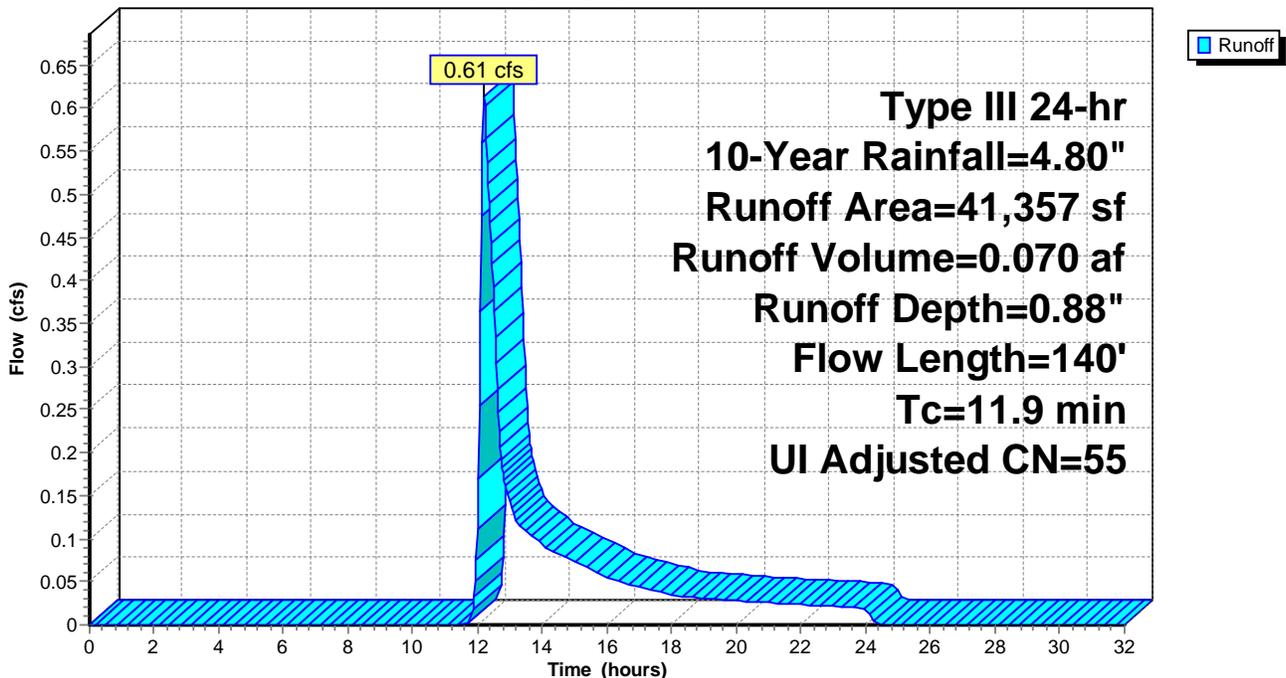
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Adj	Description
10,245	98		Paved parking, HSG A
1,596	98		Unconnected pavement, HSG A
29,516	39		>75% Grass cover, Good, HSG A
41,357	56	55	Weighted Average, UI Adjusted
29,516	39	39	71.37% Pervious Area
11,841	98	98	28.63% Impervious Area
1,596			13.48% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	76	0.0200	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	24	0.0200	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	140	Total			

Subcatchment 3X: EX-AREA-3

Hydrograph



Summary for Subcatchment 4S: PR-BLDG

Runoff = 0.43 cfs @ 12.09 hrs, Volume= 0.032 af, Depth= 1.38"

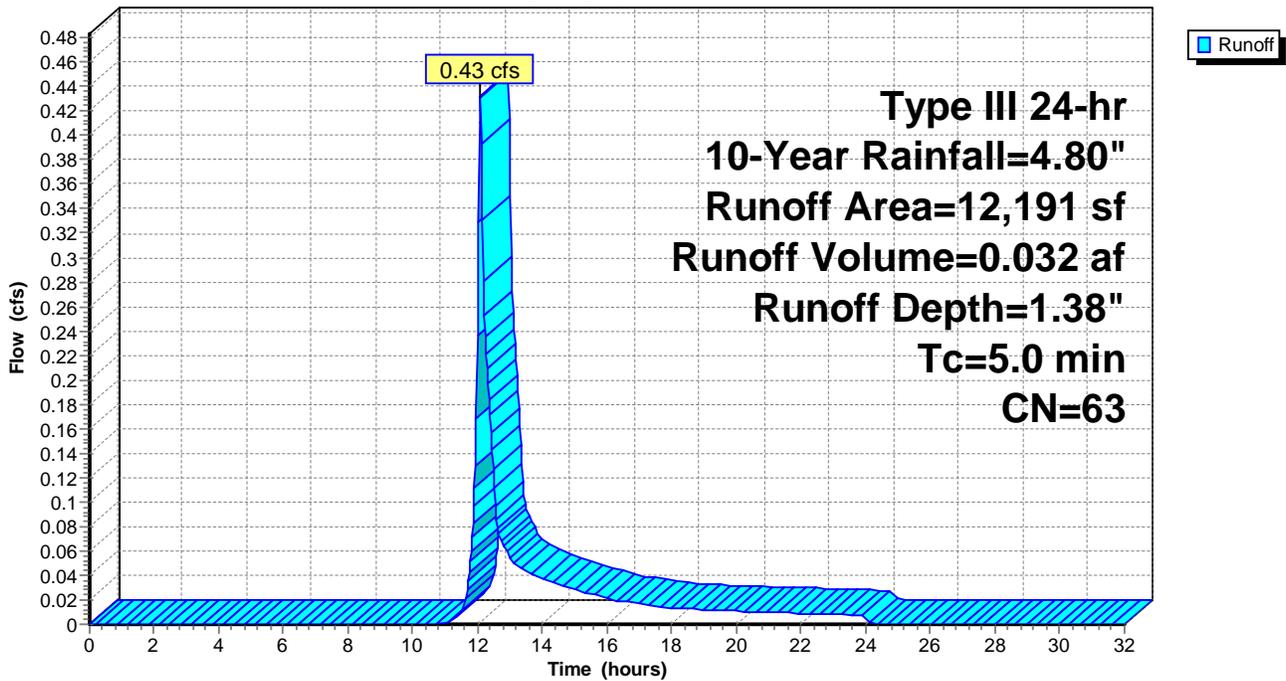
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
5,000	98	Roofs, HSG A
7,191	39	>75% Grass cover, Good, HSG A
12,191	63	Weighted Average
7,191	39	58.99% Pervious Area
5,000	98	41.01% Impervious Area

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

Subcatchment 4S: PR-BLDG

Hydrograph



Summary for Subcatchment 5S: SOUTH PAVEMENT

Runoff = 0.43 cfs @ 12.07 hrs, Volume= 0.034 af, Depth= 4.56"

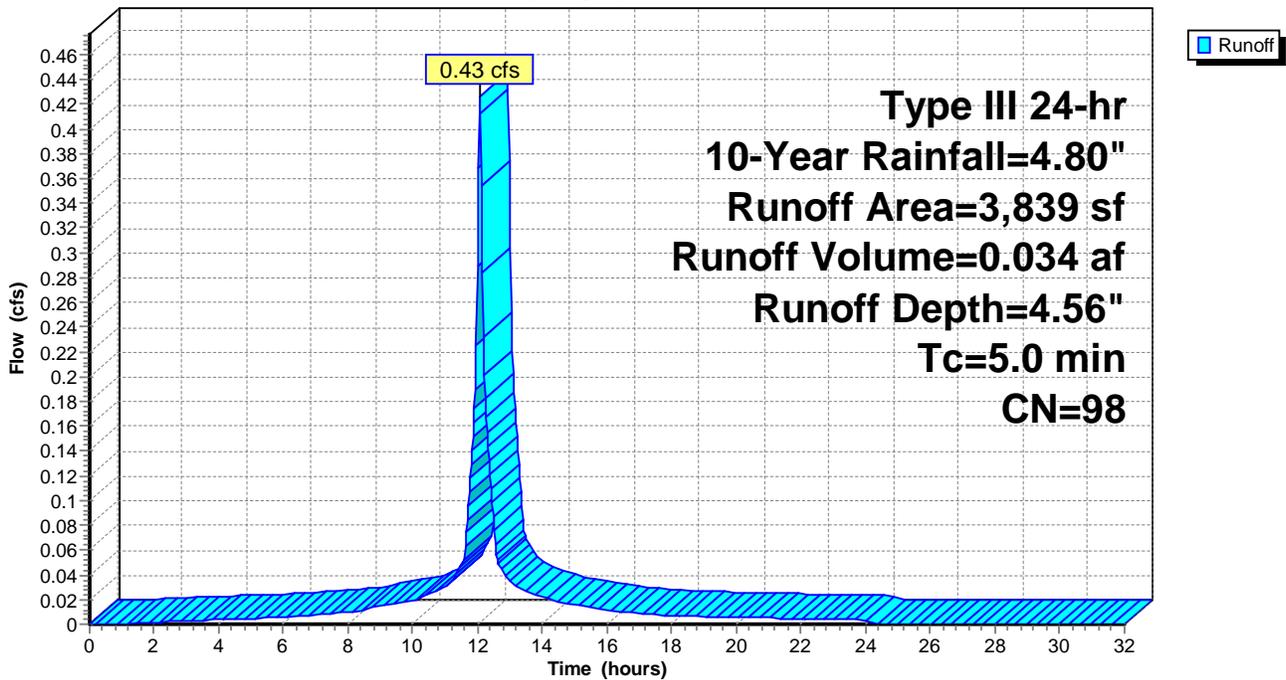
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
3,839	98	Paved parking, HSG A
3,839	98	100.00% Impervious Area

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

Subcatchment 5S: SOUTH PAVEMENT

Hydrograph



Summary for Subcatchment 6S: NORTH PAVEMENT

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 0.032 af, Depth= 4.56"

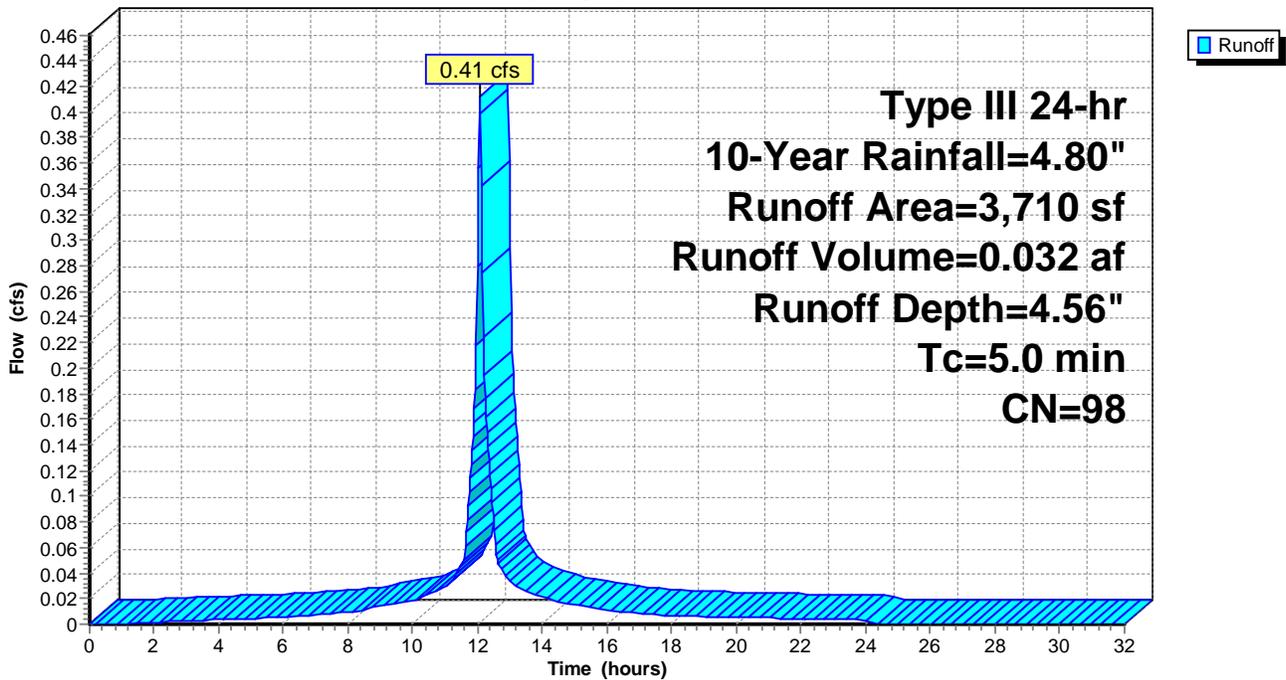
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
3,710	98	Paved parking, HSG A
3,710	98	100.00% Impervious Area

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

Subcatchment 6S: NORTH PAVEMENT

Hydrograph



Summary for Subcatchment 7S: PR-AREA-3B

Runoff = 0.38 cfs @ 12.21 hrs, Volume= 0.040 af, Depth= 1.06"

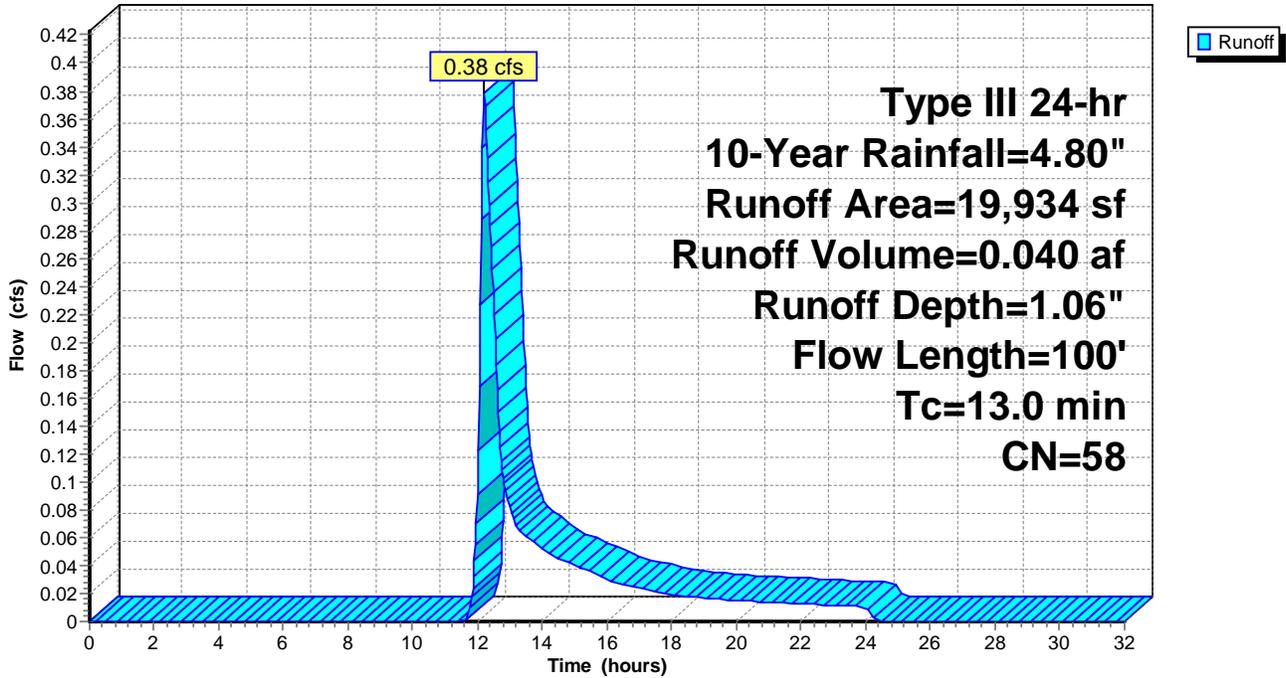
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
5,493	98	Paved parking, HSG A
790	98	Unconnected pavement, HSG A
13,651	39	>75% Grass cover, Good, HSG A
19,934	58	Weighted Average
13,651	39	68.48% Pervious Area
6,283	98	31.52% Impervious Area
790		12.57% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	20	0.0050	0.05		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.6	20	0.0050	0.58		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
4.1	36	0.0555	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.5	24	0.3300	0.27		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
13.0	100	Total			

Subcatchment 7S: PR-AREA-3B

Hydrograph



Summary for Subcatchment 9S: SOUTH LAWN

Runoff = 0.00 cfs @ 13.72 hrs, Volume= 0.003 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 10-Year Rainfall=4.80"

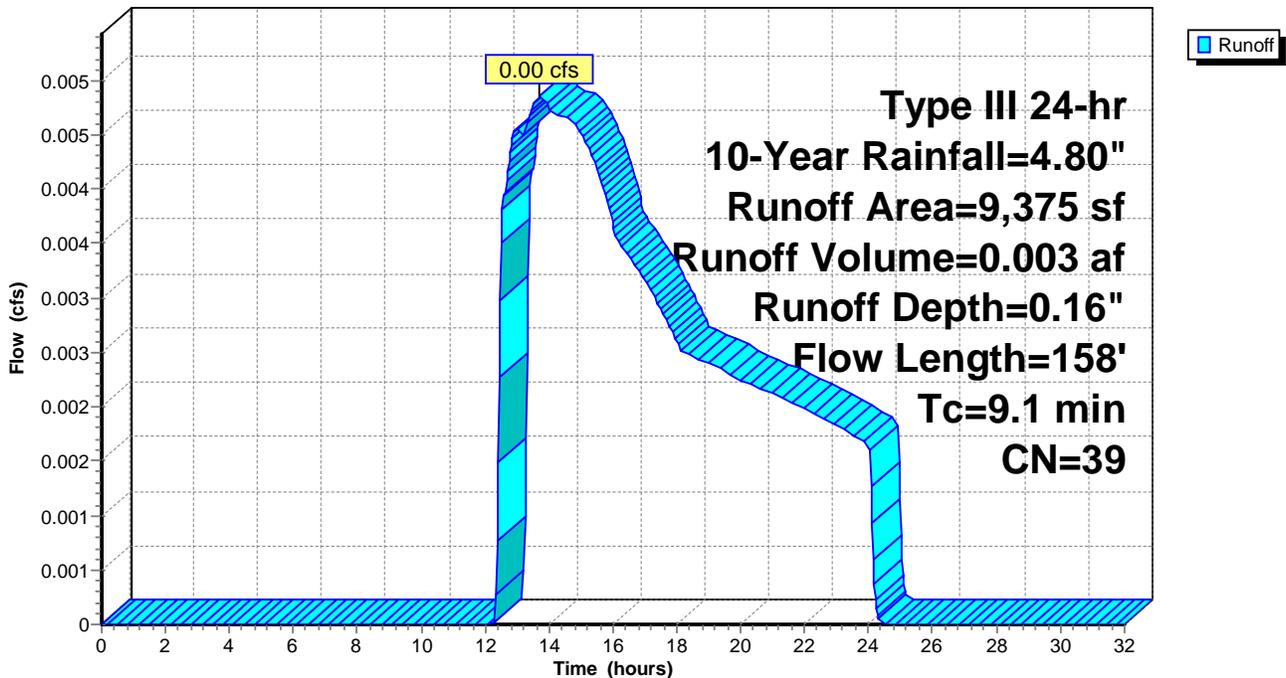
Area (sf)	CN	Description
9,375	39	>75% Grass cover, Good, HSG A
9,375	39	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.0700	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	36	0.0556	1.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	22	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps

9.1 158 Total

Subcatchment 9S: SOUTH LAWN

Hydrograph



Summary for Pond 1P: WQ POND

Inflow Area = 0.945 ac, 43.99% Impervious, Inflow Depth = 1.65" for 10-Year event
 Inflow = 1.38 cfs @ 12.08 hrs, Volume= 0.130 af
 Outflow = 0.14 cfs @ 13.70 hrs, Volume= 0.130 af, Atten= 90%, Lag= 97.0 min
 Discarded = 0.14 cfs @ 13.70 hrs, Volume= 0.130 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 247.17' @ 13.70 hrs Surf.Area= 2,467 sf Storage= 2,091 cf

Plug-Flow detention time= 155.1 min calculated for 0.130 af (100% of inflow)
 Center-of-Mass det. time= 155.0 min (972.4 - 817.4)

Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	8,240 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.00	1,070	0	0
247.00	2,305	1,688	1,688
248.00	3,262	2,784	4,471
249.00	4,275	3,769	8,240

Device	Routing	Invert	Outlet Devices
#1	Discarded	246.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'
#2	Primary	248.00'	2.5" x 2.5" Horiz. Orifice/Grate X 6.00 columns X 6 rows C= 0.600 Limited to weir flow at low heads
#3	Secondary	248.00'	2.5" x 2.5" Horiz. Orifice/Grate X 6.00 columns X 6 rows C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.14 cfs @ 13.70 hrs HW=247.17' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=246.00' TW=245.00' (Dynamic Tailwater)

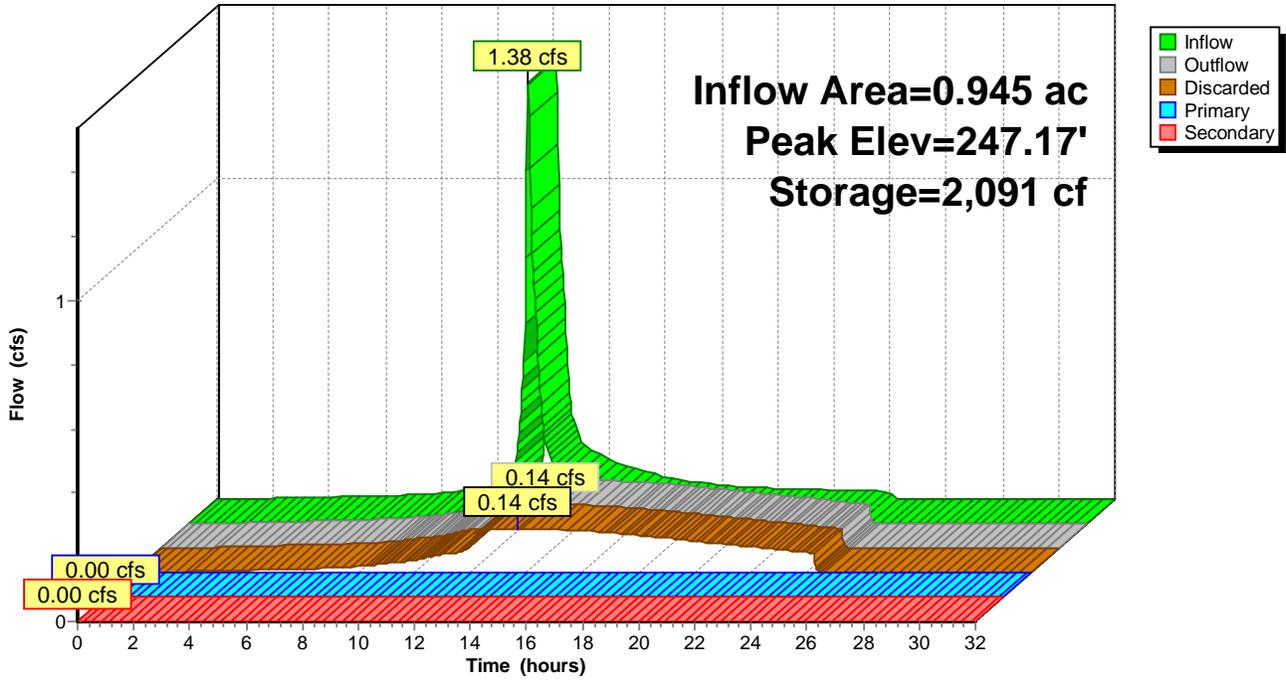
↑2=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=246.00' TW=245.00' (Dynamic Tailwater)

↑3=Orifice/Grate (Controls 0.00 cfs)

Pond 1P: WQ POND

Hydrograph



Summary for Pond 2P: SOUTH POND

Inflow Area = 0.673 ac, 21.44% Impervious, Inflow Depth = 0.77" for 10-Year event
 Inflow = 0.38 cfs @ 12.21 hrs, Volume= 0.043 af
 Outflow = 0.05 cfs @ 14.61 hrs, Volume= 0.043 af, Atten= 87%, Lag= 144.2 min
 Discarded = 0.05 cfs @ 14.61 hrs, Volume= 0.043 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 246.22' @ 14.61 hrs Surf.Area= 877 sf Storage= 701 cf

Plug-Flow detention time= 178.7 min calculated for 0.043 af (100% of inflow)
 Center-of-Mass det. time= 178.6 min (1,079.5 - 900.9)

Volume	Invert	Avail.Storage	Storage Description
#1	245.00'	2,920 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.00	244	0	0
246.00	791	518	518
247.00	1,182	987	1,504
248.00	1,650	1,416	2,920

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.02'
#2	Primary	247.00'	20.0' long x 12.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Discarded OutFlow Max=0.05 cfs @ 14.61 hrs HW=246.22' (Free Discharge)

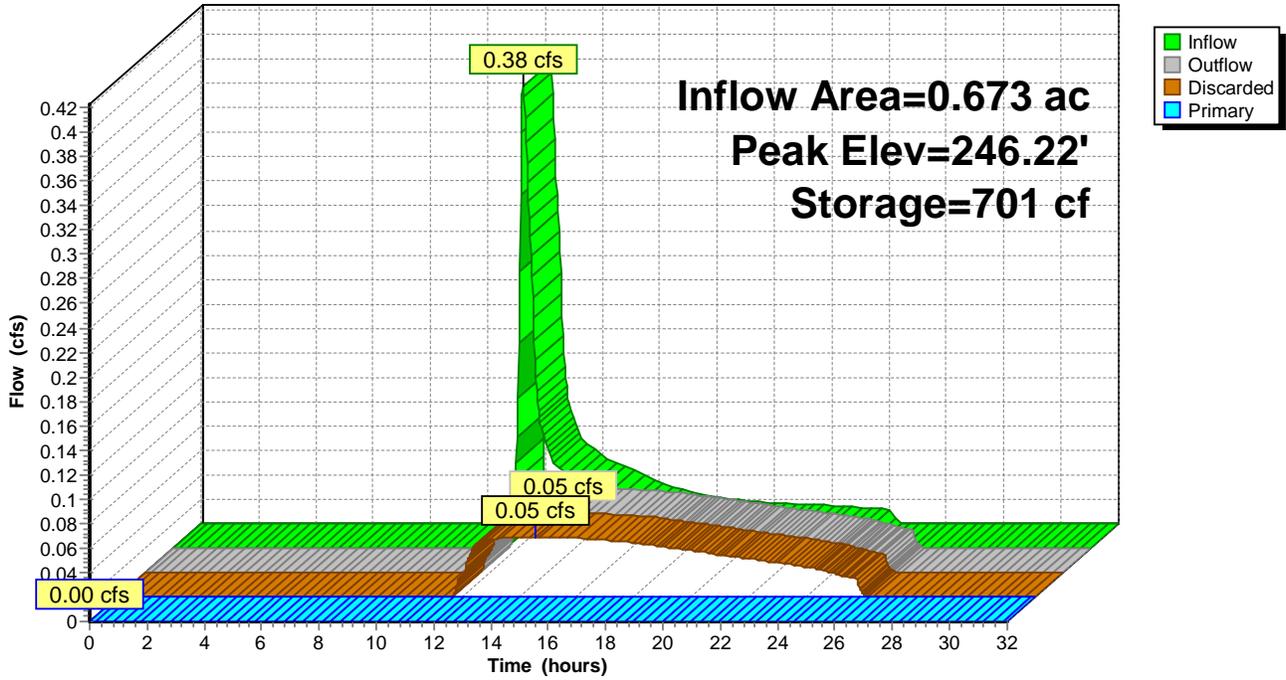
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=245.00' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: SOUTH POND

Hydrograph



Summary for Pond 3P: SOUTH CHAMBERS

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 245.00' @ 0.00 hrs Surf.Area= 0.037 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	245.00'	0.022 af	21.50'W x 74.40'L x 2.33'H Field A 0.086 af Overall - 0.020 af Embedded = 0.065 af x 33.0% Voids
#2A	245.50'	0.020 af	ADS_StormTech SC-310 +Cap x 60 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 60 Chambers in 6 Rows
		0.042 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=245.00' (Free Discharge)

↑**1=Exfiltration** (Controls 0.00 cfs)

Pond 3P: SOUTH CHAMBERS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-310 +Cap (ADS StormTech® SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

6 Rows x 34.0" Wide + 6.0" Spacing x 5 + 12.0" Side Stone x 2 = 21.50' Base Width

6.0" Base + 16.0" Chamber Height + 6.0" Cover = 2.33' Field Height

60 Chambers x 14.7 cf = 884.5 cf Chamber Storage

3,732.4 cf Field - 884.5 cf Chambers = 2,847.9 cf Stone x 33.0% Voids = 939.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,824.3 cf = 0.042 af

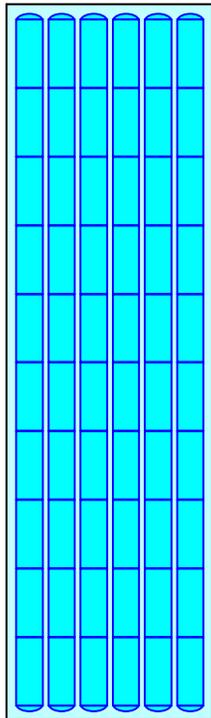
Overall Storage Efficiency = 48.9%

Overall System Size = 74.40' x 21.50' x 2.33'

60 Chambers

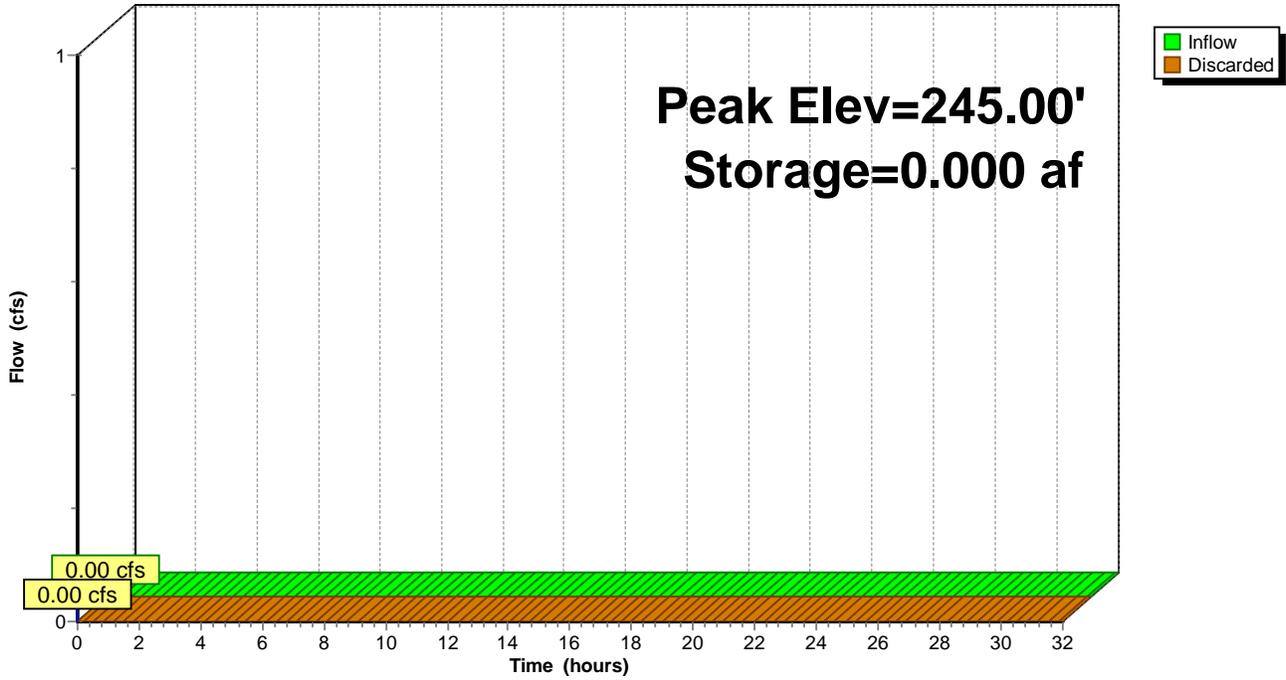
138.2 cy Field

105.5 cy Stone



Pond 3P: SOUTH CHAMBERS

Hydrograph



Summary for Pond 4P: NORTH CHAMBERS

Inflow Area = 0.945 ac, 43.99% Impervious, Inflow Depth = 0.00" for 10-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 245.00' @ 0.00 hrs Surf.Area= 0.037 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	245.00'	0.022 af	21.50"W x 74.40"L x 2.33'H Field A 0.086 af Overall - 0.020 af Embedded = 0.065 af x 33.0% Voids
#2A	245.50'	0.020 af	ADS_StormTech SC-310 +Cap x 60 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 60 Chambers in 6 Rows
		0.042 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=245.00' (Free Discharge)
 ↑ **1=Exfiltration** (Passes 0.00 cfs of 0.09 cfs potential flow)

Pond 4P: NORTH CHAMBERS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-310 +Cap (ADS StormTech® SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

6 Rows x 34.0" Wide + 6.0" Spacing x 5 + 12.0" Side Stone x 2 = 21.50' Base Width

6.0" Base + 16.0" Chamber Height + 6.0" Cover = 2.33' Field Height

60 Chambers x 14.7 cf = 884.5 cf Chamber Storage

3,732.4 cf Field - 884.5 cf Chambers = 2,847.9 cf Stone x 33.0% Voids = 939.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,824.3 cf = 0.042 af

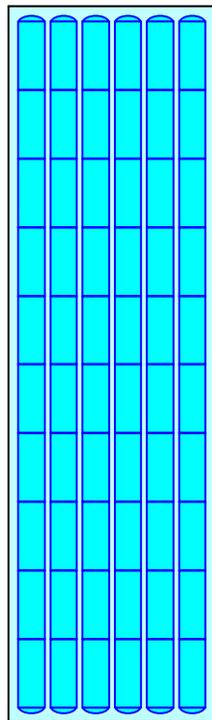
Overall Storage Efficiency = 48.9%

Overall System Size = 74.40' x 21.50' x 2.33'

60 Chambers

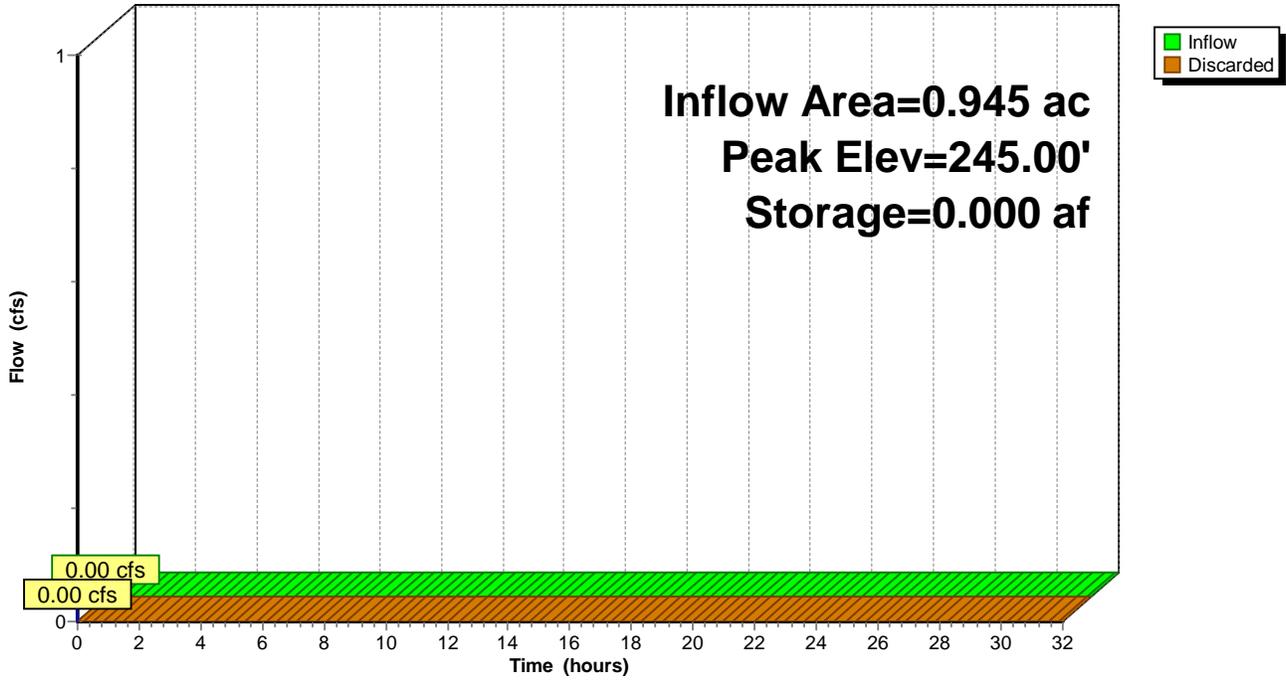
138.2 cy Field

105.5 cy Stone



Pond 4P: NORTH CHAMBERS

Hydrograph



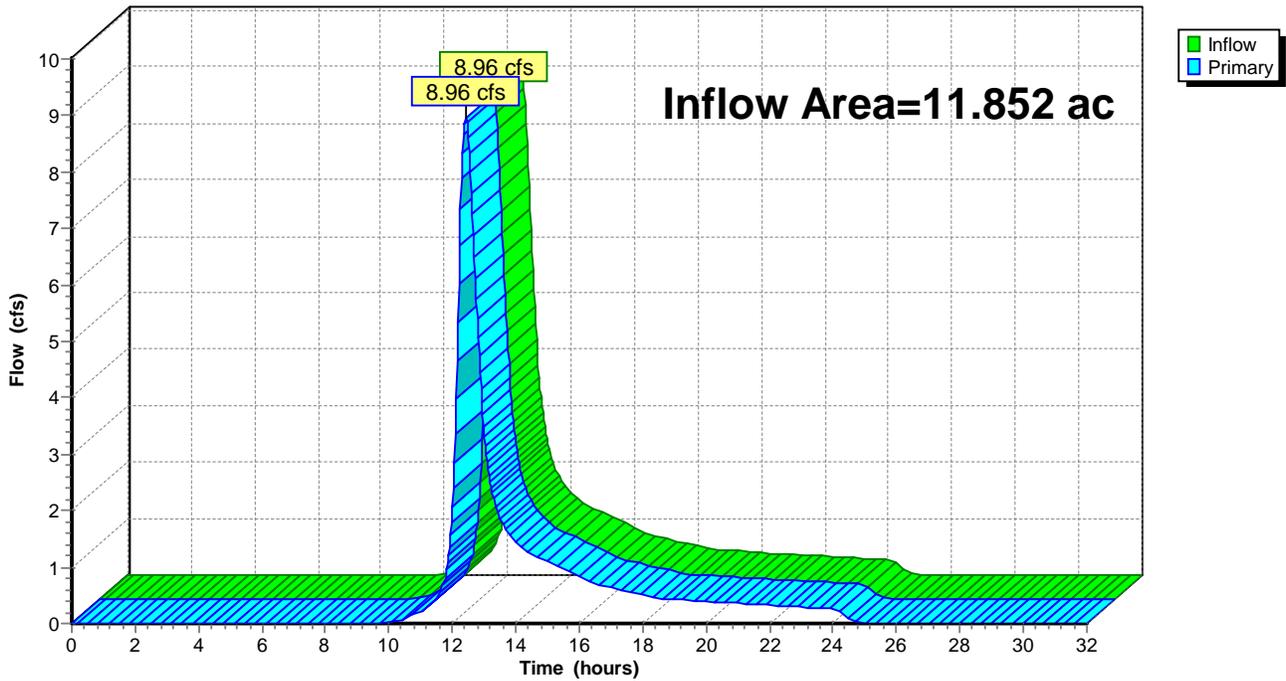
Summary for Link 3L: TOTAL EX SITE

Inflow Area = 11.852 ac, 2.29% Impervious, Inflow Depth = 1.23" for 10-Year event
Inflow = 8.96 cfs @ 12.43 hrs, Volume= 1.211 af
Primary = 8.96 cfs @ 12.43 hrs, Volume= 1.211 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs

Link 3L: TOTAL EX SITE

Hydrograph



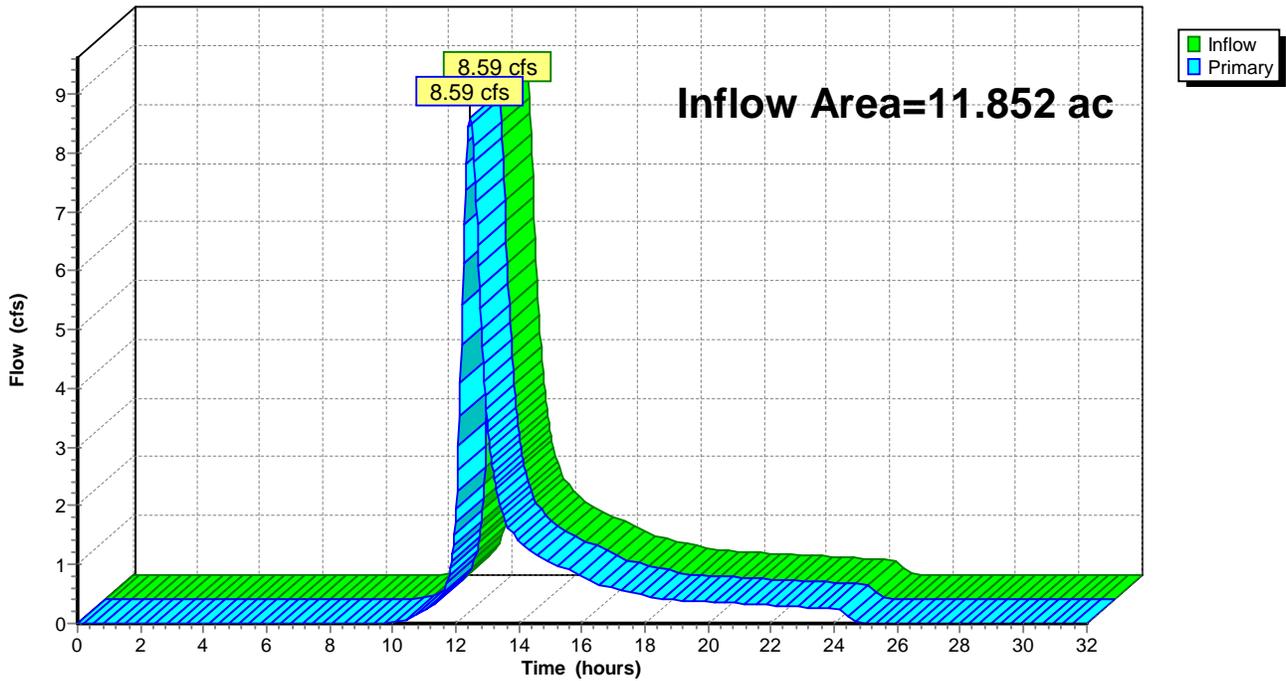
Summary for Link 4L: TOTAL PR SITE

Inflow Area = 11.852 ac, 4.72% Impervious, Inflow Depth = 1.18" for 10-Year event
Inflow = 8.59 cfs @ 12.44 hrs, Volume= 1.162 af
Primary = 8.59 cfs @ 12.44 hrs, Volume= 1.162 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs

Link 4L: TOTAL PR SITE

Hydrograph



Time span=0.00-32.00 hrs, dt=0.03 hrs, 1068 points x 3
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: PR-AREA-1	Runoff Area=154,871 sf 0.00% Impervious Runoff Depth=1.68" Flow Length=634' Tc=21.1 min CN=41 Runoff=3.65 cfs 0.497 af
Subcatchment 1X: EX-AREA-1	Runoff Area=183,986 sf 0.00% Impervious Runoff Depth=1.36" Flow Length=993' Tc=22.4 min CN=38 Runoff=3.09 cfs 0.478 af
Subcatchment 2S: EX-AREA-2	Runoff Area=290,921 sf 0.00% Impervious Runoff Depth=5.19" Tc=30.0 min CN=71 Runoff=22.96 cfs 2.890 af
Subcatchment 2X: EX-AREA-2	Runoff Area=290,921 sf 0.00% Impervious Runoff Depth=5.19" Tc=30.0 min CN=71 Runoff=22.96 cfs 2.890 af
Subcatchment 3S: PR-AREA-3A	Runoff Area=21,423 sf 25.94% Impervious Runoff Depth=3.04" Flow Length=140' Tc=11.9 min UI Adjusted CN=53 Runoff=1.37 cfs 0.124 af
Subcatchment 3X: EX-AREA-3	Runoff Area=41,357 sf 28.63% Impervious Runoff Depth=3.27" Flow Length=140' Tc=11.9 min UI Adjusted CN=55 Runoff=2.89 cfs 0.259 af
Subcatchment 4S: PR-BLDG	Runoff Area=12,191 sf 41.01% Impervious Runoff Depth=4.23" Tc=5.0 min CN=63 Runoff=1.42 cfs 0.099 af
Subcatchment 5S: SOUTH PAVEMENT	Runoff Area=3,839 sf 100.00% Impervious Runoff Depth=8.46" Tc=5.0 min CN=98 Runoff=0.78 cfs 0.062 af
Subcatchment 6S: NORTH PAVEMENT	Runoff Area=3,710 sf 100.00% Impervious Runoff Depth=8.46" Tc=5.0 min CN=98 Runoff=0.75 cfs 0.060 af
Subcatchment 7S: PR-AREA-3B	Runoff Area=19,934 sf 31.52% Impervious Runoff Depth=3.63" Flow Length=100' Tc=13.0 min CN=58 Runoff=1.52 cfs 0.138 af
Subcatchment 9S: SOUTH LAWN	Runoff Area=9,375 sf 0.00% Impervious Runoff Depth=1.46" Flow Length=158' Tc=9.1 min CN=39 Runoff=0.24 cfs 0.026 af
Pond 1P: WQ POND	Peak Elev=248.05' Storage=4,641 cf Inflow=3.91 cfs 0.345 af Discarded=0.18 cfs 0.257 af Primary=1.15 cfs 0.044 af Secondary=1.15 cfs 0.044 af Outflow=2.49 cfs 0.345 af
Pond 2P: SOUTH POND	Peak Elev=247.10' Storage=1,620 cf Inflow=1.76 cfs 0.165 af Discarded=0.07 cfs 0.093 af Primary=1.53 cfs 0.071 af Outflow=1.60 cfs 0.164 af
Pond 3P: SOUTH CHAMBERS	Peak Elev=246.30' Storage=0.027 af Inflow=1.15 cfs 0.044 af Outflow=0.09 cfs 0.044 af
Pond 4P: NORTH CHAMBERS	Peak Elev=246.30' Storage=0.027 af Inflow=1.15 cfs 0.044 af Outflow=0.09 cfs 0.044 af
Link 3L: TOTAL EX SITE	Inflow=27.71 cfs 3.627 af Primary=27.71 cfs 3.627 af

Link 4L: TOTAL PR SITE

Inflow=27.60 cfs 3.458 af

Primary=27.60 cfs 3.458 af

Total Runoff Area = 23.704 ac Runoff Volume = 7.524 af Average Runoff Depth = 3.81"
96.49% Pervious = 22.872 ac 3.51% Impervious = 0.832 ac

Summary for Subcatchment 1S: PR-AREA-1

Runoff = 3.65 cfs @ 12.36 hrs, Volume= 0.497 af, Depth= 1.68"

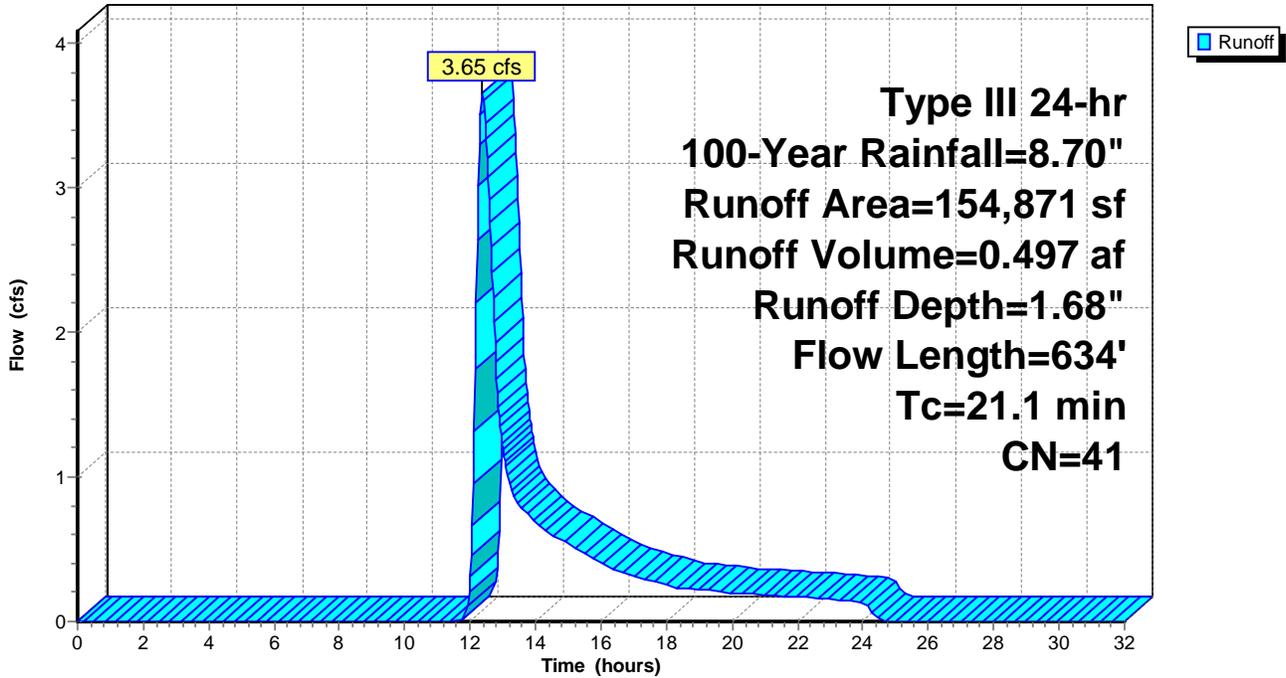
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

Area (sf)	CN	Description
99,694	30	Woods, Good, HSG A
30,746	77	Woods, Good, HSG D
22,307	39	>75% Grass cover, Good, HSG A
2,124	80	>75% Grass cover, Good, HSG D
154,871	41	Weighted Average
154,871	41	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	80	0.0240	0.08		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
1.7	18	0.3300	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
0.1	21	0.3300	2.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.9	515	0.0040	3.00	30.04	Channel Flow, Area= 10.0 sf Perim= 14.0' r= 0.71' n= 0.025 Earth, clean & winding
21.1	634	Total			

Subcatchment 1S: PR-AREA-1

Hydrograph



Summary for Subcatchment 1X: EX-AREA-1

Runoff = 3.09 cfs @ 12.42 hrs, Volume= 0.478 af, Depth= 1.36"

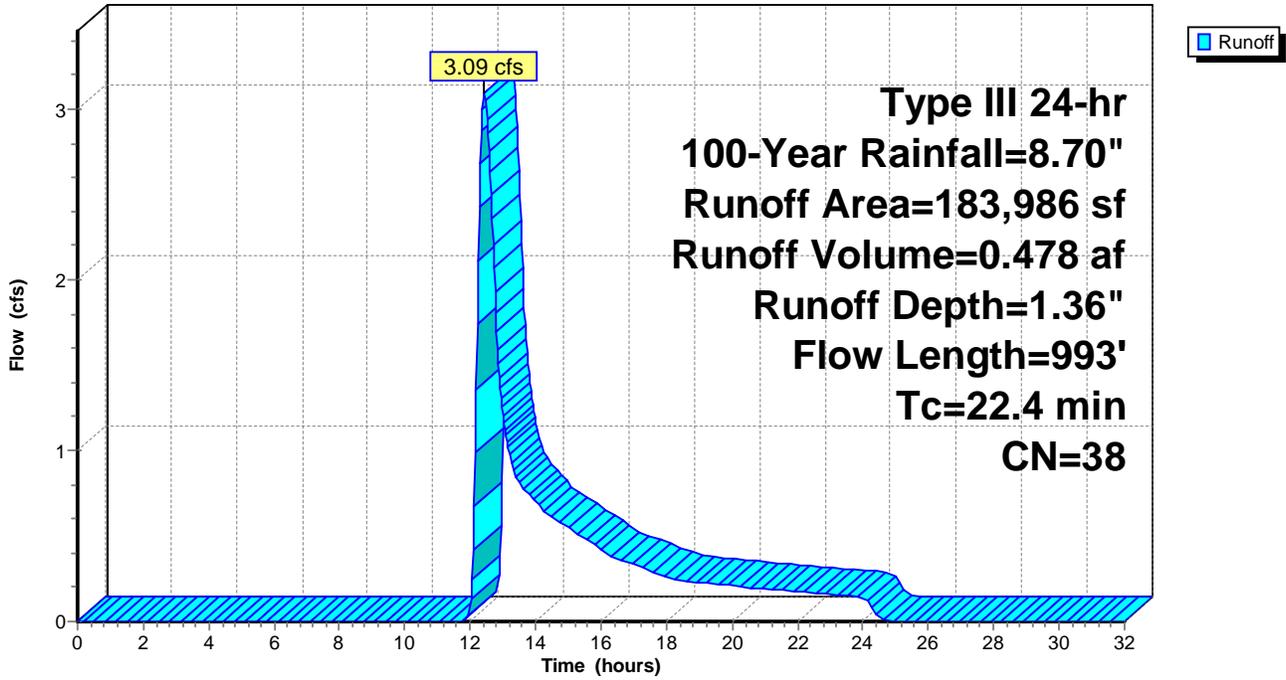
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

Area (sf)	CN	Description
63,300	30	Woods, Good, HSG A
32,870	77	Woods, Good, HSG D
87,816	30	Woods, Good, HSG A
183,986	38	Weighted Average
183,986	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	20	0.0050	0.05		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.6	20	0.0050	0.58		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
9.7	60	0.0500	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.30"
1.5	123	0.0700	1.32		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.8	770	0.0050	3.36	33.58	Channel Flow, Area= 10.0 sf Perim= 14.0' r= 0.71' n= 0.025 Earth, clean & winding
22.4	993	Total			

Subcatchment 1X: EX-AREA-1

Hydrograph



Summary for Subcatchment 2S: EX-AREA-2

Runoff = 22.96 cfs @ 12.42 hrs, Volume= 2.890 af, Depth= 5.19"

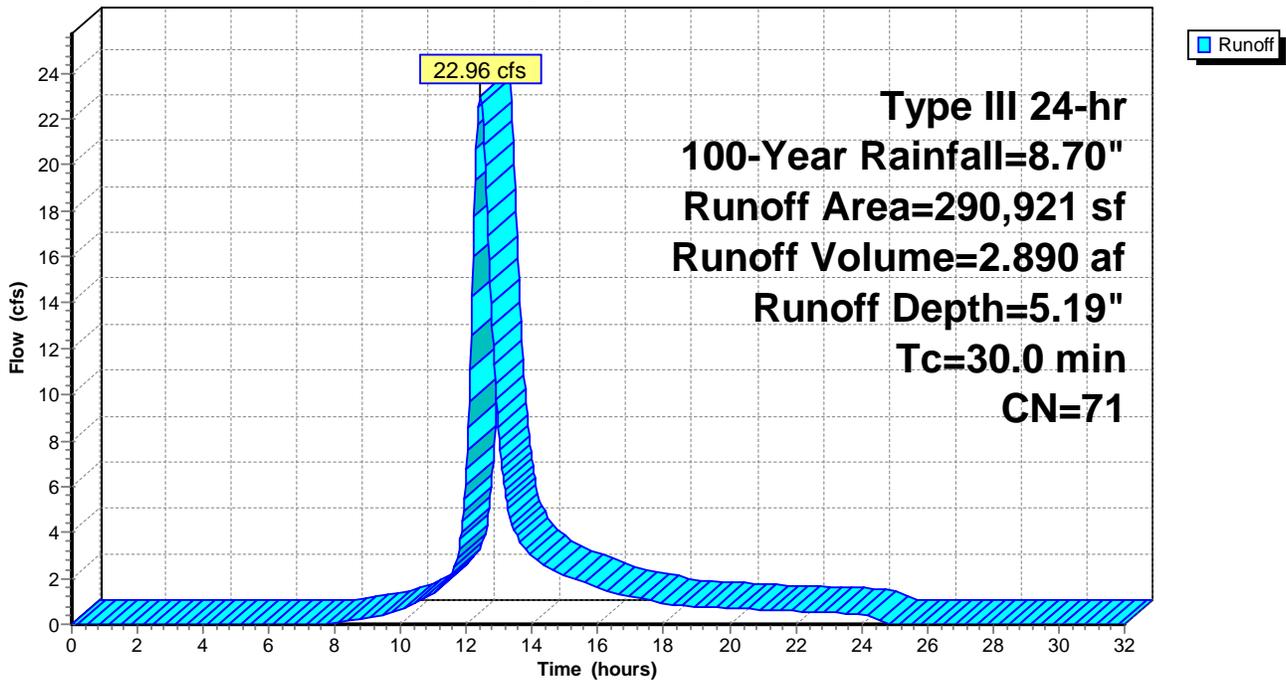
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

Area (sf)	CN	Description
166,225	77	Woods, Good, HSG D
102,013	70	Woods, Good, HSG C
22,683	30	Woods, Good, HSG A
290,921	71	Weighted Average
290,921	71	100.00% Pervious Area

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

Subcatchment 2S: EX-AREA-2

Hydrograph



Summary for Subcatchment 2X: EX-AREA-2

Runoff = 22.96 cfs @ 12.42 hrs, Volume= 2.890 af, Depth= 5.19"

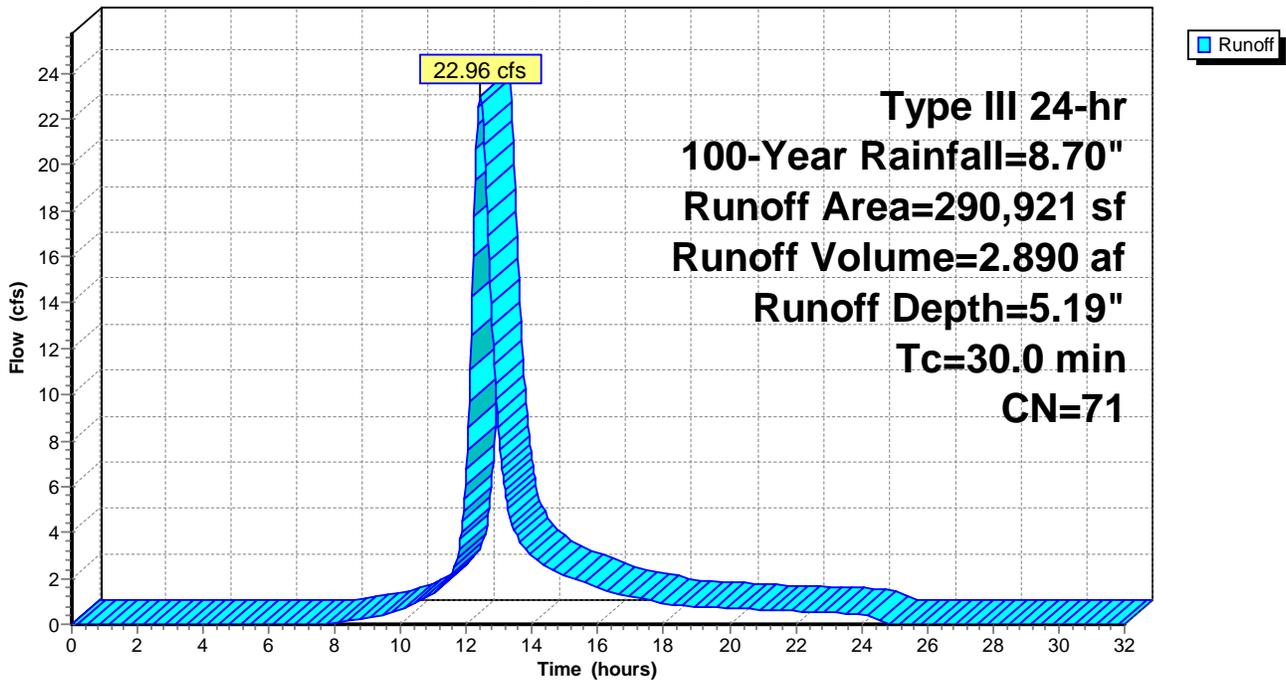
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

Area (sf)	CN	Description
166,225	77	Woods, Good, HSG D
102,013	70	Woods, Good, HSG C
22,683	30	Woods, Good, HSG A
290,921	71	Weighted Average
290,921	71	100.00% Pervious Area

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

Subcatchment 2X: EX-AREA-2

Hydrograph



Summary for Subcatchment 3S: PR-AREA-3A

Runoff = 1.37 cfs @ 12.18 hrs, Volume= 0.124 af, Depth= 3.04"

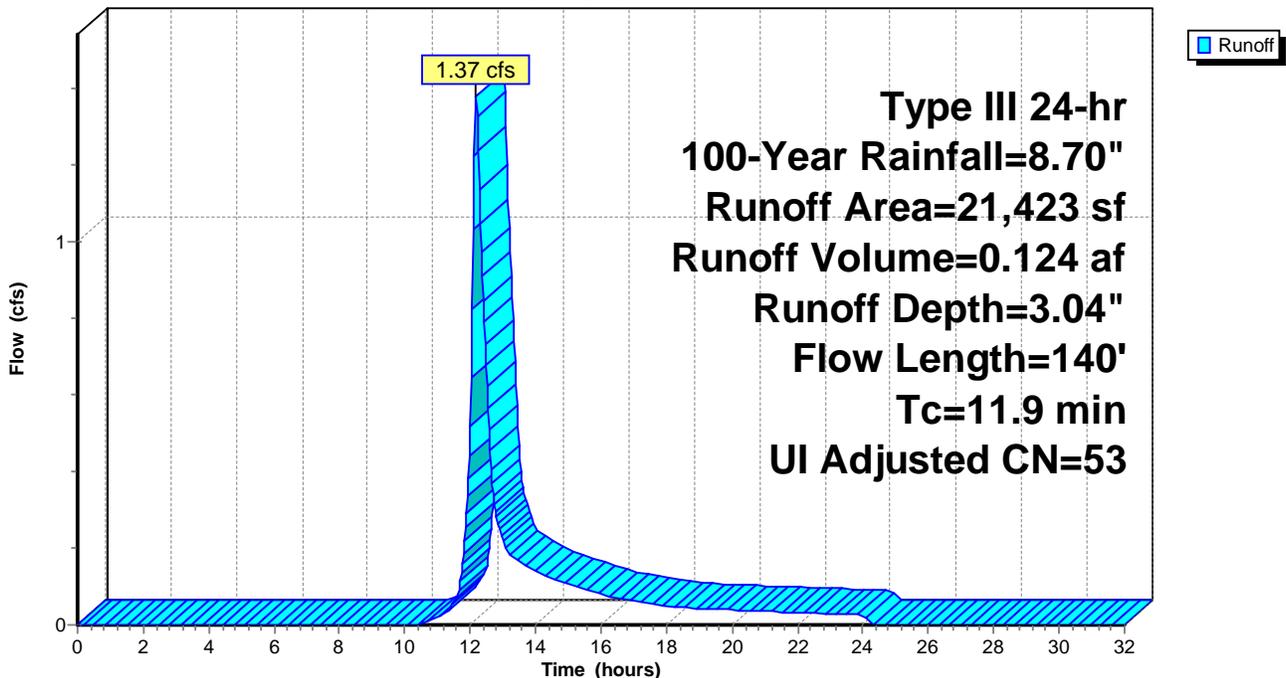
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

Area (sf)	CN	Adj	Description
4,752	98		Paved parking, HSG A
806	98		Unconnected pavement, HSG A
15,865	39		>75% Grass cover, Good, HSG A
21,423	54	53	Weighted Average, UI Adjusted
15,865	39	39	74.06% Pervious Area
5,558	98	98	25.94% Impervious Area
806			14.50% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	76	0.0200	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	24	0.0200	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	140	Total			

Subcatchment 3S: PR-AREA-3A

Hydrograph



Summary for Subcatchment 3X: EX-AREA-3

Runoff = 2.89 cfs @ 12.17 hrs, Volume= 0.259 af, Depth= 3.27"

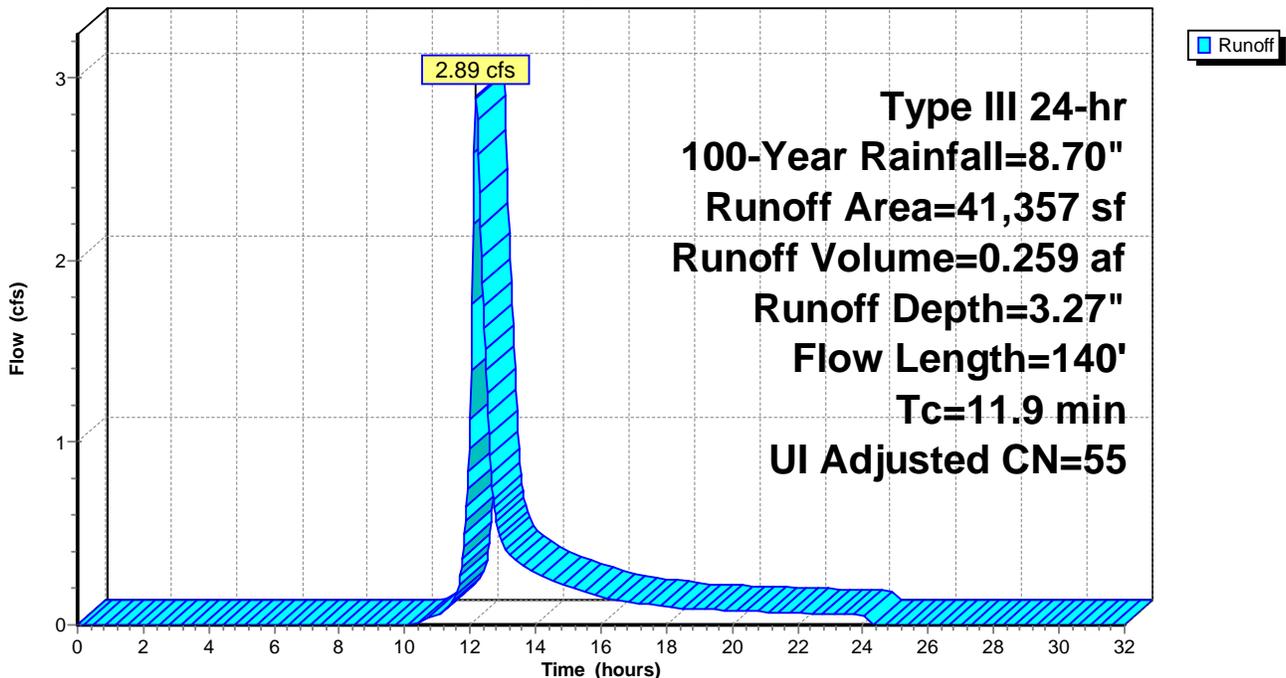
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

Area (sf)	CN	Adj	Description
10,245	98		Paved parking, HSG A
1,596	98		Unconnected pavement, HSG A
29,516	39		>75% Grass cover, Good, HSG A
41,357	56	55	Weighted Average, UI Adjusted
29,516	39	39	71.37% Pervious Area
11,841	98	98	28.63% Impervious Area
1,596			13.48% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	76	0.0200	0.11		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	24	0.0200	1.05		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
0.2	40	0.0800	4.24		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
11.9	140	Total			

Subcatchment 3X: EX-AREA-3

Hydrograph



Summary for Subcatchment 4S: PR-BLDG

Runoff = 1.42 cfs @ 12.08 hrs, Volume= 0.099 af, Depth= 4.23"

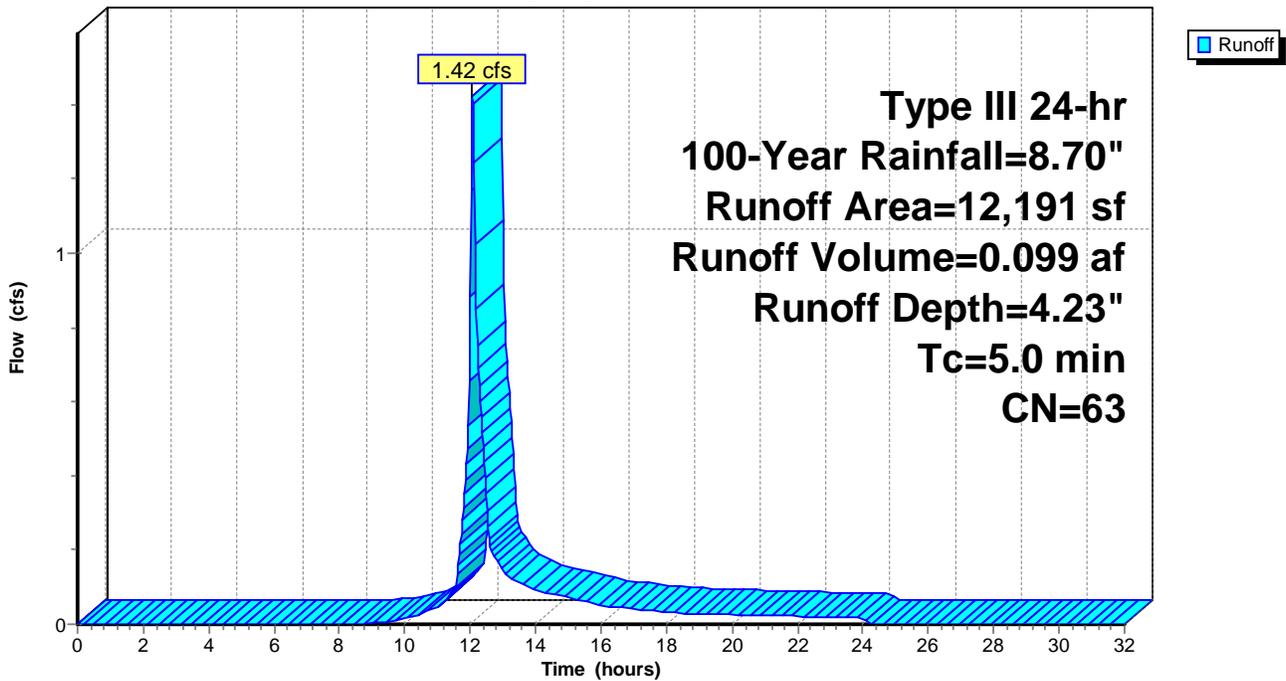
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

Area (sf)	CN	Description
5,000	98	Roofs, HSG A
7,191	39	>75% Grass cover, Good, HSG A
12,191	63	Weighted Average
7,191	39	58.99% Pervious Area
5,000	98	41.01% Impervious Area

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

Subcatchment 4S: PR-BLDG

Hydrograph



Summary for Subcatchment 5S: SOUTH PAVEMENT

Runoff = 0.78 cfs @ 12.07 hrs, Volume= 0.062 af, Depth= 8.46"

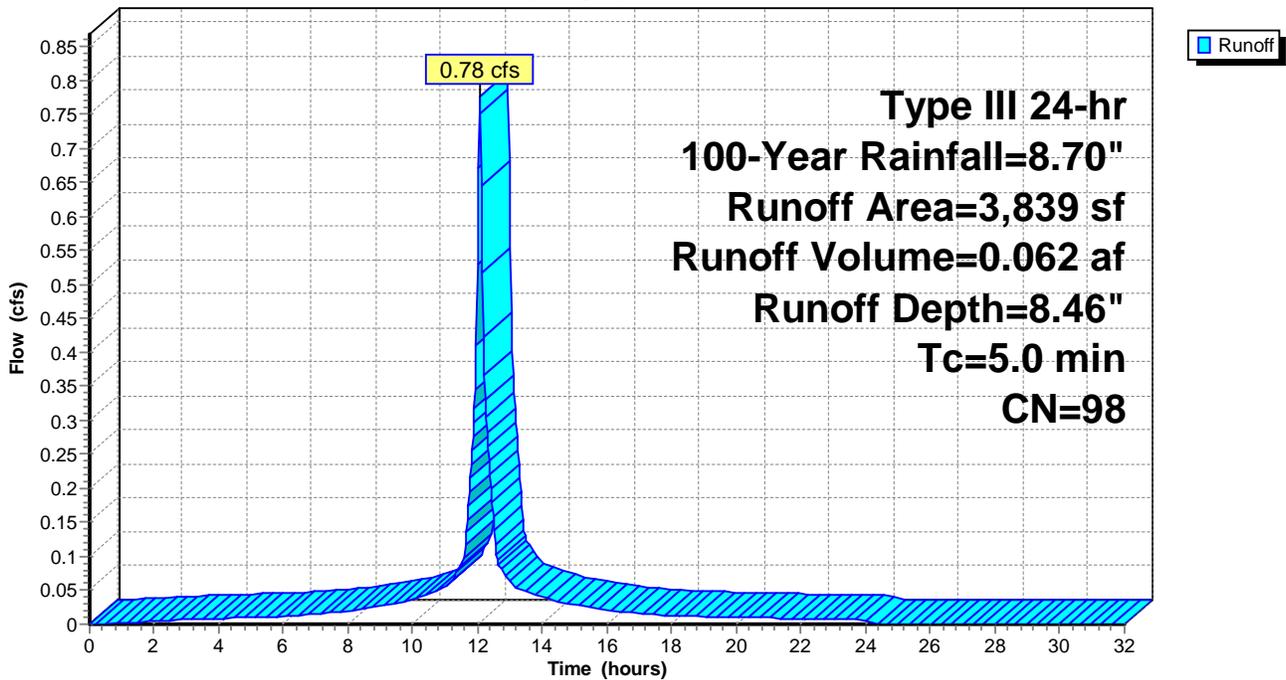
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

Area (sf)	CN	Description
3,839	98	Paved parking, HSG A
3,839	98	100.00% Impervious Area

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

Subcatchment 5S: SOUTH PAVEMENT

Hydrograph



Summary for Subcatchment 6S: NORTH PAVEMENT

Runoff = 0.75 cfs @ 12.07 hrs, Volume= 0.060 af, Depth= 8.46"

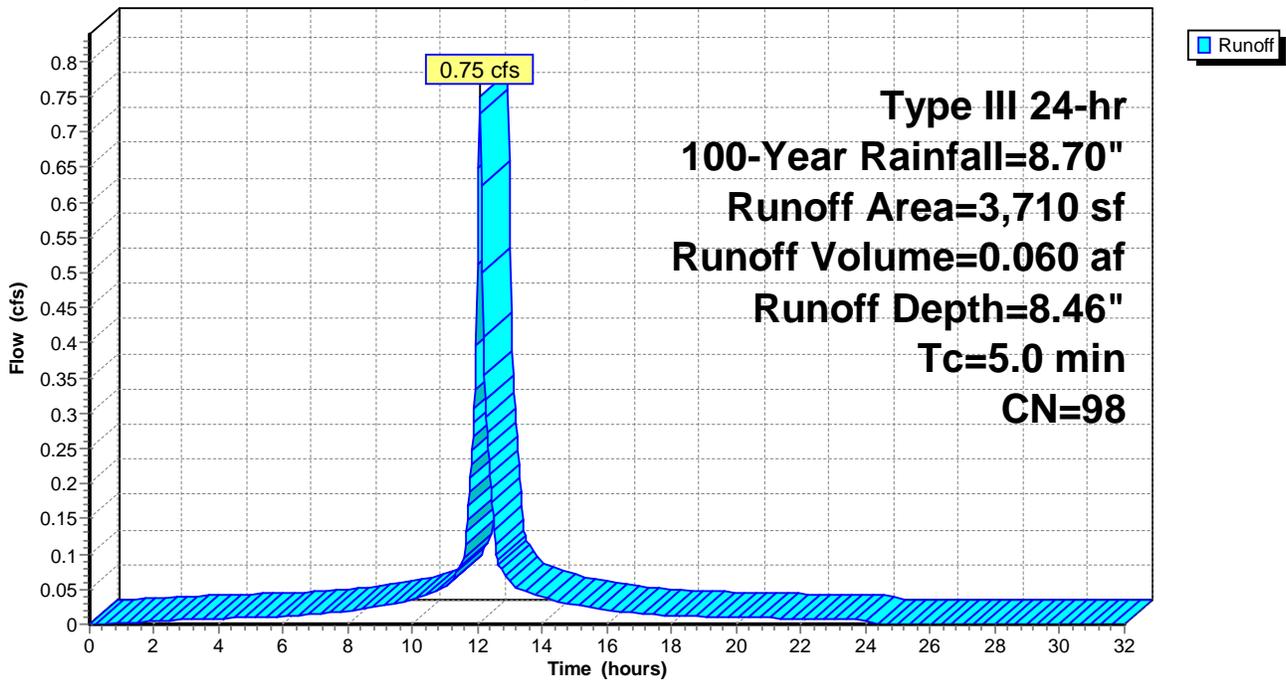
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

Area (sf)	CN	Description
3,710	98	Paved parking, HSG A
3,710	98	100.00% Impervious Area

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

Subcatchment 6S: NORTH PAVEMENT

Hydrograph



Summary for Subcatchment 7S: PR-AREA-3B

Runoff = 1.52 cfs @ 12.19 hrs, Volume= 0.138 af, Depth= 3.63"

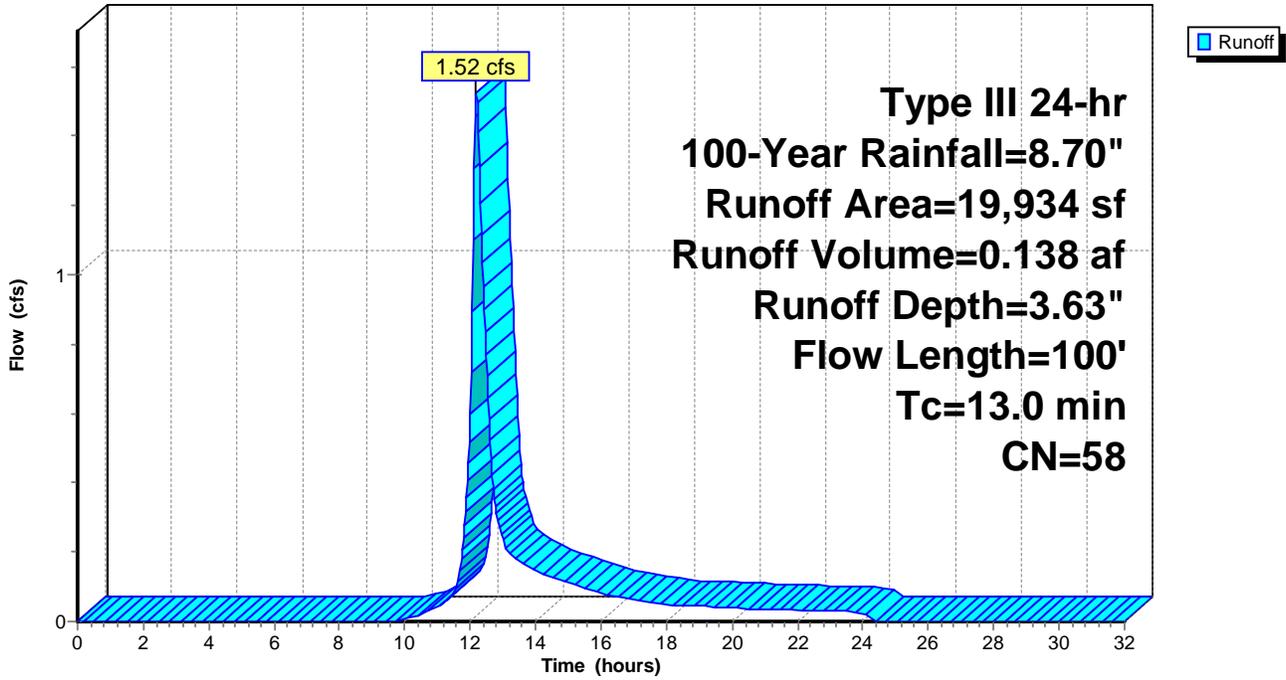
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

Area (sf)	CN	Description
5,493	98	Paved parking, HSG A
790	98	Unconnected pavement, HSG A
13,651	39	>75% Grass cover, Good, HSG A
19,934	58	Weighted Average
13,651	39	68.48% Pervious Area
6,283	98	31.52% Impervious Area
790		12.57% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	20	0.0050	0.05		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.6	20	0.0050	0.58		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
4.1	36	0.0555	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.5	24	0.3300	0.27		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
13.0	100	Total			

Subcatchment 7S: PR-AREA-3B

Hydrograph



Summary for Subcatchment 9S: SOUTH LAWN

Runoff = 0.24 cfs @ 12.16 hrs, Volume= 0.026 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs
 Type III 24-hr 100-Year Rainfall=8.70"

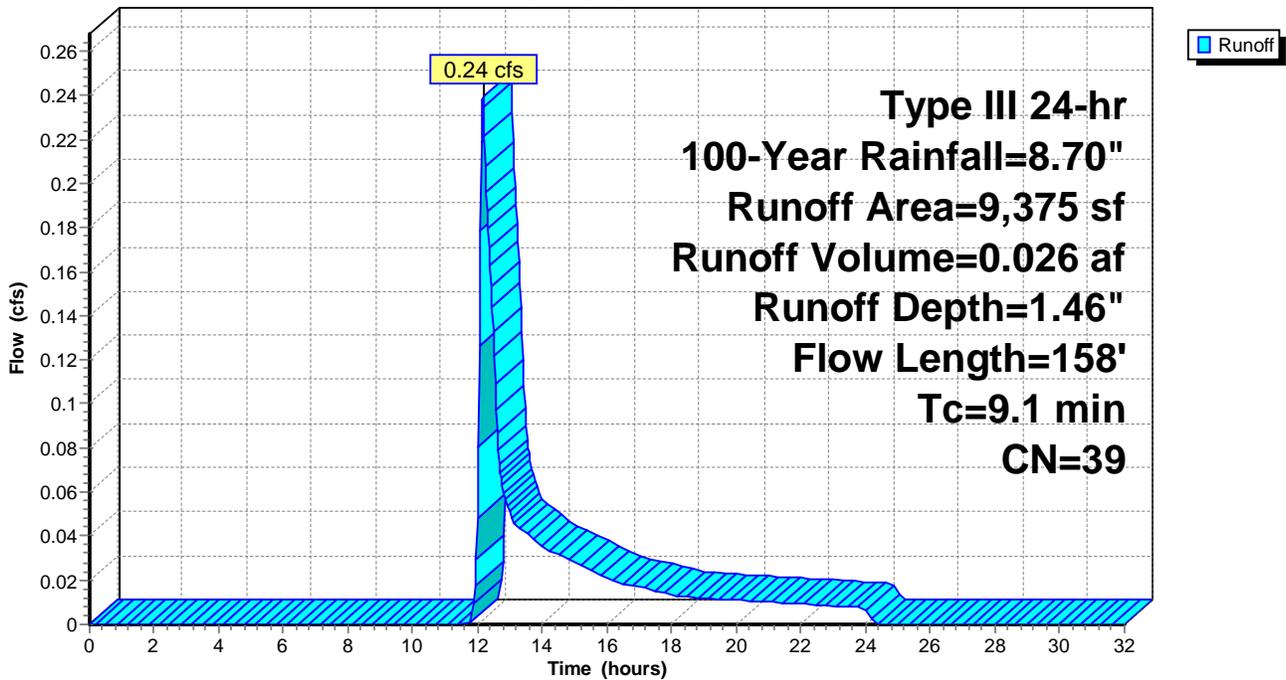
Area (sf)	CN	Description
9,375	39	>75% Grass cover, Good, HSG A
9,375	39	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	100	0.0700	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.4	36	0.0556	1.65		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	22	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps

9.1 158 Total

Subcatchment 9S: SOUTH LAWN

Hydrograph



Summary for Pond 1P: WQ POND

Inflow Area = 0.945 ac, 43.99% Impervious, Inflow Depth = 4.38" for 100-Year event
 Inflow = 3.91 cfs @ 12.09 hrs, Volume= 0.345 af
 Outflow = 2.49 cfs @ 12.28 hrs, Volume= 0.345 af, Atten= 36%, Lag= 11.1 min
 Discarded = 0.18 cfs @ 12.28 hrs, Volume= 0.257 af
 Primary = 1.15 cfs @ 12.28 hrs, Volume= 0.044 af
 Secondary = 1.15 cfs @ 12.28 hrs, Volume= 0.044 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 248.05' @ 12.28 hrs Surf.Area= 3,314 sf Storage= 4,641 cf

Plug-Flow detention time= 213.1 min calculated for 0.345 af (100% of inflow)
 Center-of-Mass det. time= 213.2 min (1,024.3 - 811.1)

Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	8,240 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.00	1,070	0	0
247.00	2,305	1,688	1,688
248.00	3,262	2,784	4,471
249.00	4,275	3,769	8,240

Device	Routing	Invert	Outlet Devices
#1	Discarded	246.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'
#2	Primary	248.00'	2.5" x 2.5" Horiz. Orifice/Grate X 6.00 columns X 6 rows C= 0.600 Limited to weir flow at low heads
#3	Secondary	248.00'	2.5" x 2.5" Horiz. Orifice/Grate X 6.00 columns X 6 rows C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.18 cfs @ 12.28 hrs HW=248.05' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.18 cfs)

Primary OutFlow Max=1.13 cfs @ 12.28 hrs HW=248.05' TW=245.32' (Dynamic Tailwater)

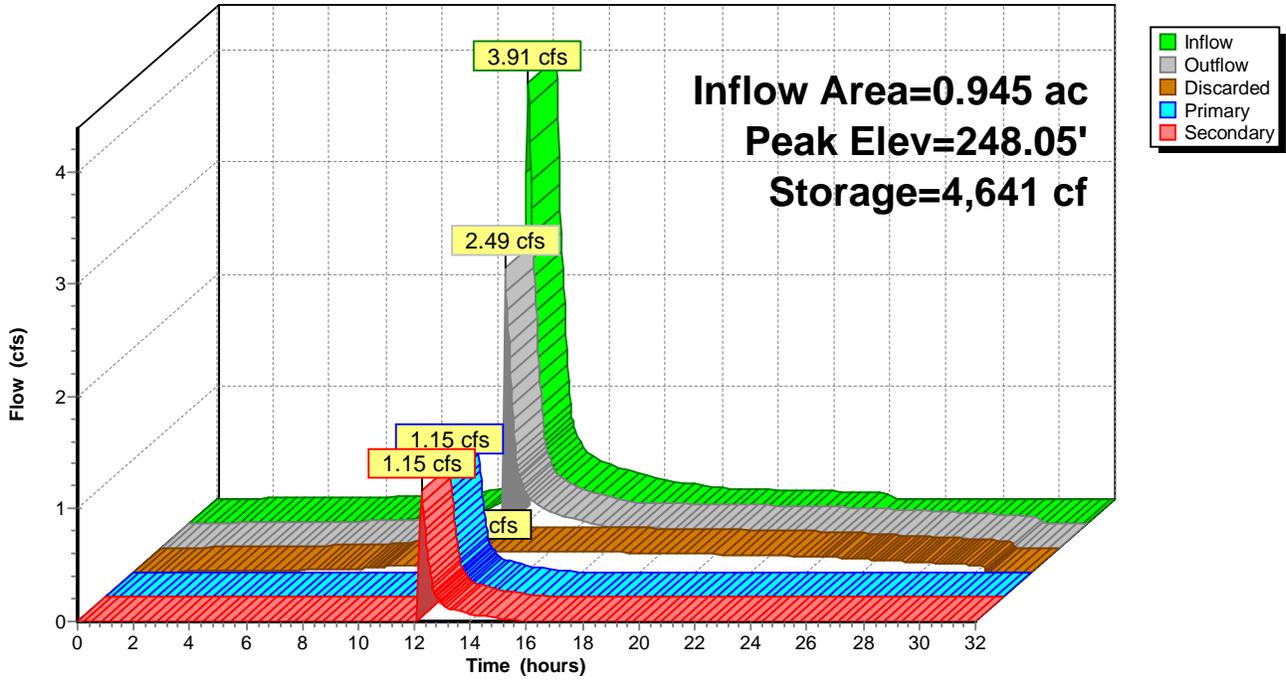
↑2=Orifice/Grate (Weir Controls 1.13 cfs @ 0.74 fps)

Secondary OutFlow Max=1.13 cfs @ 12.28 hrs HW=248.05' TW=245.32' (Dynamic Tailwater)

↑3=Orifice/Grate (Weir Controls 1.13 cfs @ 0.74 fps)

Pond 1P: WQ POND

Hydrograph



Summary for Pond 2P: SOUTH POND

Inflow Area = 0.673 ac, 21.44% Impervious, Inflow Depth = 2.94" for 100-Year event
 Inflow = 1.76 cfs @ 12.18 hrs, Volume= 0.165 af
 Outflow = 1.60 cfs @ 12.28 hrs, Volume= 0.164 af, Atten= 9%, Lag= 5.8 min
 Discarded = 0.07 cfs @ 12.28 hrs, Volume= 0.093 af
 Primary = 1.53 cfs @ 12.28 hrs, Volume= 0.071 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 247.10' @ 12.28 hrs Surf.Area= 1,227 sf Storage= 1,620 cf

Plug-Flow detention time= 176.8 min calculated for 0.164 af (100% of inflow)
 Center-of-Mass det. time= 174.9 min (1,035.8 - 861.0)

Volume	Invert	Avail.Storage	Storage Description
#1	245.00'	2,920 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.00	244	0	0
246.00	791	518	518
247.00	1,182	987	1,504
248.00	1,650	1,416	2,920

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.02'
#2	Primary	247.00'	20.0' long x 12.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Discarded OutFlow Max=0.07 cfs @ 12.28 hrs HW=247.09' (Free Discharge)

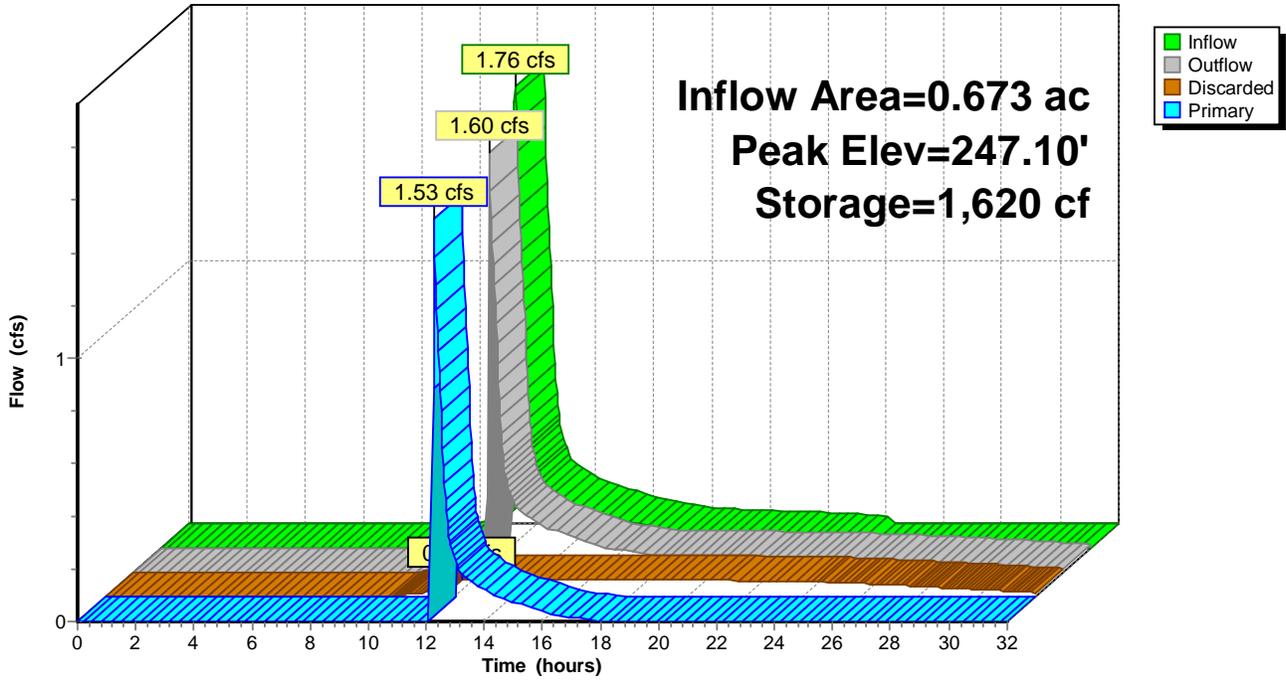
↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=1.45 cfs @ 12.28 hrs HW=247.09' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 1.45 cfs @ 0.78 fps)

Pond 2P: SOUTH POND

Hydrograph



Summary for Pond 3P: SOUTH CHAMBERS

Inflow = 1.15 cfs @ 12.28 hrs, Volume= 0.044 af
 Outflow = 0.09 cfs @ 12.24 hrs, Volume= 0.044 af, Atten= 92%, Lag= 0.0 min
 Discarded = 0.09 cfs @ 12.24 hrs, Volume= 0.044 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 246.30' @ 13.64 hrs Surf.Area= 0.037 ac Storage= 0.027 af

Plug-Flow detention time= 139.9 min calculated for 0.044 af (100% of inflow)
 Center-of-Mass det. time= 139.9 min (913.4 - 773.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	245.00'	0.022 af	21.50'W x 74.40'L x 2.33'H Field A 0.086 af Overall - 0.020 af Embedded = 0.065 af x 33.0% Voids
#2A	245.50'	0.020 af	ADS_StormTech SC-310 +Cap x 60 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 60 Chambers in 6 Rows
		0.042 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area Phase-In= 0.01'

Discarded OutFlow Max=0.09 cfs @ 12.24 hrs HW=245.09' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Pond 3P: SOUTH CHAMBERS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-310 +Cap (ADS StormTech® SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

6 Rows x 34.0" Wide + 6.0" Spacing x 5 + 12.0" Side Stone x 2 = 21.50' Base Width

6.0" Base + 16.0" Chamber Height + 6.0" Cover = 2.33' Field Height

60 Chambers x 14.7 cf = 884.5 cf Chamber Storage

3,732.4 cf Field - 884.5 cf Chambers = 2,847.9 cf Stone x 33.0% Voids = 939.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,824.3 cf = 0.042 af

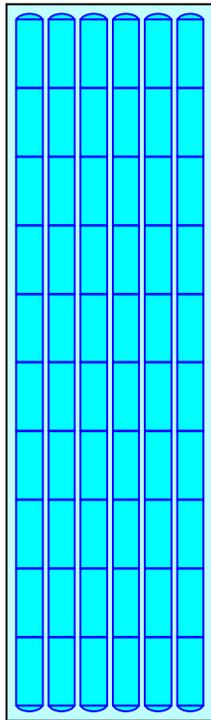
Overall Storage Efficiency = 48.9%

Overall System Size = 74.40' x 21.50' x 2.33'

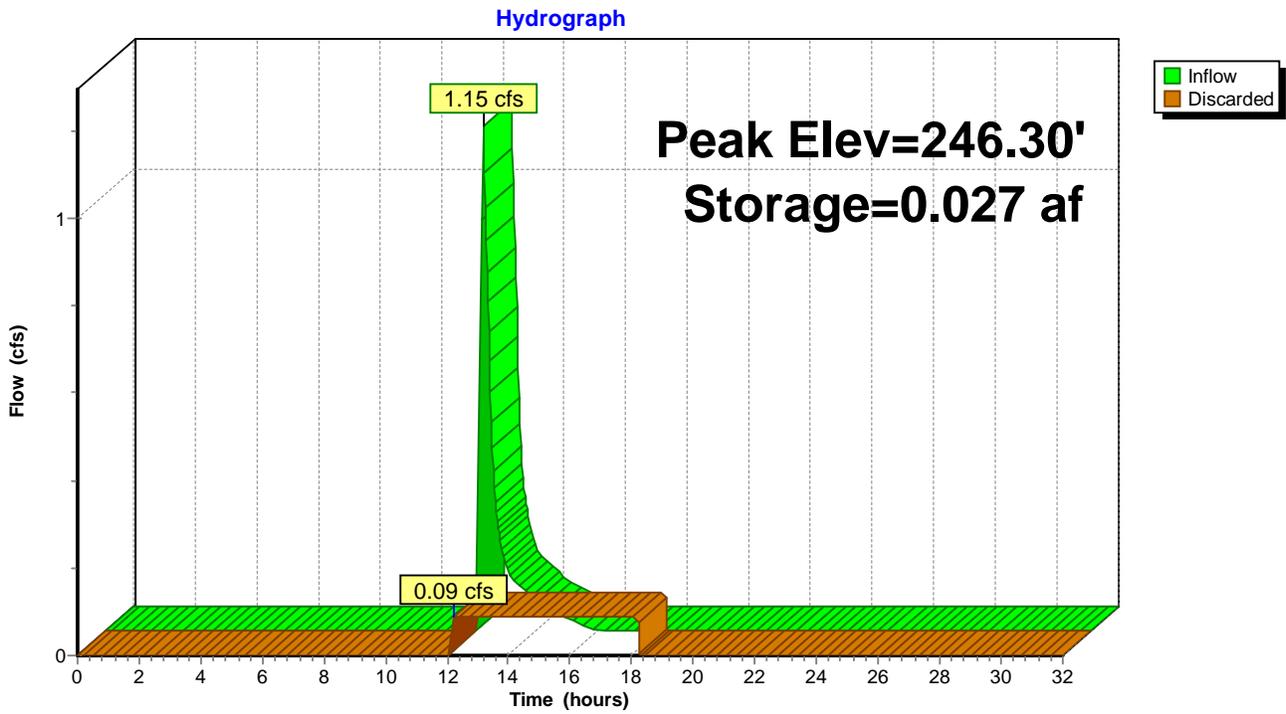
60 Chambers

138.2 cy Field

105.5 cy Stone



Pond 3P: SOUTH CHAMBERS



Summary for Pond 4P: NORTH CHAMBERS

Inflow Area = 0.945 ac, 43.99% Impervious, Inflow Depth = 0.56" for 100-Year event
 Inflow = 1.15 cfs @ 12.28 hrs, Volume= 0.044 af
 Outflow = 0.09 cfs @ 12.24 hrs, Volume= 0.044 af, Atten= 92%, Lag= 0.0 min
 Discarded = 0.09 cfs @ 12.24 hrs, Volume= 0.044 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs / 3
 Peak Elev= 246.30' @ 13.64 hrs Surf.Area= 0.037 ac Storage= 0.027 af

Plug-Flow detention time= 139.9 min calculated for 0.044 af (100% of inflow)
 Center-of-Mass det. time= 140.0 min (913.5 - 773.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	245.00'	0.022 af	21.50"W x 74.40"L x 2.33"H Field A 0.086 af Overall - 0.020 af Embedded = 0.065 af x 33.0% Voids
#2A	245.50'	0.020 af	ADS_StormTech SC-310 +Cap x 60 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 60 Chambers in 6 Rows
		0.042 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	245.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.09 cfs @ 12.24 hrs HW=245.09' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Pond 4P: NORTH CHAMBERS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-310 +Cap (ADS StormTech® SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

6 Rows x 34.0" Wide + 6.0" Spacing x 5 + 12.0" Side Stone x 2 = 21.50' Base Width

6.0" Base + 16.0" Chamber Height + 6.0" Cover = 2.33' Field Height

60 Chambers x 14.7 cf = 884.5 cf Chamber Storage

3,732.4 cf Field - 884.5 cf Chambers = 2,847.9 cf Stone x 33.0% Voids = 939.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,824.3 cf = 0.042 af

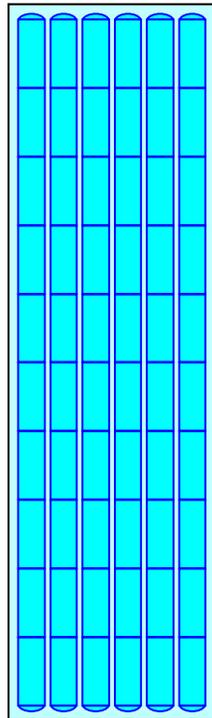
Overall Storage Efficiency = 48.9%

Overall System Size = 74.40' x 21.50' x 2.33'

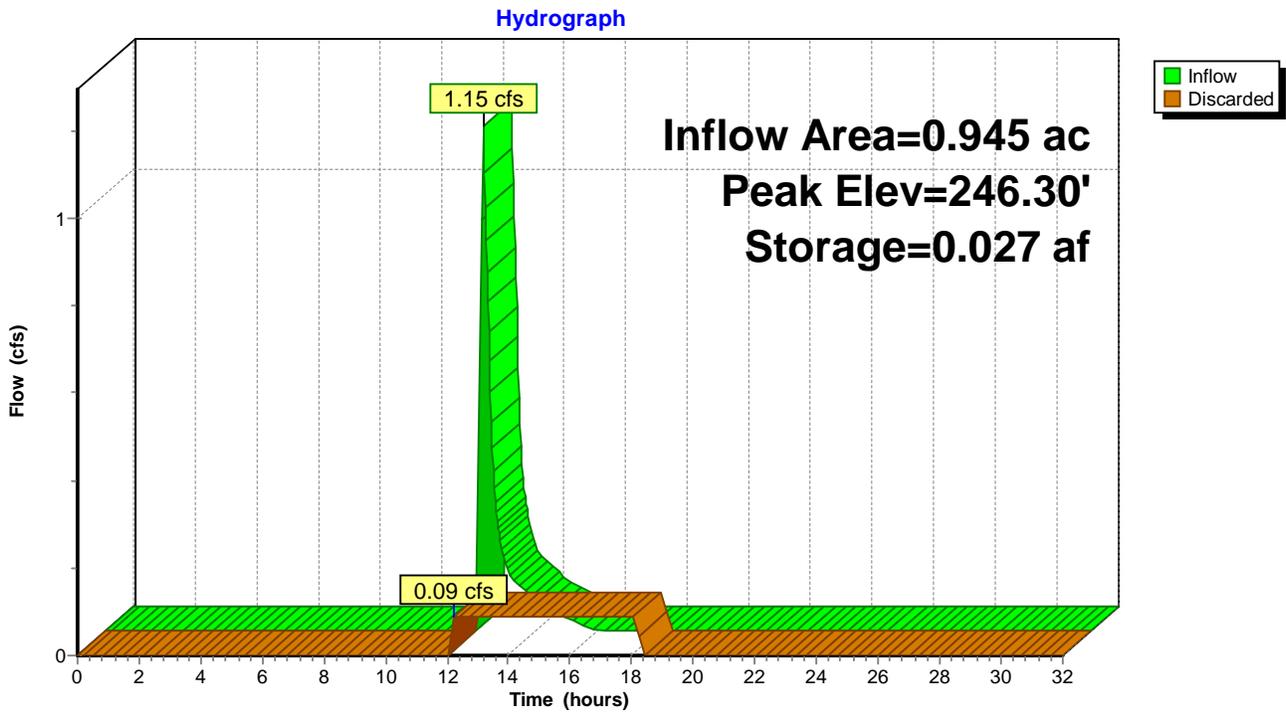
60 Chambers

138.2 cy Field

105.5 cy Stone



Pond 4P: NORTH CHAMBERS

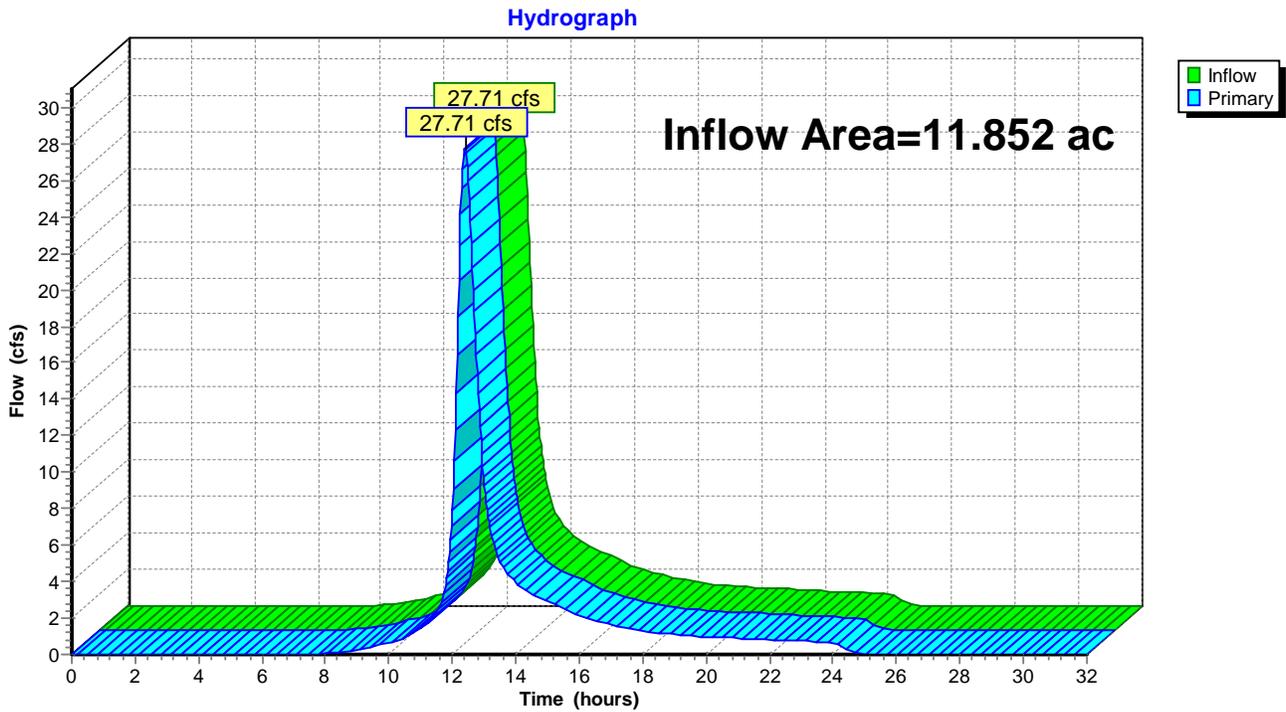


Summary for Link 3L: TOTAL EX SITE

Inflow Area = 11.852 ac, 2.29% Impervious, Inflow Depth = 3.67" for 100-Year event
Inflow = 27.71 cfs @ 12.41 hrs, Volume= 3.627 af
Primary = 27.71 cfs @ 12.41 hrs, Volume= 3.627 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs

Link 3L: TOTAL EX SITE



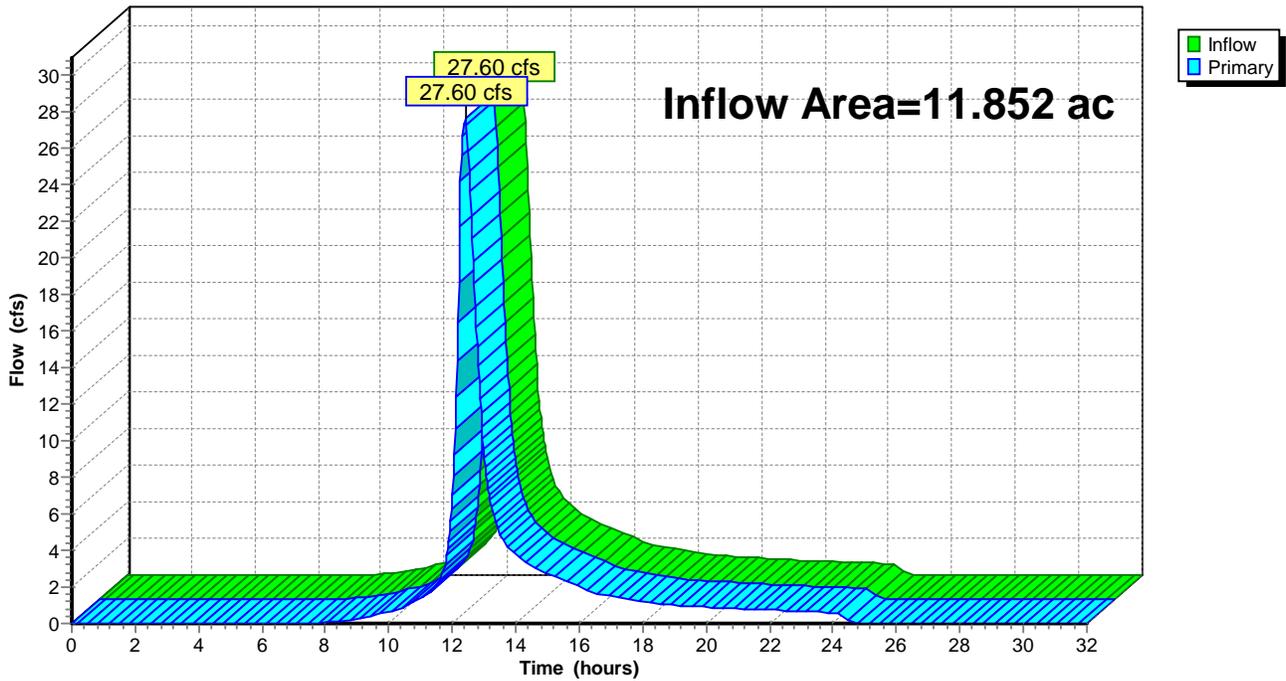
Summary for Link 4L: TOTAL PR SITE

Inflow Area = 11.852 ac, 4.72% Impervious, Inflow Depth = 3.50" for 100-Year event
Inflow = 27.60 cfs @ 12.40 hrs, Volume= 3.458 af
Primary = 27.60 cfs @ 12.40 hrs, Volume= 3.458 af, Atten= 0%, Lag= 0.0 min

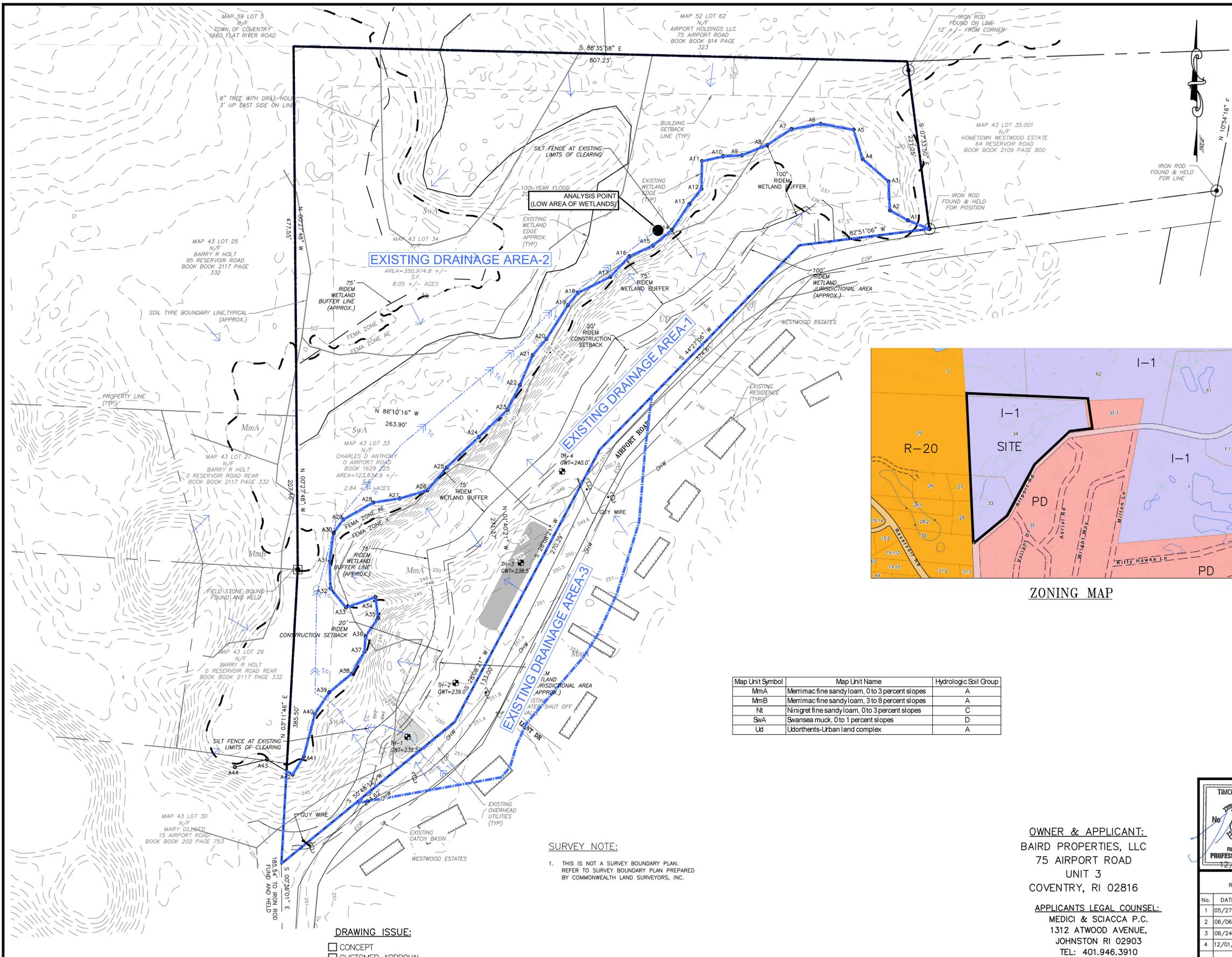
Primary outflow = Inflow, Time Span= 0.00-32.01 hrs, dt= 0.03 hrs

Link 4L: TOTAL PR SITE

Hydrograph



APPENDIX B
WATERSHED MAPS



ZONING TABLE:

	REQUIRED	PROPOSED
AREA	60,000 S.F.	548,475 S.F.
FRONTAGE	150 FEET	1,055.86 FEET
FRONT SETBACK	50 FEET	30 FEET
CORNER SIDE SETBACK	50 FEET	N/A
SIDE SETBACK	30 FEET	>30 FEET
REAR SETBACK	50 FEET	>50 FEET
MAX. BUILDING HEIGHT	35 FEET	<35 FEET
MAX. BUILDING HEIGHT (ACCESSORY)	15 FEET	NOT PROPOSED
MAX. LOT COVERAGE (IMPERVIOUS)	60 %	58 %
MIN. DISTANCE OF STRUCT. TO RES. ZONE	100 FEET	70 FEET
PARKING SPACES	15 SPACES	24 SPACES
LAND UNSUITABLE FOR DEVELOPMENT	N/A	4.87± ACRES

LAND UNSUITABLE FOR DEVELOPMENT:

WETLAND AREA = 0.00 ACRES
 FLOODZONE AREA = 4.87 ACRES
 TOTAL = 4.87 ACRES (TO BE CONFIRMED AT PRELIMINARY PLAN)

LOT COVERAGE:

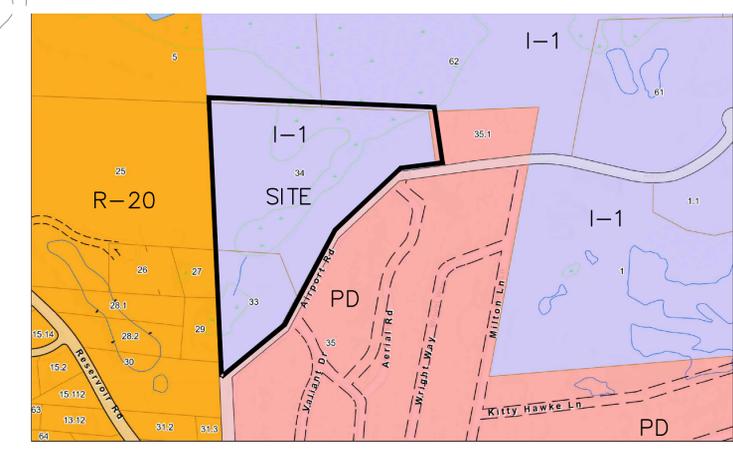
EXISTING = 9.7 ACRES 0.0%
 PROPOSED = 9.7 ACRES 1.2%

PARKING CALCULATIONS:

1. PROPOSED 5,000 SQ. FT. STORAGE GARAGE BUILDING:
 INDUSTRIAL USE: 1 PER EVERY 2 EMPLOYEES ON SHIFT
 PLUS 1 FOR EACH VEHICLE MAINTAINED ON SITE (4 MIN.)
 EMPLOYEES ON SHIFT = 10 / 2 = 5 SPACES REQUIRED
 VEHICLES MAINTAINED ON SITE = 10 SPACES REQUIRED
 TOTAL REQUIRED FOR 5,000 SQ. FT. BLDG. = 15 SPACES

TOTAL # PARKING SPACES PROVIDED = 18 SPACES EXTERIOR
 4 SPACES IN BLDG.
 TOTAL PROVIDED = 22 SPACES >15 OK

- NOTES:**
- NO POTABLE WATER WELLS OR ONSITE WASTEWATER TREATMENT SYSTEMS ARE PROPOSED.
 - NO ROCK EXCAVATION IS PROPOSED. NO FILL IS REQUIRED. VERY MINIMAL GRADING IS PROPOSED.
 - THIS IS NOT A SURVEY BOUNDARY PLAN, REFER TO SURVEY PLAN ON FILE. PROPERTY LINE TAKEN FROM DRAFT SURVEY BY COMMONWEALTH LAND SURVEYORS, INC. MAR. 2025.
 - TOPOGRAPHY TAKEN FROM 2022 NOAA LIBAR. DATUM IS NAVD88.
 - WETLAND EDGE DELINEATED BY AVIZINIS ENVIRONMENTAL SERVICES. MARCH 27, 2025.
 - THE 2024 AERIAL PHOTO INDICATES THE SUBJECT SITE IS FORESTED.
 - FEMA FLOOD MAP INDICATES SUBJECT SITE HAS AN AE FLOOD ZONE OF ELEV. 238.6 FT. AS INDICATED ON MAP 44030C104H DATED 10-2-2015.
 - RIDEM GIS INDICATES SUBJECT SITE IS IN A GROUNDWATER RESERVOIR AND RECHARGE AREA AND A NATURAL HERITAGE AREA.
 - RIDEM GIS GROUNDWATER CLASSIFICATION FOR THE SUBJECT PARCEL IS G4A.
 - SUBJECT SITE IS NOT IN A TOWN HISTORIC DISTRICT.
 - EXISTING OVERHEAD UTILITIES ARE LOCATED WITHIN AIRPORT ROAD
 - THE SUBJECT PARCEL FIRE PROTECTION IS SERVICED BY THE CENTRAL FIRE DISTRICT.



ZONING MAP

Map Unit Symbol	Map Unit Name	Hydrologic Soil Group
MmA	Merrimac fine sandy loam, 0 to 3 percent slopes	A
MmB	Merrimac fine sandy loam, 3 to 8 percent slopes	A
Nt	Ninigret fine sandy loam, 0 to 3 percent slopes	C
SwA	Swansea muck, 0 to 1 percent slopes	D
Ud	Udorthents-Urban land complex	A

LEGEND

--- 290 ---	CONTOUR LINE (EXISTING)
--- 290 ---	CONTOUR LINE (PROPOSED)
---	SUBJECT PROPERTY LINE
---	ABUTTING PROPERTY LINE
---	AP/LOT
---	ASSASSOR'S PLAT #/ ASSASSOR'S LOT #
---	FEMA FIRM MAP OVERLAY 100-YR AE FLOOD ZONE
---	100-FOOT WETLAND JURISDICTION LINE
---	SILT FENCE/PERIMETER EROSION CONTROLS
---	L0D
---	LIMIT OF DISTURBANCE
---	OHW
---	OVERHEAD WIRE
---	UE
---	UNDERGROUND ELECTRIC BUILDING SETBACK LINE
TH-1	SOIL TEST HOLE
242.79	EXISTING SPOT GRADE
242.72	PROPOSED SPOT GRADE
ELEV.	ELEVATION
EXIST.	EXISTING
N/F	NOW OR FORMERLY
SQ. FT.	SQUARE FEET
TOP	TOP OF FOUNDATION
TYP	TYPICAL
U.P.	UTILITY POLE
LT.	LIGHT

SURVEY NOTE:

1. THIS IS NOT A SURVEY BOUNDARY PLAN. REFER TO SURVEY BOUNDARY PLAN PREPARED BY COMMONWEALTH LAND SURVEYORS, INC.

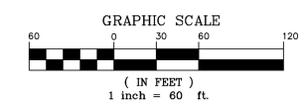
DRAWING ISSUE:

CONCEPT
 CUSTOMER APPROVAL
 PERMITTING
 CONSTRUCTION
 AS-BUILT
 OTHER:

ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION

EXISTING CONDITIONS PLAN

SCALE: 1" = 60'

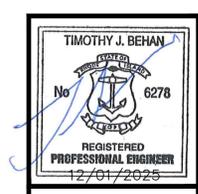


CERTIFICATION:

ALL PLANS AND IMPROVEMENTS CONFORM TO ALL EXISTING AND AMENDED STANDARDS OF THE STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS, BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND BOARD OF REGISTRATION OF LAND SURVEYORS

OWNER & APPLICANT:
 BAIRD PROPERTIES, LLC
 75 AIRPORT ROAD
 UNIT 3
 COVENTRY, RI 02816

APPLICANTS LEGAL COUNSEL:
 MEDICI & SCIACCA P.C.
 1312 ATWOOD AVENUE,
 JOHNSTON RI 02903
 TEL: 401.946.3910



REVISIONS

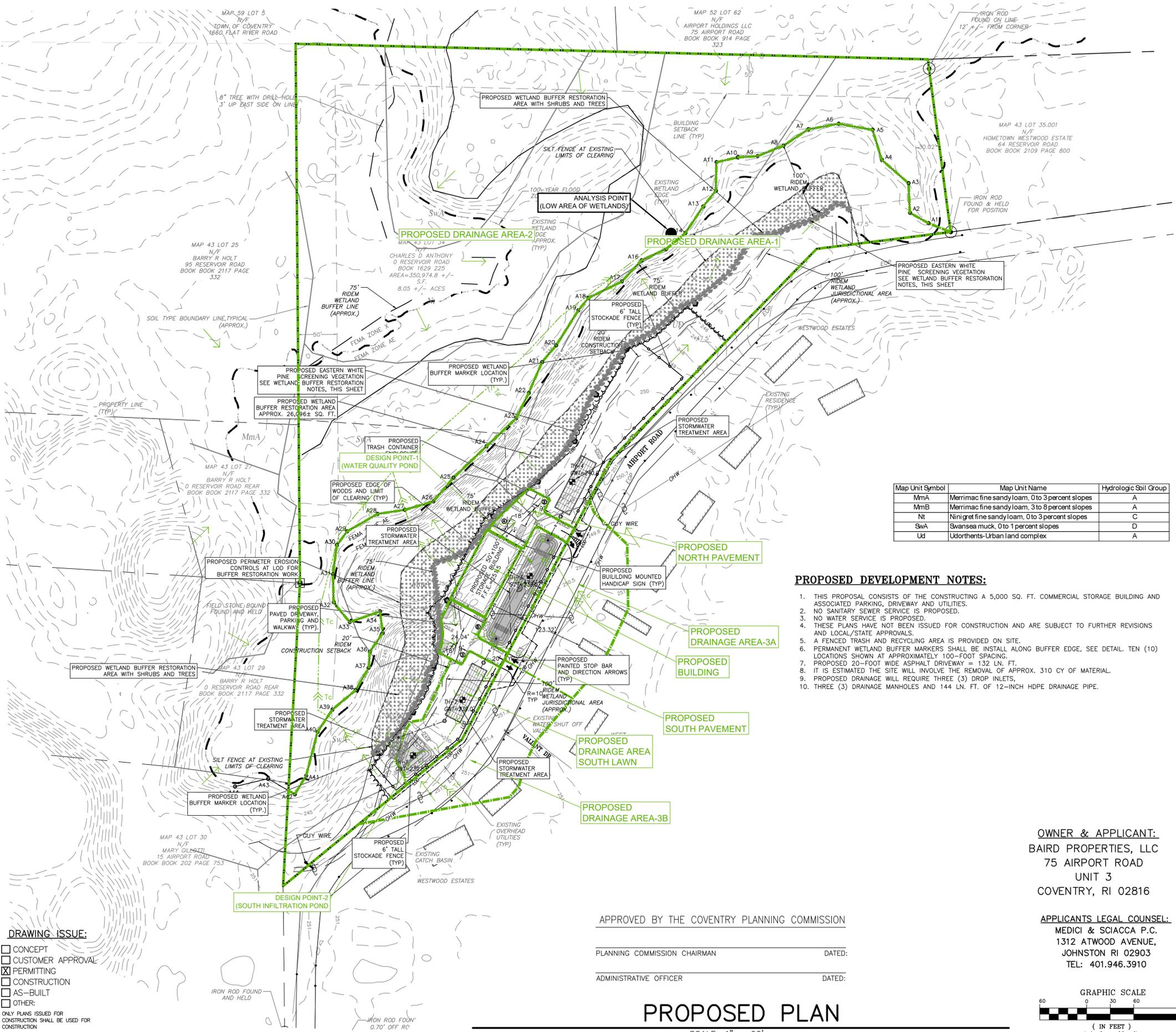
No.	DATE	DRWN	CHKD
1	05/27/25	SMA	TJB
2	06/06/25	SMA	TJB
3	06/24/25	SMA	TJB
4	12/01/25	SMA	TJB



**EXISTING WATERSHED MAP
 PROPOSED STORAGE BUILDING**
 for
A.P. 43 LOTS 33 & 34
AIRPORT ROAD
 in
 COVENTRY, RHODE ISLAND

SCALE: AS SHOWN SHEET NO: 1 OF 2
 DRAWN BY: CJC DESIGN BY: SMA CHECKED BY: TJB
 DATE: 3/26/2025 PROJECT NO.: 25023.00

ZONE 11 & FIRE DISTRICT = CENTRAL COVENTRY



ZONING TABLE:

AREA	REQUIRED	PROPOSED
FRONTAGE	60,000 S.F.	548,475 S.F.
FRONT SETBACK	150 FEET	1,055.86 FEET
CORNER SIDE SETBACK	50 FEET	30 FEET
SIDE SETBACK	50 FEET	N/A
REAR SETBACK	30 FEET	>30 FEET
REAR SETBACK	50 FEET	>50 FEET
MAX. BUILDING HEIGHT	35 FEET	<35 FEET
MAX. BUILDING HEIGHT (ACCESSORY)	15 FEET	NOT PROPOSED
MIN. LOT COVERAGE (IMPERVIOUS)	60 %	58 %
MIN. DISTANCE OF STRUCT. TO RES. ZONE	100 FEET	70 FEET
PARKING SPACES	15 SPACES	24 SPACES
LAND UNSUITABLE FOR DEVELOPMENT	N/A	4.87± ACRES

LAND UNSUITABLE FOR DEVELOPMENT:
 WETLAND AREA = 0.00 ACRES
 FLOODZONE AREA = 4.87 ACRES
 TOTAL = 4.87 ACRES (TO BE CONFIRMED AT PRELIMINARY PLAN)

LOT COVERAGE:
 EXISTING = 9.7 ACRES 0.0%
 PROPOSED = 9.7 ACRES 1.2%

PARKING CALCULATIONS:
 1. PROPOSED 5,000 SQ. FT. STORAGE GARAGE BUILDING:
 INDUSTRIAL USE, 1 PER EVERY 2 EMPLOYEES ON SHIFT
 PLUS 1 FOR EACH VEHICLE MAINTAINED ON SITE (4 MIN.)
 EMPLOYEES ON SHIFT = 10 / 2 = 5 SPACES REQUIRED
 VEHICLES MAINTAINED ON SITE = 10 SPACES REQUIRED
 TOTAL REQUIRED FOR 5,810 SQ. FT. BLDG. = 15 SPACES
 TOTAL # PARKING SPACES PROVIDED = 18 SPACES EXTERIOR
 4 SPACES IN BLDG.
 TOTAL PROVIDED = 22 SPACES >15 OK

- NOTES:**
- NO POTABLE WATER WELLS OR ONSITE WASTEWATER TREATMENT SYSTEMS ARE PROPOSED.
 - NO ROCK EXCAVATION IS PROPOSED. NO FILL IS REQUIRED. VERY MINIMAL GRADING IS PROPOSED.
 - THIS IS NOT A SURVEY BOUNDARY PLAN, REFER TO SURVEY PLAN ON FILE. PROPERTY LINE TAKEN FROM DRAFT SURVEY BY COMMONWEALTH LAND SURVEYORS, INC. MAR. 2025.
 - TOPOGRAPHY TAKEN FROM 2022 NOAA LIDAR. DATUM IS NAVD83.
 - WETLAND EDGE DELINEATED BY AVIZINS ENVIRONMENTAL SERVICES, MARCH 27, 2025.
 - THE 2024 AERIAL PHOTO INDICATES THE SUBJECT SITE IS FORESTED.
 - FEMA FLOOD MAP INDICATES SUBJECT SITE HAS AN AE FLOOD ZONE OF ELEV. 238.6 FT. AS INDICATED ON MAP 4400300104H DATED 10-2-2015.
 - RIDEM GIS INDICATES SUBJECT SITE IS IN A GROUNDWATER RESERVOIR AND RECHARGE AREA AND A NATURAL HERITAGE AREA.
 - RIDEM GIS GROUNDWATER CLASSIFICATION FOR THE SUBJECT PARCEL IS GWA.
 - SUBJECT SITE IS NOT IN A TOWN HISTORIC DISTRICT.
 - EXISTING OVERHEAD UTILITIES ARE LOCATED WITHIN AIRPORT ROAD
 - THE SUBJECT PARCEL FIRE PROTECTION IS SERVICED BY THE CENTRAL FIRE DISTRICT.

Map Unit Symbol	Map Unit Name	Hydrologic Soil Group
MmA	Merrimac fine sandy loam, 0 to 3 percent slopes	A
MmB	Merrimac fine sandy loam, 3 to 8 percent slopes	A
Nt	Ninigret fine sandy loam, 0 to 3 percent slopes	C
SwA	Swansea muck, 0 to 1 percent slopes	D
Ud	Udorthents-Urban land complex	A

- PROPOSED DEVELOPMENT NOTES:**
- THIS PROPOSAL CONSISTS OF THE CONSTRUCTING A 5,000 SQ. FT. COMMERCIAL STORAGE BUILDING AND ASSOCIATED PARKING, DRIVEWAY AND UTILITIES.
 - NO SANITARY SEWER SERVICE IS PROPOSED.
 - NO WATER SERVICE IS PROPOSED.
 - THESE PLANS HAVE NOT BEEN ISSUED FOR CONSTRUCTION AND ARE SUBJECT TO FURTHER REVISIONS AND LOCAL/STATE APPROVALS.
 - A FENCED TRASH AND RECYCLING AREA IS PROVIDED ON SITE.
 - PERMANENT WETLAND BUFFER MARKERS SHALL BE INSTALLED ALONG BUFFER EDGE, SEE DETAIL. TEN (10) LOCATIONS SHOWN AT APPROXIMATELY 100-FOOT SPACING.
 - PROPOSED 20-FOOT WIDE ASPHALT DRIVEWAY = 132 LN. FT.
 - IT IS ESTIMATED THE SITE WILL INVOLVE THE REMOVAL OF APPROX. 310 CY OF MATERIAL.
 - PROPOSED DRAINAGE WILL REQUIRE THREE (3) DROP INLETS, THREE (3) DRAINAGE MANHOLES AND 144 LN. FT. OF 12-INCH HDPE DRAINAGE PIPE.

LEGEND

--- 290 ---	CONTOUR LINE (EXISTING)
---	CONTOUR LINE (PROPOSED)
---	SUBJECT PROPERTY LINE
---	ABUTTING PROPERTY LINE
---	ASSESSOR'S PLAT # / ASSESSOR'S LOT #
---	FEMA FIRM MAP OVERLAY 100-YR AE FLOOD ZONE
---	100-FOOT WETLAND JURISDICTION LINE
---	SILT FENCE/PERIMETER EROSION CONTROLS
---	LIMIT OF DISTURBANCE
---	OVERHEAD WIRE
---	UNDERGROUND ELECTRIC
---	BUILDING SETBACK LINE
+	SOIL TEST HOLE
+	EXISTING SPOT GRADE
+	PROPOSED SPOT GRADE
ELEV.	ELEVATION
EXIST.	EXISTING
N/F	NOW OR FORMERLY
SQ. FT.	SQUARE FEET
TOP	TOP OF FOUNDATION
TYP	TYPICAL
U.P.	UTILITY POLE
LT.	LIGHT

- DRAWING ISSUE:**
- CONCEPT
 - CUSTOMER APPROVAL
 - PERMITTING
 - CONSTRUCTION
 - AS-BUILT
 - OTHER:
- ONLY PLANS ISSUED FOR CONSTRUCTION SHALL BE USED FOR CONSTRUCTION

APPROVED BY THE COVENTRY PLANNING COMMISSION

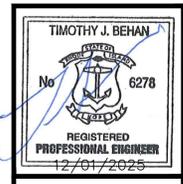
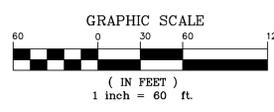
PLANNING COMMISSION CHAIRMAN _____ DATED: _____

ADMINISTRATIVE OFFICER _____ DATED: _____

PROPOSED PLAN
 SCALE: 1" = 60'

OWNER & APPLICANT:
 BAIRD PROPERTIES, LLC
 75 AIRPORT ROAD
 UNIT 3
 COVENTRY, RI 02816

APPLICANTS LEGAL COUNSEL:
 MEDICI & SCIACCA P.C.
 1312 ATWOOD AVENUE,
 JOHNSTON RI 02903
 TEL: 401.946.3910



PROPOSED WATERSHED MAP
PROPOSED STORAGE BUILDING
 for
A.P. 43 LOTS 33 & 34
AIRPORT ROAD
 in
 COVENTRY, RHODE ISLAND

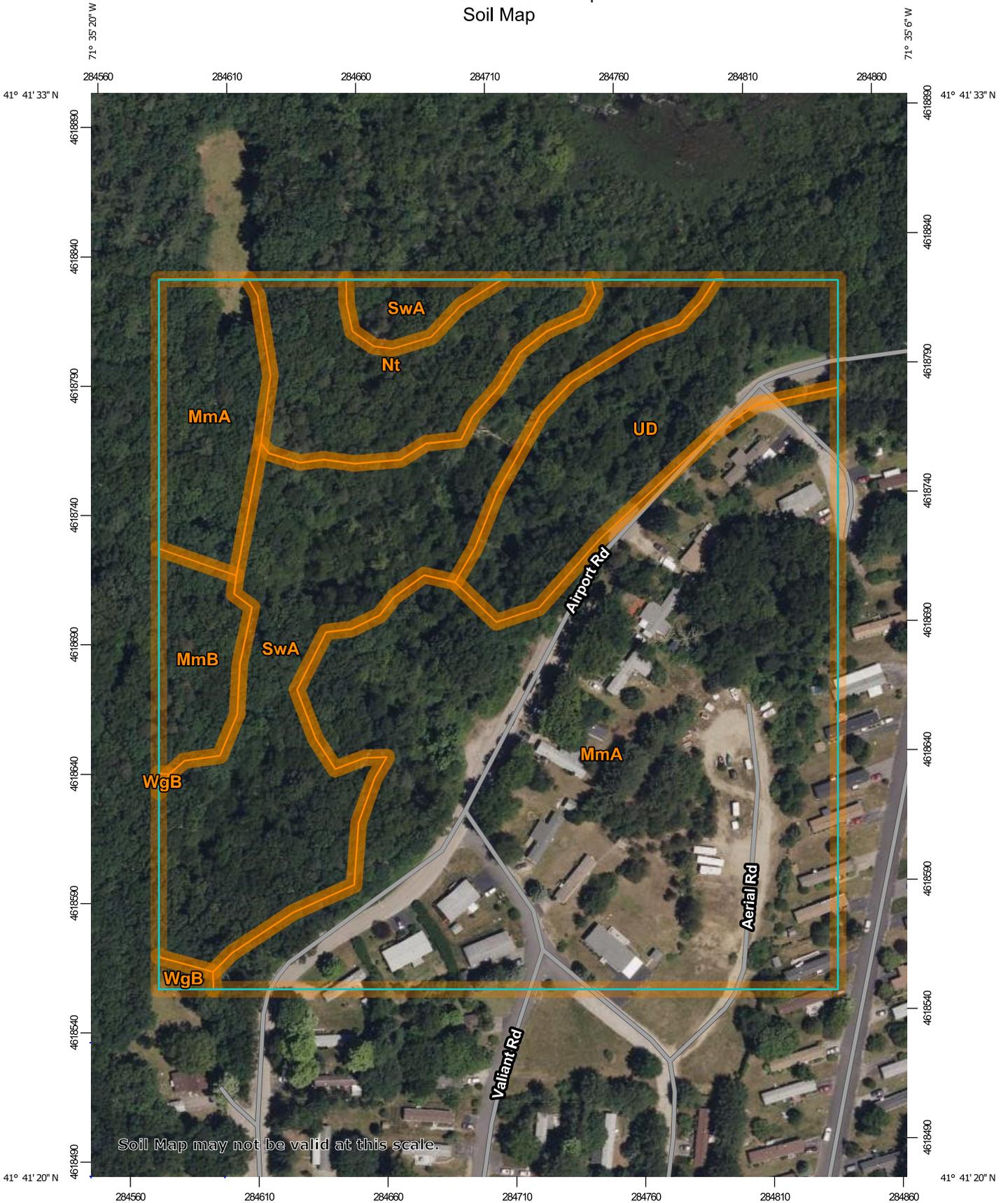
SCALE: AS SHOWN SHEET NO: 2 OF 2
 DRAWN BY: CJC DESIGN BY: SMA CHECKED BY: TJB
 DATE: 3/26/2025 PROJECT NO.: 25023.00

REVISIONS

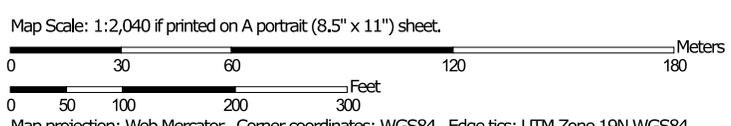
No.	DATE	DRWN	CHKD
1	05/27/25	SMA	TJB
2	06/06/25	SMA	TJB
3	06/24/25	SMA	TJB
4	12/01/25	SMA	TJB

APPENDIX C
USDA SOILS MAP

Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.



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

APPENDIX D
STORMWATER WORK SHEETS

PROPOSED STORAGE BUILDING
A.P. 43, LOTS 33 & 34
AIRPORT ROAD
COVENTRY, RI
FRESHWATER WETLANDS APPLICATION #IA-8629

PRE-POST STORMWATER SUMMARY TABLE MAY 12, 2025

	WQ PEAK DISCHARGE (CFS)	WQ PEAK VOLUME (ACRE-FEET)	1-YEAR PEAK DISCHARGE (CFS)	1-YEAR PEAK VOLUME (ACRE-FEET)	10-YEAR PEAK DISCHARGE (CFS)	10-YEAR PEAK VOLUME (ACRE-FEET)	100-YEAR PEAK DISCHARGE (CFS)	100-YEAR PEAK VOLUME (ACRE-FEET)
PRE-DEVELOPMENT CONDITIONS	0.25	0.041	2.26	0.34	8.96	1.211	27.71	3.627
POST-DEVELOPMENT CONDITIONS	0.03	0.018	2.23	0.331	8.59	1.161	27.57	3.462
REDUCTION	0.22	0.023	0.03	0.009	0.37	0.050	0.14	0.165

PRE-POST STORMWATER SUMMARY TABLE REVISED DECEMBER 1, 2025

	WQ PEAK DISCHARGE (CFS)	WQ PEAK VOLUME (ACRE-FEET)	1-YEAR PEAK DISCHARGE (CFS)	1-YEAR PEAK VOLUME (ACRE-FEET)	10-YEAR PEAK DISCHARGE (CFS)	10-YEAR PEAK VOLUME (ACRE-FEET)	100-YEAR PEAK DISCHARGE (CFS)	100-YEAR PEAK VOLUME (ACRE-FEET)
PRE-DEVELOPMENT CONDITIONS	0.25	0.041	2.26	0.34	8.96	1.211	27.71	3.627
POST-DEVELOPMENT CONDITIONS	0.03	0.018	2.23	0.331	8.59	1.162	27.60	3.461
REDUCTION	0.22	0.023	0.03	0.009	0.37	0.049	0.11	0.166



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PROPOSED STORAGE BUILDING	5/12/2025
A.P. 43, LOTS 33 & 34 AIRPORT ROAD COVENTRY, RI	
MINIMUM STANDARD 2 GROUNDWATER RECHARGE (Rev)	
Rev= (1") (F) (I)/12	
Rev= GROUNDWATER RECHARGE VOLUME	(AC-FT)
F= RECHARGE FACTOR	
I = IMPERVIOUS AREA IN ACRES	
PROPOSED ON-SITE IMPERVIOUS AREA-A SOILS	13455 S.F 0.309 ACRES
I = HSG TYPE D = 0.60	
Rev =	0.015 AC-FT 673 CF
TOTAL INFILTRATION REQUIRED=	673 CF
INFILTRATION PROVIDED=	1089 CF
VOLUME INFILTRATED GREATER THAN VOLUME REQUIRED (1,089>673), SO OKAY	
EXISTING OFF-SITE IMPERVIOUS AREA-A SOILS	11841 S.F 0.272 ACRES
I = HSG TYPE D = 0.60	
Rev =	0.014 AC-FT 592 CF
TOTAL INFILTRATION REQUIRED=	592 CF
INFILTRATION PROVIDED=	1045 CF
VOLUME INFILTRATED GREATER THAN VOLUME REQUIRED (1,045>592), SO OKAY	



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PROPOSED STORAGE BUILDING		5/12/2025	
A.P. 43, LOTS 33 & 34 AIRPORT ROAD COVENTRY, RI			
MINIMUM STANDARD 3: WATER QUALITY VOLUME (WQv)			
WQv= (1") (I)/12			
WQv= WATER QUALITY VOLUME (AC-FT) I = IMPERVIOUS AREA IN ACRES			
PROPOSED ASPHALT/ROOFS IMPERVIOUS AREA	13455 S.F. 0.309 ACRES		
WQv =	0.026 AC-FT 1121 CF		
	VOLUME REQUIRED	1121	CF
VOLUME INFILTRATED IS TOTAL FLOW GENERATED BY HYDROCAD, (1,089<1,121), SO OKAY	INFILTRATION VOLUME PROVIDED	1089	CF
OFF-SITE EXISTING IMPERVIOUS AREA	11841 S.F. 0.272 ACRES		
WQv =	0.023 AC-FT 987 CF		
	VOLUME REQUIRED	987	CF
VOLUME INFILTRATED IS TOTAL FLOW GENERATED BY HYDROCAD, (958<987), SO OKAY	INFILTRATION VOLUME PROVIDED	958	CF
PROPOSED STORAGE BUILDING		5/12/2025	
A.P. 43, LOTS 33 & 34 AIRPORT ROAD COVENTRY, RI			
MINIMUM STANDARD 4: CHANNEL PROTECTION VOLUME (CPv)			
COLD WATER FISHERY: NO CPv= Vs= (0.65) (Vr)			
	CPv=Vs= CHANNEL PROTECTION VOLUME (AC-FT)		
	Vr = RUNOFF VOLUME FROM 1-YEAR, TYPE III STORM (AC-FT)		
RUNOFF FROM 1-YEAR TYPE III STORM (Vr)	0.058 (AC-FT)		
CPv =	0.038 AC-FT 1642 CF		
INFILTRATION PROVIDED=	2526 CF	1-YEAR STORM VOLUME INFILTRATED ON SITE	
VOLUME INFILTRATED GREATER THAN VOLUME REQUIRED (2,525>1,642, SO OKAY)			



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MINIMUM STANDARD 5 : OVERBANK FLOOD PROTECTION					
EVALUATED FOR TOTAL SITE					
STORMWATER POST-DEVELOPMENT FLOW RATES (C.F.S.)					
10-YEAR			100-YEAR		
Q _{10X}	Q _{10P}	Δ	Q _{100X}	Q _{100P}	Δ
8.96	8.59	-0.37	27.71	27.57	-0.14
10-YEAR MITIGATION REQUIRED:			NO		
100-YEAR MITIGATION REQUIRED:			NO		

APPENDIX E
TEST PIT LOGS

TEST PIT FIELD LOG

COMMONWEALTH ENGINEERS AND CONSULTANTS, INC. 400 SMITH STRETT PROVIDENCE, RI 02908	PROJECT	TEST PIT NO.: TH-1
	DESCRIPTION: AIRPORT ROAD	FILE NO.: 25023
	PROPOSED STORAGE BUILDING	DATE: 5/2/2025
	LOCATION: COVENTRY RI	CHECKED BY: TJB

EXCAVATION EQUIPMENT

CEC ENGINEER: S. ANDRUS, PE	MAKE: JOHN DEERE	DATUM: NAVD88
WEATHER: CLOUDY, 55°F	MODEL: 210 EXCAVATOR	GROUND ELEV.: 247.5 FT
CONTRACTOR: OWNER	CAPACITY: 1 CY	TIME STARTED: 8:45
OPERATOR: MIKE BAIRD	REACH: 16 FT	TIME COMPLETED: 8:50

DEPTH (FEET)	SOIL DESCRIPTION	EXCAV. EFFORT	BOULDER COUNT	REMARKS	
1	TAN SANDY SUBSOIL	E			
2	BROWN STRATIFIED F-C SAND, TRC F-GRAVEL, TRC SILT				
3					
4					
5		E		1, 2, 3	
6					
7					
8		SOIL DAMP AT 8.0'			
9		GW SEEPAGE AT 9.0'			
10					
11					
12					
13					
14					

REMARKS: 1 NO MOTTILING OBSERVED
 2 SOILS DAMP AT -8.0
 3 GW SEEPAGE AT -9.0
 4 GWT ~ 8.0' BGS OR ELEV. 239.5'

TEST PIT PLAN	BOULDERS	PROPORTIONS	EXCAVATION EFFORT
DIMS.: L: 10'	6"-18" A	TRACE (TRC) 0-10%	EASY E
W: 6'	18"-36" B	LITTLE (LI) 10%-20%	MODERATE M
VOLUME (CY): -20	>36" C	SOME (SO) 20-35%	DIFFICEULT: D
NORTH ↑		And 35%-50%	GROUND WATER TABLE GWT

TEST PIT FIELD LOG							
COMMONWEALTH ENGINEERS AND CONSULTANTS, INC. 400 SMITH STRETET PROVIDENCE, RI 02908		PROJECT DESRPTION: AIRPORT ROAD PROPOSED STORAGE BUILDING LOCATION: COVENTRY RI		TEST PIT NO.: TH-2 FILE NO.: 25023 DATE: 5/2/2025 CHECKED BY: TJB			
EXCAVATION EQUIPMENT							
CEC ENGINEER: S. ANDRUS, PE WEATHER: CLOUDY, 55°F CONTRACTOR: OWNER OPERATOR: MIKE BAIRD		MAKE: JOHN DEERE MODEL: 210 EXCAVATOR CAPACITY: 1 CY REACH: 16 FT		DATUM: NAVD88 GROUND ELEV.: 250.0 FT TIME STARTED: 8:20 TIME COMPLETED: 8:40			
DEPTH (FEET)	SOIL DESCRIPTION			EXCAV. EFFORT	BOULDER COUNT	REMARKS	
1	FILL-BROWN SANDY SOIL WITH ROOTS, DEBRIS, BOULDERS AND COBBLES						
2							
3							
4					4-A		
5				M	2-B 1-C		
6							
7							
8							
9	TAN SANDY SUBSOIL			E			
10	BROWN STATIFIED F-C SAND, TRC F-GRAVEL, TRC SILT						
11				E		1, 2, 3	
12							
13							
14							
REMARKS: 1 NO MOTTILING OBSERVED 2 SOILS DRY AT ~11.0 3 GW SEEPAGE NOT OBSERVED 4 GWT > 11.0' BGS OR <ELEV. 239.0'							
TEST PIT PLAN		BOULDERS		PROPORTIONS		EXCAVATION EFFORT	
DIMS.:	L: 12'	6"-18"	A	TRACE (TRC)	0-10%	EASY	E
	W: 8'	18"-36"	B	LITTLE (LI)	10%-20%	MODERATE	M
	VOLUME (CY): ~35	>36"	C	SOME (SO)	20-35%	DIFFICEULT:	D
	NORTH ↑			And	35%-50%	GROUND WATER TABLE	GWT

TEST PIT FIELD LOG							
COMMONWEALTH ENGINEERS AND CONSULTANTS, INC. 400 SMITH STRETET PROVIDENCE, RI 02908		PROJECT DESRPTION: AIRPORT ROAD PROPOSED STORAGE BUILDING LOCATION: COVENTRY RI		TEST PIT NO.: TH-3 FILE NO.: 25023 DATE: 5/2/2025 CHECKED BY: TJB			
EXCAVATION EQUIPMENT							
CEC ENGINEER: S. ANDRUS, PE WEATHER: CLOUDY, 55 ⁰ F CONTRACTOR: OWNER OPERATOR: MIKE BAIRD		MAKE: JOHN DEERE MODEL: 210 EXCAVATOR CAPACITY: 1 CY REACH: 16 FT		DATUM: NAVD88 GROUND ELEV.: 249.5 FT TIME STARTED: 8:15 TIME COMPLETED: 8:30			
DEPTH (FEET)	SOIL DESCRIPTION			EXCAV. EFFORT	BOULDER COUNT	REMARKS	
1	FILL-BROWN SANDY SOIL WITH ROOTS, DEBRIS AND COBBLES			E			
2							
3							
4							
5							
6							
7	TAN SANDY SUBSOIL						
8				E			
9							
10	BROWN STATIFIED F-C SAND, TRC F-GRAVEL, TRC SILT						
11				E		1, 2, 3	
12							
13							
14							
REMARKS: 1 NO MOTTILING OBSERVED 2 SOILS DRY AT ~11.0 3 GW SEEPAGE NOT OBSERVED 4 GWT > 11.0' BGS OR <ELEV. 238.5'							
TEST PIT PLAN		BOULDERS		PROPORTIONS		EXCAVATION EFFORT	
DIMS.:	L: 10'	6"-18"	A	TRACE (TRC)	0-10%	EASY	E
	W: 6'	18"-36"	B	LITTLE (LI)	10%-20%	MODERATE	M
	VOLUME (CY): -24	>36"	C	SOME (SO)	20-35%	DIFFICEULT:	D
	NORTH ↑			And	35%-50%	GROUND WATER TABLE	GWT

TEST PIT FIELD LOG							
COMMONWEALTH ENGINEERS AND CONSULTANTS, INC. 400 SMITH STRETET PROVIDENCE, RI 02908		PROJECT DESRPTION: AIRPORT ROAD PROPOSED STORAGE BUILDING LOCATION: COVENTRY RI		TEST PIT NO.: TH-4 FILE NO.: 25023 DATE: 5/2/2025 CHECKED BY: TJB			
EXCAVATION EQUIPMENT							
CEC ENGINEER: S. ANDRUS, PE WEATHER: CLOUDY, 55 ⁰ F CONTRACTOR: OWNER OPERATOR: MIKE BAIRD		MAKE: JOHN DEERE MODEL: 210 EXCAVATOR CAPACITY: 1 CY REACH: 16 FT		DATUM: NAVD88 GROUND ELEV.: 249.5 FT TIME STARTED: 8:50 TIME COMPLETED: 8:10			
DEPTH (FEET)	SOIL DESCRIPTION			EXCAV. EFFORT	BOULDER COUNT	REMARKS	
1	TAN SANDY SUBSOIL			E			
2	BROWN STATIFIED F-C SAND, TRC F-GRAVEL, TRC SILT						
3							
4				E	1-A		
5							
6	GRAY F-SAND, TRC SILT						
7				E		1, 2, 3	
8							
9							
10							
11							
12							
13							
14							
REMARKS: 1 NO MOTTILING OBSERVED 2 SOILS DRY AT -9.0.0 3 GW SEEPAGE NOT OBSERVED 4 GWT > 10.0' BGS OR < ELEV. 240.0'							
TEST PIT PLAN		BOULDERS		PROPORTIONS		EXCAVATION EFFORT	
DIMS.:	L: 10'	6"-18"	A	TRACE (TRC)	0-10%	EASY	E
	W: 6'	18"-36"	B	LITTLE (LI)	10%-20%	MODERATE	M
	VOLUME (CY): -20	>36"	C	SOME (SO)	20-35%	DIFFICEULT:	D
	NORTH ↑			And	35%-50%	GROUND WATER TABLE	GWT