STORMWATER DESIGN PLAN

For

Proposed Storage Condo Units

At Land on Tiogue Avenue

Coventry, RI 02816

AP 28 / Lot 49

Prepared for:

Dante Real Estate II, LLC

2289 Flat River Road

Coventry, Rhode Island 02816

Dated May 2, 2025

Prepared by:
Coventry Survey Design Group
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Table of Contents

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Drainage Report

1.0 Introduction:

This report demonstrates that the proposed infiltration basins will offset the additional runoff generated by the proposed development and will treat the required water quality volume. The proposed development consists of a 10,000 SF building, new parking lot, and access drive. The design will utilize low-impact development best management practice (BMP) techniques to mitigate onsite stormwater. These techniques will consist of two pea gravel diaphragms for pretreatment, and two infiltration basin for recharge / water quality volume. All stormwater runoff will discharge towards the existing wetland area associated with the Mishnock River.

2.0 Methodology

This stormwater analysis is based on the computational algorithm using the *Soil Conservation Service Technical Release 55 Urban Hydrology for Small Watersheds* published June 1986. These computations use the Type III distribution hydrograph. Pre and post-development hydrograph conditions and detention basin design computations are based on the 1, 10, 25, and 100-year storm events. These storm events correspond to 24-hour rainfall depths of 2.7, 4.8, 6.1 and 8.7 inches respectively, based on the *Rhode Island Storm Water Design Manual*. This report will show that proposed runoff, as computed, will be at or below existing discharge rates as measured at the point of discharge using the above-mentioned BMPs onsite.

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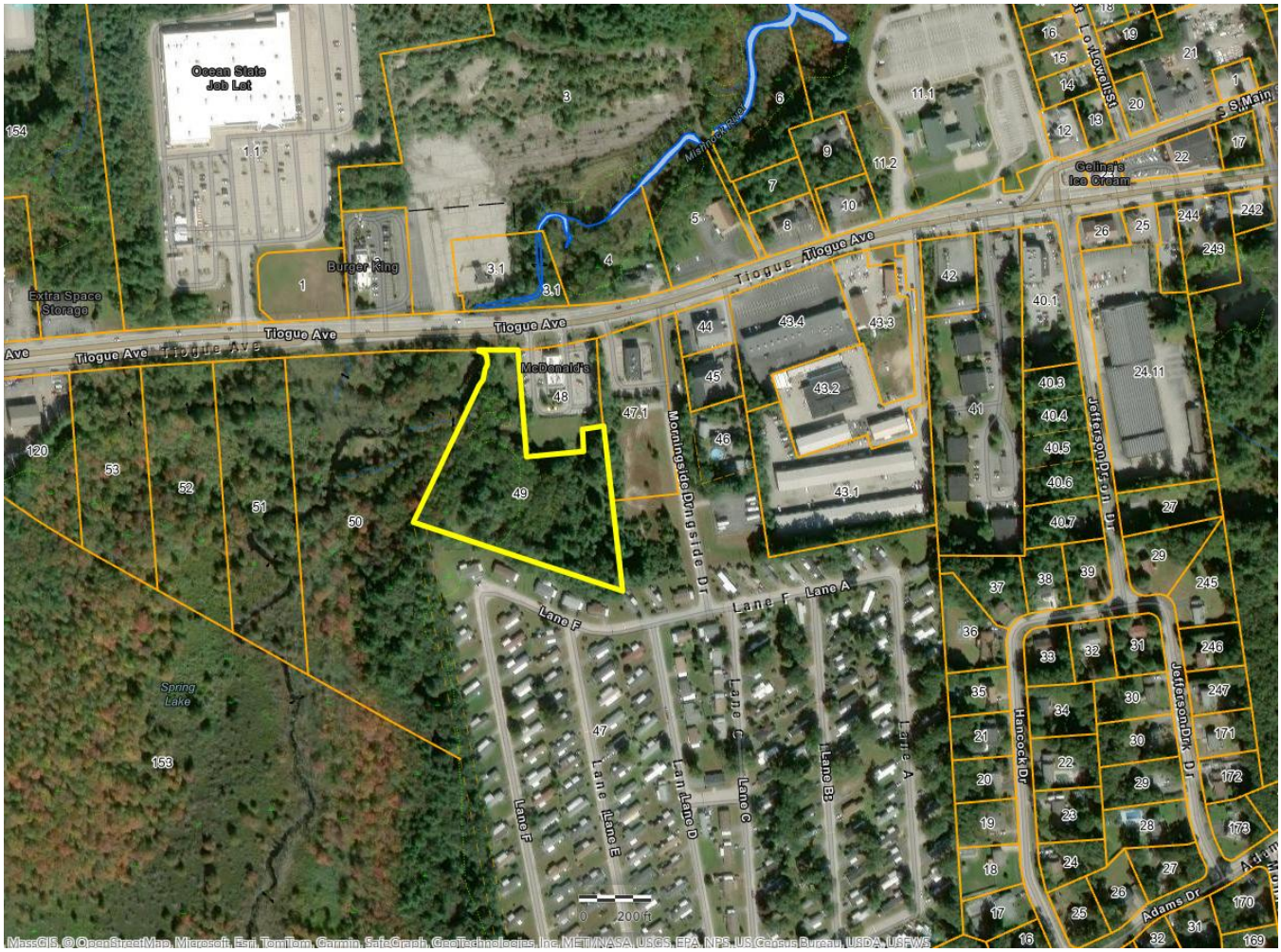
3.0 Existing Conditions:

The site is approximately 3.83 acres and is located on the south side of Tiogue Avenue. The site was previously developed in the 1970's, but there is currently no building on site. The site drains from east to west to the Mishnock River located on the adjacent property. There is a large wetland area located on that side of the property. The predominant soil is well draining, poorly graded, sandy gravel. The lot to the northeast of the site is a McDonald's and the lot south of the site is a mobile home park. Both lots are fully developed. The McDonald has a deeded drainage easement that crosses the frontage of the subject site.

Figure 1



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There are two main sub catchment areas for the site. Sub catchment area #1 consists of the proposed site, a small area of land to the south and east of the site, and the area between the site and the river. There are currently no conveyance or storm water management systems located on the site. Sub catchment area #2 consists of the water that drains into the McDonald's pipe network located adjacent to the property.

Design Point 1

Woods (forest):	258,839 SF
Grass (lawn):	76,123 SF
Roof	7,105 SF
Asphalt (parking lot and drive way)	34,186 SF
TOTAL	**376,253 SF**

4.0 Proposed Conditions

The proposed sitework consists of a 10,000 SF building, and 26,774 SF of paved area. The additional runoff will be treated by Infiltration Basins #1 and #2

Design Point 1

Woods (forest):	222,861 SF
Grass (lawn):	75526 SF
Roof	17,105 SF
Asphalt	60,760 SF
TOTAL	**376,253 SF**

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5.0 Stormwater Standards Compliance

As outlined in the Rhode Island Stormwater Design Manual, the eleven stormwater management criteria are applied to this project following the Wetlands Protection Bylaw, the Department of Environmental Management (DEM) Stormwater Management Policy. The requirements and compliance measures are listed below:

5.1 Minimum Standard 1: LID Site Planning and Design Strategies

The proposed site will use low-impact design elements per the *Rhode Island Stormwater Design Manual*. The proposed stormwater design meets all stormwater management requirements and the stormwater management plan checklist.

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5.2 Minimum Standard 2: Ground Water Recharge

The proposed additional impervious areas for the site are listed below.

Sub Catchment #3 (Infiltration Basin #1)

New paved parking lot:	16,551 SF
New storage building:	10,000 SF
Total impervious area:	26,551 SF

Required water recharge volume 26,551 SF x 1 inch x (1 FT /12 IN) x(0.60) = 1,327.55 CF

Provided static storage volume = 2,703 CF
Per Appendix "D" page 64 of the stormwater report

Provided static storage volume > required static storage volume

Sub Catchment #4 (Infiltration Basin #2)

New paved parking lot:	10,023 SF
Total impervious area:	10,023 SF

Required water recharge volume 10,023 SF x 1 inch x (1 FT/ 12 IN) x(0.60) = 501 CF

Provided static storage volume = 948 CF
Per Appendix "D" page 67 of the stormwater report

Provided static storage volume > required static storage volume

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5.3 Minimum Standard 3: Water Quality

Sub Catchment #3 (Infiltration Basin #1)

WQV from HydroCAD for the 1.2" Storm Event 2,179 CF. See Appendix D page 62 of the storm water report

Pretreatment calculation
25% of (2,179 CF) = 515 CF
Pea gravel diaphragm area = 778 SF
778*2' depth *.333 void ratio = 519 CF
519 CF > 515 CF, OK

Provided Storage Volume
75% of (2,062 CF) = 1,546.5 CF
Provided static storage @ elev. 253.00 = 2,703 CF
Per Appendix d page 64 of the storm water report
2,703 CF > 1546.5 CF ok

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Sub Catchment #4 (Infiltration Basin #2)

WQV from HydroCAD for the 1.2" Storm Event 823 CF. See Appendix D page 65 of the storm water report

Pretreatment calculation

25% of (823 CF) = 206 CF

Pea gravel diaphragm area = 778 SF

360'*2.0' depth *.333 void ratio = 240 CF

240 CF > 206 CF, OK

Provided Storage Volume

75% of (823 CF) = 617 CF

Provided static storage @ elev 245 = 948 CF

Per Appendix D page 67 of the storm water report

948 CF > 617 CF, OK

5.4 Minimum Standard 4: Conveyance and Natural Channel Protection

Vs = 0.65 * Vr

Vs for Sub catchment #1 9,466 CF
See HydroCAD Appendix B Page 9

Vs = 0.65(9,466CF) = 6152.9 CF
= 6152.9CF /24 hour /60 min /60 sec= 0.0712 CFS

Sub catchment #2 7,027 CF
See HydroCAD Appendix B page 11

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Vs = 0.65(7,027CF) = 4,567.55 CF
4567.55CF /24 hour /60 min /60 sec 0.053 cfs

Provided flow on the 1-year storm event

Both infiltration basins infiltrate the 1-year storm events. Therefore the Vs provided is 0 CFS for both sub catchment areas.

5.5 Minimum Standard 5: Overbank Flood Protection

Peak flow for the 1, 10, 25 and 100-year storm events are based on HydroCAD calculations provided in Appendix "B" and Appendix "D". The table below provides a comparison of the peak flow for the existing and proposed conditions.

TABLE 5-1: PEAK STORMWATER COMPARISON TABLE Design Point 1*

Benchmark Storm Event	Existing Conditions (CFS)	Proposed Conditions (CFS)
1-Year Storm	3.45	3.45
10-Year Storm	10.46	10.30
25-year Storm	16.92	15.13
100-Year Storm	30.18	28.63

* Please note that HydroCAD model is showing a slight increase in the peak flow in sub catchment #1 for both the 1.2 inch storm event and the 1 Year storm event because some land had been removed from it. Since is not physically possible, HydroCAD was run using the "Separated CN Method" as opposed to a "Composite CN Method" to correct for this.

TABLE 5-1: TOTAL STORMWATER RUNOFF COMPARISON TABLE Design Point 1

Benchmark Storm Event	Existing Conditions (CF)	Proposed Conditions (CF)
1-Year Storm	16,473	15,909
10-Year Storm	46,763	44,788
25-year Storm	72,575	64,888
100-Year Storm	125,970	116,139

5.6 Minimum Standard 6: Redevelopment and Infill Project

The site does meet the requirements for a redevelopment or infill project.

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5.7 Minimum Standard 7: Pollution Prevention Plan

An operation and maintenance plan and long-term pollution prevention plan are included as a separate report in this submission.

5.8 Minimum Standard 8: Land Uses with Higher Potential Pollutant Loads (LUHPPL's)

The site is not a LUHPPL.

5.9 Minimum Standard 9: Illicit Discharges

No illicit discharges are proposed on the site.

5.10 Minimum Standard 10: soil erosion and construction pollution prevention plan

A soil erosion and construction pollution prevention plan has been developed and included as a separate report in this submission.

6.0 conclusion

The proposed site design meets all the minimum standards. Due to the high infiltration rate of the soil infiltration basins were chosen for the design as this will mimic existing conditions and infiltrate most of the water leaving the site.

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STORMWATER REPORT APPENDIX - A

EXISTING WATERSHED MAP

Legend:

- Soil Type Boundary
- Contributing Watershed Area
- Time of Concentration Line (Also ASSF)
- Parcel of Interest Property Line
- Existing Contour Line
- Area Subject to Stormwater Flow
- Flagged Wetland Edge
- Wetland Buffer

SOIL FeA

TIOGUE AVENUE
(STATE OWNED - WIDTH VARIES)

AP 28 / LOT 48
MCDONALDS REAL ESTATE CO.
EXISTING AREA=62,736 SF (1.44 ACRES)
PROPOSED AREA= 52,455 SF (1.20 ACRES)

#1080

AP 28 / LOT 47.1
N/F KAUFMAN ASSOCIATES INC.

SUP116-2

WETLAND A EDGE

POINT D

TC LINE SECTION CD

2S SUBCATCHMENT #2
AREA 61,356 SF
CN WEIGHTED: 72
TC: 8.8 MINS

TH #1

SOIL HkC

POINT B

POINT A

POINT C

E 219.70'

150' RIPARIAN BUFFER

SE #1

AP 28 / LOT 50
N/F EUGENE & LEONI DENIGER

N40°E

150' BUFFER

TH #2

SE #2

TH #3

RIVER EDGE

SOIL FeA

SOIL ChC

POINT D
DESIGN
POINT

1S SUBCATCHMENT #1
AREA: 307,792 SF
CN WEIGHT AVERAGE: 59
TC: 13.0 MINS

WETLAND A EDGE

75' WETLAND BUFFER

TC LINE SECTION CD

75' BUFFER

SOIL Pg
HSG A

TH #4

POINT C

AP 28 / LOT 49
N/F DANTE REAL ESTATE II, LLC
EXISTING AREA=157,964 SF (3.63 ACRES)
PROPOSED AREA=168,244 SF (3.86 ACRES)

TC LINE SECTION BC

AP 28 / LOT 47
N/F MAPLEROOT CORPORATION

OLD ASHROCK HIGHWAY

100'

POINT B

POINT A

TC LINE SECTION AB

SOIL CdA

LANE F

Graphic Scale — Scale in feet: 1"=40'
0 20 40 80 120 160

Revisions:

SAMUEL R. SUORSA
No. 21508
PROFESSIONAL LAND SURVEYOR

JOHN W. HAMPTON
No. 12485
REGISTERED PROFESSIONAL ENGINEER
CIVIL

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DANTE PLAT

EXISTING WATERSHED MAP
OF LAND ON TIOGUE AVENUE
IN THE TOWN OF COVENTRY, RHODE ISLAND
ASSESSOR'S PLAT 28 / LOTS 48 & 49

PREPARED FOR: MICHAEL SACCOCCIA
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401-439-5005 | mikesaccoccia@cox.net

DRAWN BY:	JWH
APPROVED BY:	JWH
APPROVED BY:	JWH

DATE
01-28-2025

SHEET 1 OF 12

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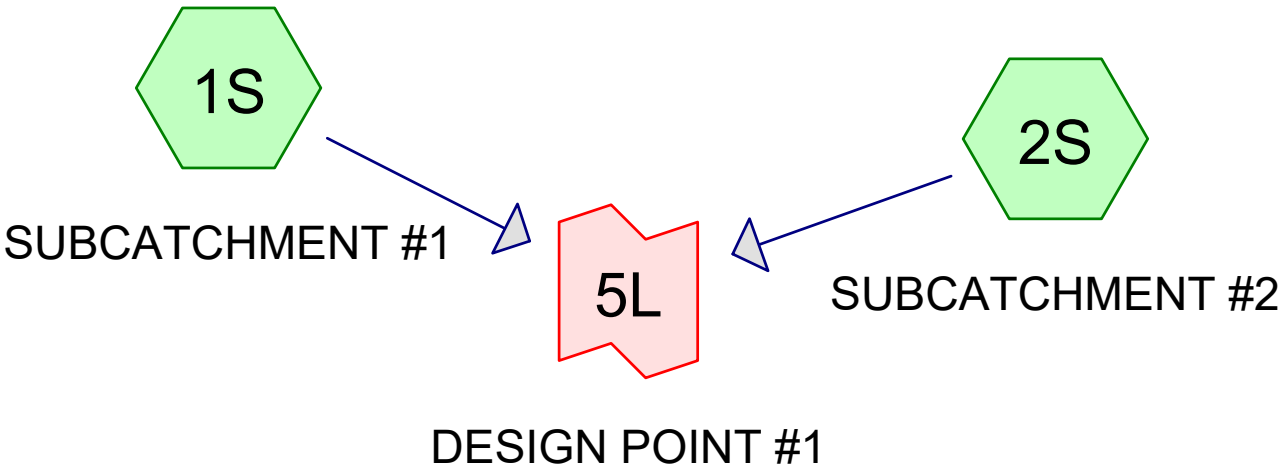
STORMWATER REPORT APPENDIX - B

EXISTING HYDROCAD MODELING



Subcat Reach Pond Link

Routing Diagram for existing conditions
Prepared by Arthur R Cripps, Jr, PE, Printed 5/15/2025

Project Notes

Rainfall events imported from "EXISTING CONDITIONS PLAN.hcp"

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1YEAR	Type III 24-hr		Default	24.00	1	2.70	2
2	10-YEAR	Type III 24-hr		Default	24.00	1	4.80	2
3	25-YEAR	Type III 24-hr		Default	24.00	1	6.20	2
4	100-YEAR	Type III 24-hr		Default	24.00	1	8.70	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
41,495	39	>75% Grass cover, Good, HSG A (1S, 2S)
34,034	61	>75% Grass cover, Good, HSG B (1S)
594	80	>75% Grass cover, Good, HSG D (1S)
34,186	98	Paved parking, HSG B (2S)
7,105	98	Roofs, HSG B (1S)
34,363	30	Woods, Good, HSG A (1S)
144,945	55	Woods, Good, HSG B (1S)
79,531	77	Woods, Good, HSG D (1S)
376,253	**61**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
75,858	HSG A	1S, 2S
220,270	HSG B	1S, 2S
0	HSG C	
80,125	HSG D	1S
0	Other	
376,253		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
41,495	34,034	0	594	0	76,123	>75% Grass cover, Good	
0	34,186	0	0	0	34,186	Paved parking	
0	7,105	0	0	0	7,105	Roofs	
34,363	144,945	0	79,531	0	258,839	Woods, Good	
75,858	**220,270**	**0**	**80,125**	**0**	**376,253**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	2S	0.00	0.00	150.0	0.0100	0.013	0.0	12.0	0.0
2	2S	0.00	0.00	50.0	0.0250	0.013	0.0	18.0	0.0

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SUBCATCHMENT#1 Runoff Area=314,897 sf 2.26% Impervious Runoff Depth>0.36"
Flow Length=861' Tc=13.0 min CN=WQ Runoff=1.79 cfs 9,446 cf

Subcatchment 2S: SUBCATCHMENT#2 Runoff Area=61,356 sf 55.72% Impervious Runoff Depth>1.37"
Flow Length=375' Tc=10.1 min CN=WQ Runoff=1.77 cfs 7,027 cf

Link 5L: DESIGN POINT #1 Inflow=3.46 cfs 16,473 cf
Primary=3.46 cfs 16,473 cf

Total Runoff Area = 376,253 sf Runoff Volume = 16,473 cf Average Runoff Depth = 0.53"
89.03% Pervious = 334,962 sf 10.97% Impervious = 41,291 sf

Summary for Subcatchment 1S: SUBCATCHMENT #1

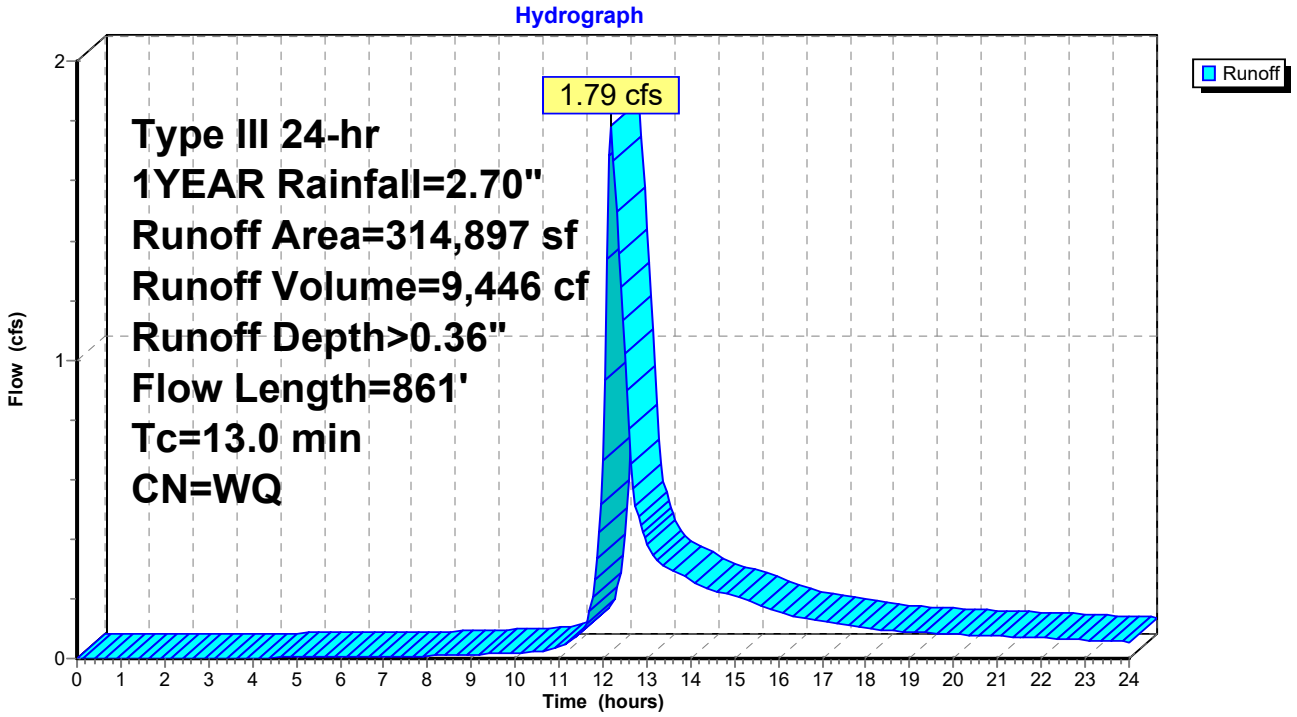
Runoff = 1.79 cfs @ 12.20 hrs, Volume= 9,446 cf, Depth> 0.36"
Routed to Link 5L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1YEAR Rainfall=2.70"

Area (sf)	CN	Description
34,034	61	>75% Grass cover, Good, HSG B
595	98	Roofs, HSG B
1,549	98	Roofs, HSG B
661	98	Roofs, HSG B
816	98	Roofs, HSG B
1,145	98	Roofs, HSG B
654	98	Roofs, HSG B
136,422	55	Woods, Good, HSG B
8,523	55	Woods, Good, HSG B
594	80	>75% Grass cover, Good, HSG D
79,531	77	Woods, Good, HSG D
34,363	30	Woods, Good, HSG A
14,325	39	>75% Grass cover, Good, HSG A
816	98	Roofs, HSG B
529	98	Roofs, HSG B
340	98	Roofs, HSG B
314,897		Weighted Average
307,792	58	97.74% Pervious Area
7,105	98	2.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.4	340	0.0625	4.03		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.8	421	0.0250	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.0	861	Total			

Subcatchment 1S: SUBCATCHMENT #1



Summary for Subcatchment 2S: SUBCATCHMENT #2

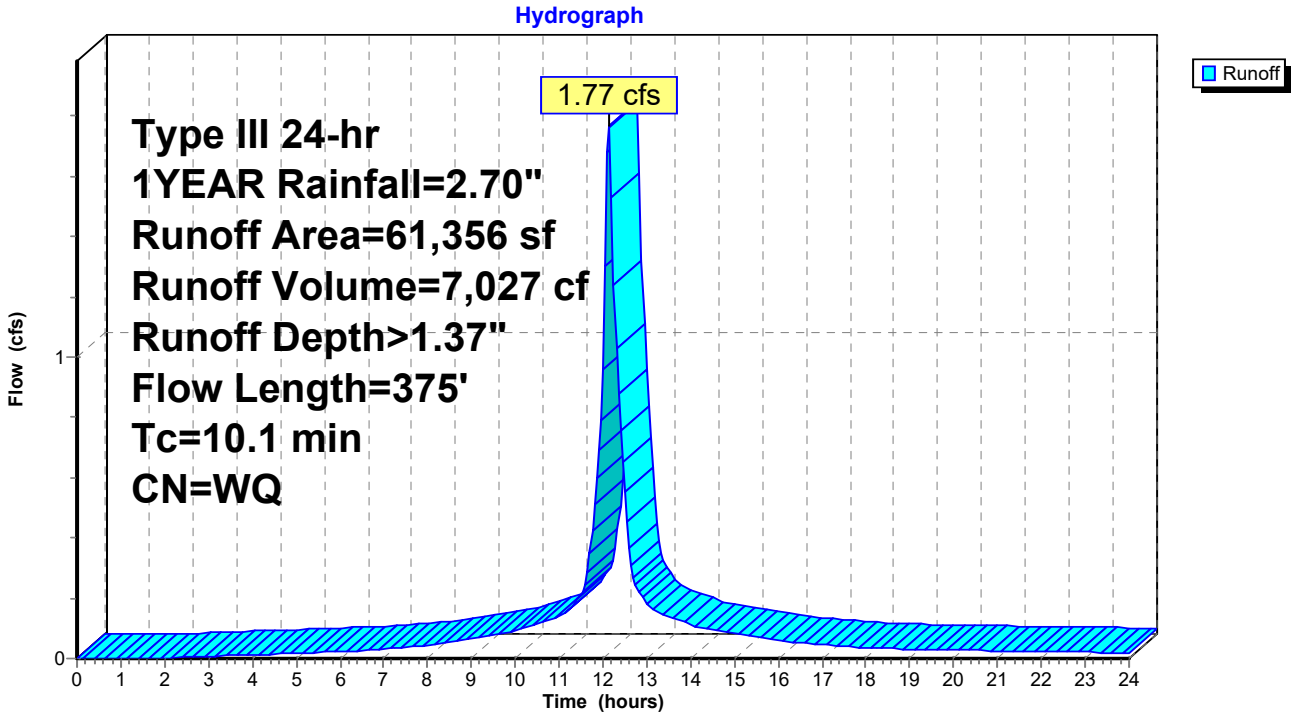
Runoff = 1.77 cfs @ 12.14 hrs, Volume= 7,027 cf, Depth> 1.37"
Routed to Link 5L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1YEAR Rainfall=2.70"

Area (sf)	CN	Description
2,432	39	>75% Grass cover, Good, HSG A
34,186	98	Paved parking, HSG B
17,480	39	>75% Grass cover, Good, HSG A
4,187	39	>75% Grass cover, Good, HSG A
3,071	39	>75% Grass cover, Good, HSG A
61,356		Weighted Average
27,170	39	44.28% Pervious Area
34,186	98	55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0450	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.7	125	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	150	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.1	50	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
10.1	375	Total			

Subcatchment 2S: SUBCATCHMENT #2

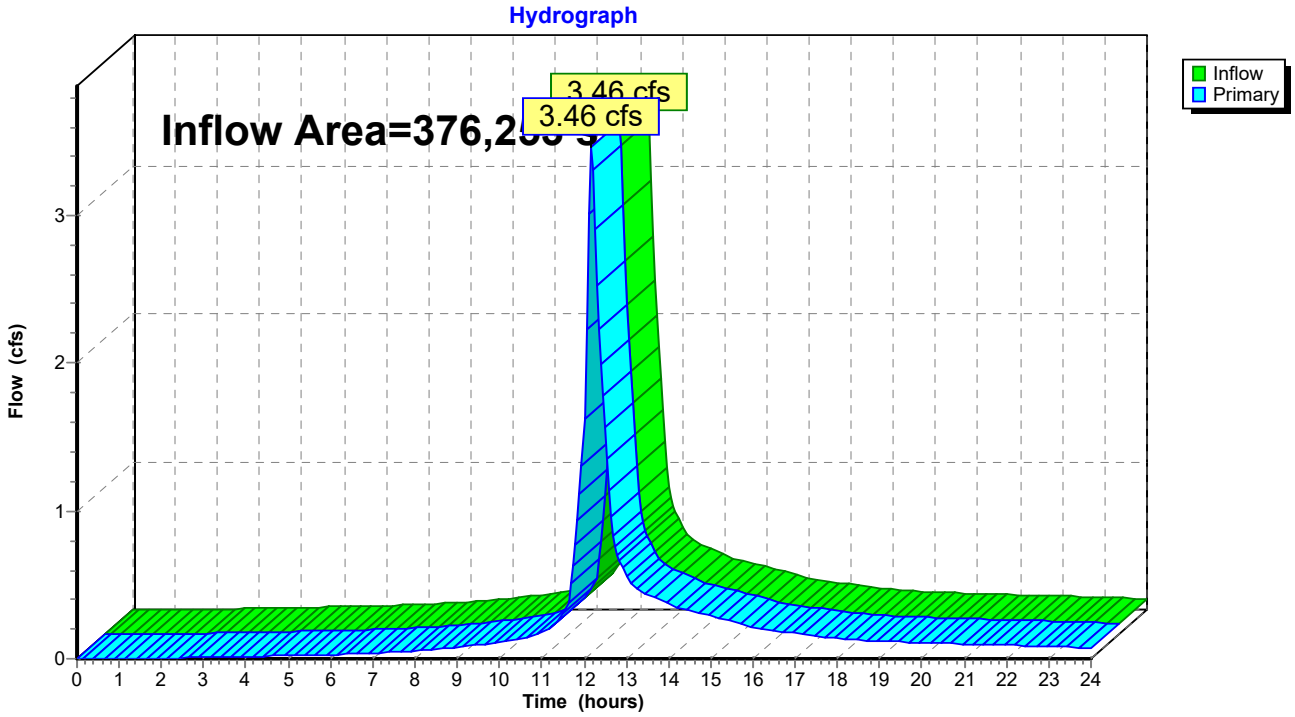


Summary for Link 5L: DESIGN POINT #1

Inflow Area = 376,253 sf, 10.97% Impervious, Inflow Depth > 0.53" for 1YEAR event
Inflow = 3.46 cfs @ 12.16 hrs, Volume= 16,473 cf
Primary = 3.46 cfs @ 12.16 hrs, Volume= 16,473 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 5L: DESIGN POINT #1



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SUBCATCHMENT#1 Runoff Area=314,897 sf 2.26% Impervious Runoff Depth>1.27"
Flow Length=861' Tc=13.0 min CN=WQ Runoff=7.62 cfs 33,415 cf

Subcatchment 2S: SUBCATCHMENT#2 Runoff Area=61,356 sf 55.72% Impervious Runoff Depth>2.61"
Flow Length=375' Tc=10.1 min CN=WQ Runoff=3.18 cfs 13,348 cf

Link 5L: DESIGN POINT #1 Inflow=10.49 cfs 46,763 cf
Primary=10.49 cfs 46,763 cf

Total Runoff Area = 376,253 sf Runoff Volume = 46,763 cf Average Runoff Depth = 1.49"
89.03% Pervious = 334,962 sf 10.97% Impervious = 41,291 sf

Summary for Subcatchment 1S: SUBCATCHMENT #1

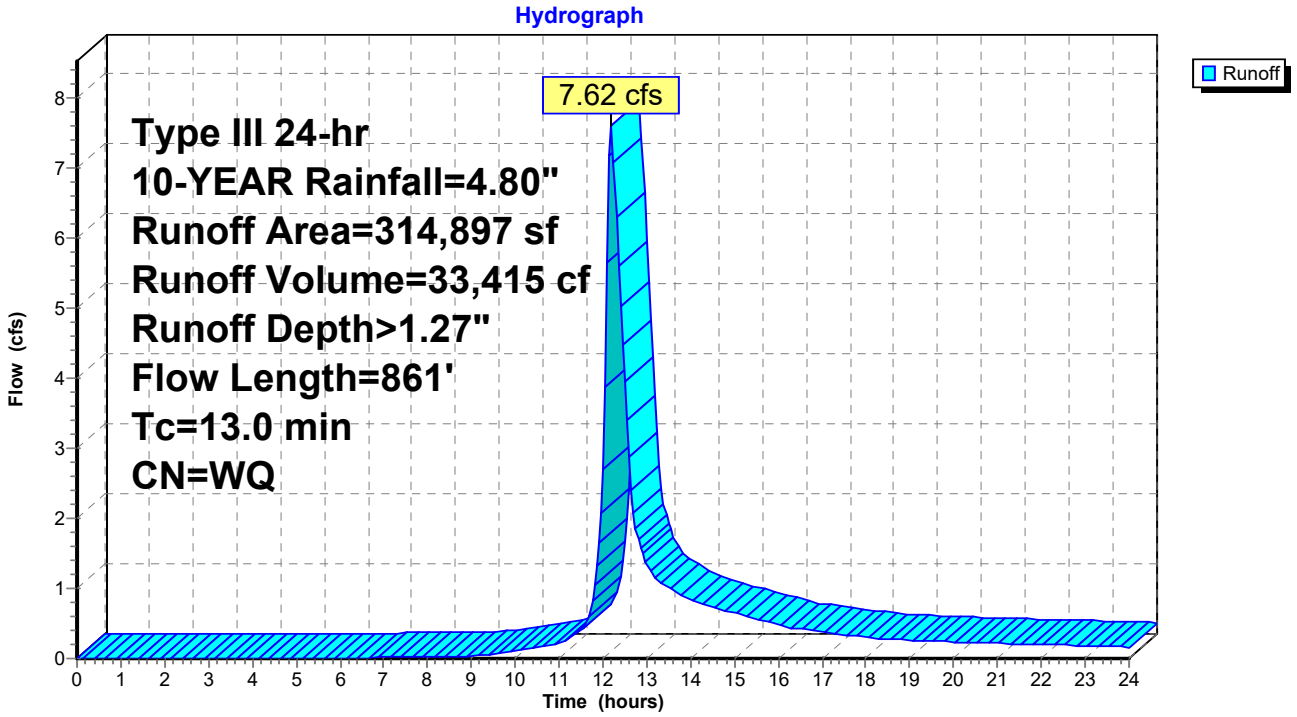
Runoff = 7.62 cfs @ 12.20 hrs, Volume= 33,415 cf, Depth> 1.27"
Routed to Link 5L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

Area (sf)	CN	Description
34,034	61	>75% Grass cover, Good, HSG B
595	98	Roofs, HSG B
1,549	98	Roofs, HSG B
661	98	Roofs, HSG B
816	98	Roofs, HSG B
1,145	98	Roofs, HSG B
654	98	Roofs, HSG B
136,422	55	Woods, Good, HSG B
8,523	55	Woods, Good, HSG B
594	80	>75% Grass cover, Good, HSG D
79,531	77	Woods, Good, HSG D
34,363	30	Woods, Good, HSG A
14,325	39	>75% Grass cover, Good, HSG A
816	98	Roofs, HSG B
529	98	Roofs, HSG B
340	98	Roofs, HSG B
314,897		Weighted Average
307,792	58	97.74% Pervious Area
7,105	98	2.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.4	340	0.0625	4.03		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.8	421	0.0250	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.0	861	Total			

Subcatchment 1S: SUBCATCHMENT #1



Summary for Subcatchment 2S: SUBCATCHMENT #2

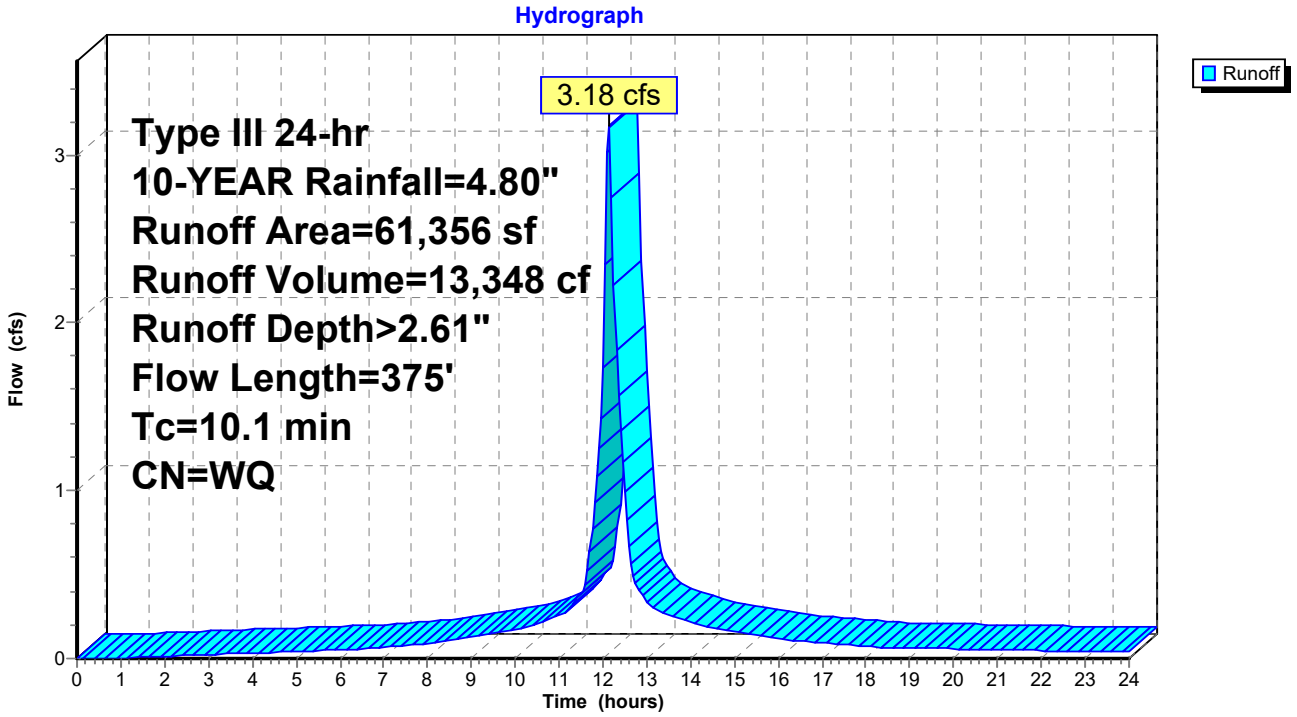
Runoff = 3.18 cfs @ 12.14 hrs, Volume= 13,348 cf, Depth> 2.61"
Routed to Link 5L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YEAR Rainfall=4.80"

Area (sf)	CN	Description
2,432	39	>75% Grass cover, Good, HSG A
34,186	98	Paved parking, HSG B
17,480	39	>75% Grass cover, Good, HSG A
4,187	39	>75% Grass cover, Good, HSG A
3,071	39	>75% Grass cover, Good, HSG A
61,356		Weighted Average
27,170	39	44.28% Pervious Area
34,186	98	55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0450	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.7	125	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	150	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.1	50	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
10.1	375	Total			

Subcatchment 2S: SUBCATCHMENT #2

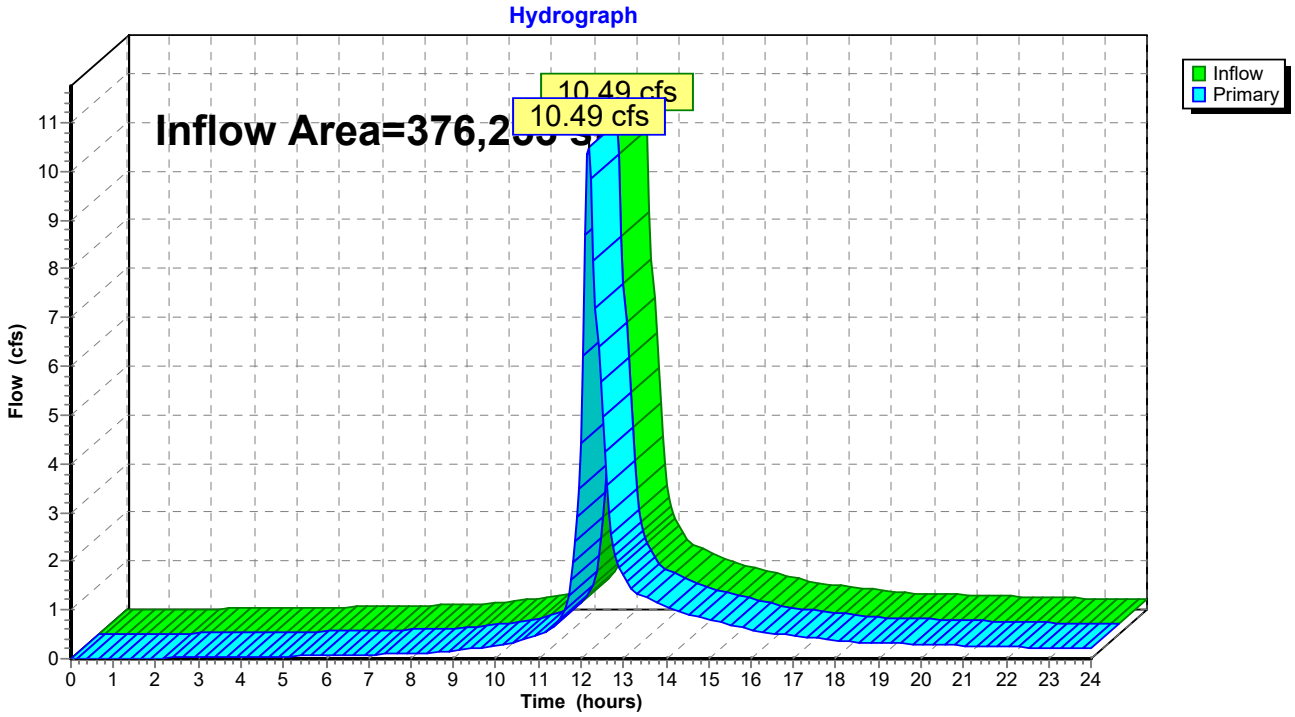


Summary for Link 5L: DESIGN POINT #1

Inflow Area = 376,253 sf, 10.97% Impervious, Inflow Depth > 1.49" for 10-YEAR event
Inflow = 10.49 cfs @ 12.18 hrs, Volume= 46,763 cf
Primary = 10.49 cfs @ 12.18 hrs, Volume= 46,763 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 5L: DESIGN POINT #1



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SUBCATCHMENT#1 Runoff Area=314,897 sf 2.26% Impervious Runoff Depth>2.08"
Flow Length=861' Tc=13.0 min CN=WQ Runoff=12.99 cfs 54,474 cf

Subcatchment 2S: SUBCATCHMENT#2 Runoff Area=61,356 sf 55.72% Impervious Runoff Depth>3.54"
Flow Length=375' Tc=10.1 min CN=WQ Runoff=4.16 cfs 18,101 cf

Link 5L: DESIGN POINT #1 Inflow=16.92 cfs 72,575 cf
Primary=16.92 cfs 72,575 cf

Total Runoff Area = 376,253 sf Runoff Volume = 72,575 cf Average Runoff Depth = 2.31"
89.03% Pervious = 334,962 sf 10.97% Impervious = 41,291 sf

Summary for Subcatchment 1S: SUBCATCHMENT #1

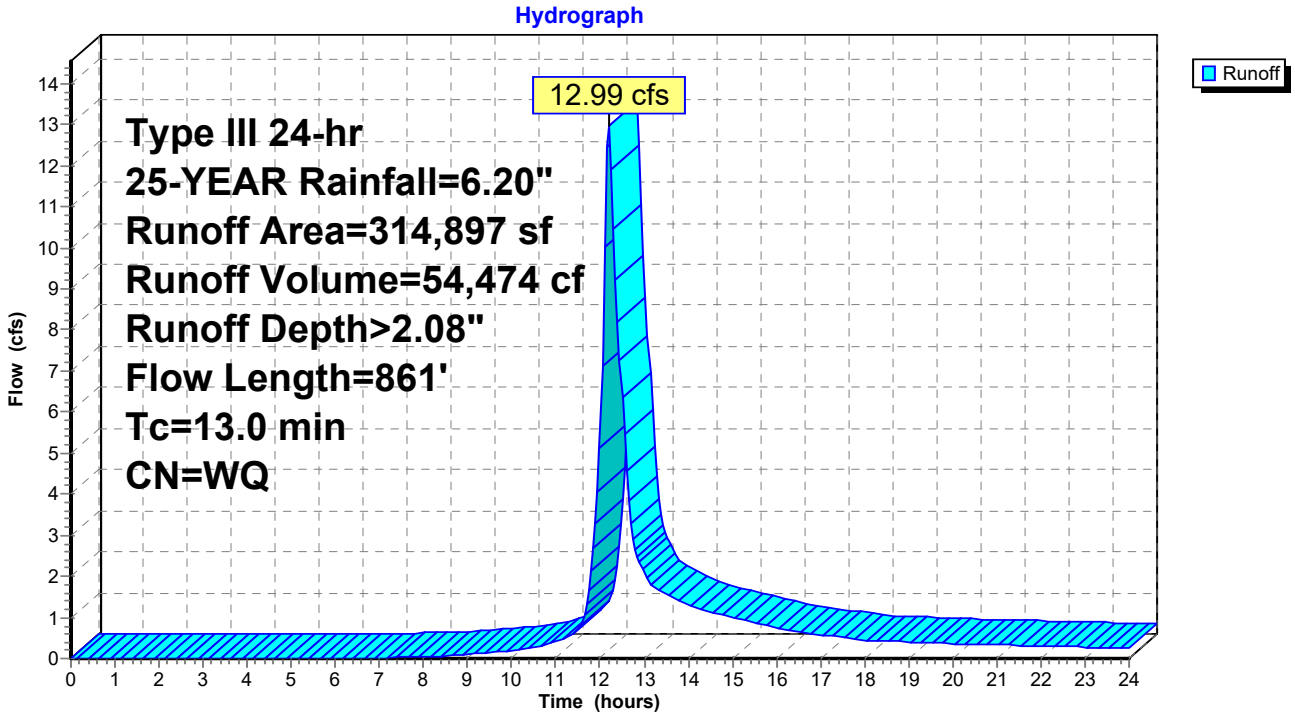
Runoff = 12.99 cfs @ 12.19 hrs, Volume= 54,474 cf, Depth> 2.08"
Routed to Link 5L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
34,034	61	>75% Grass cover, Good, HSG B
595	98	Roofs, HSG B
1,549	98	Roofs, HSG B
661	98	Roofs, HSG B
816	98	Roofs, HSG B
1,145	98	Roofs, HSG B
654	98	Roofs, HSG B
136,422	55	Woods, Good, HSG B
8,523	55	Woods, Good, HSG B
594	80	>75% Grass cover, Good, HSG D
79,531	77	Woods, Good, HSG D
34,363	30	Woods, Good, HSG A
14,325	39	>75% Grass cover, Good, HSG A
816	98	Roofs, HSG B
529	98	Roofs, HSG B
340	98	Roofs, HSG B
314,897		Weighted Average
307,792	58	97.74% Pervious Area
7,105	98	2.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.4	340	0.0625	4.03		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.8	421	0.0250	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.0	861	Total			

Subcatchment 1S: SUBCATCHMENT #1



Summary for Subcatchment 2S: SUBCATCHMENT #2

[47] Hint: Peak is 117% of capacity of segment #3

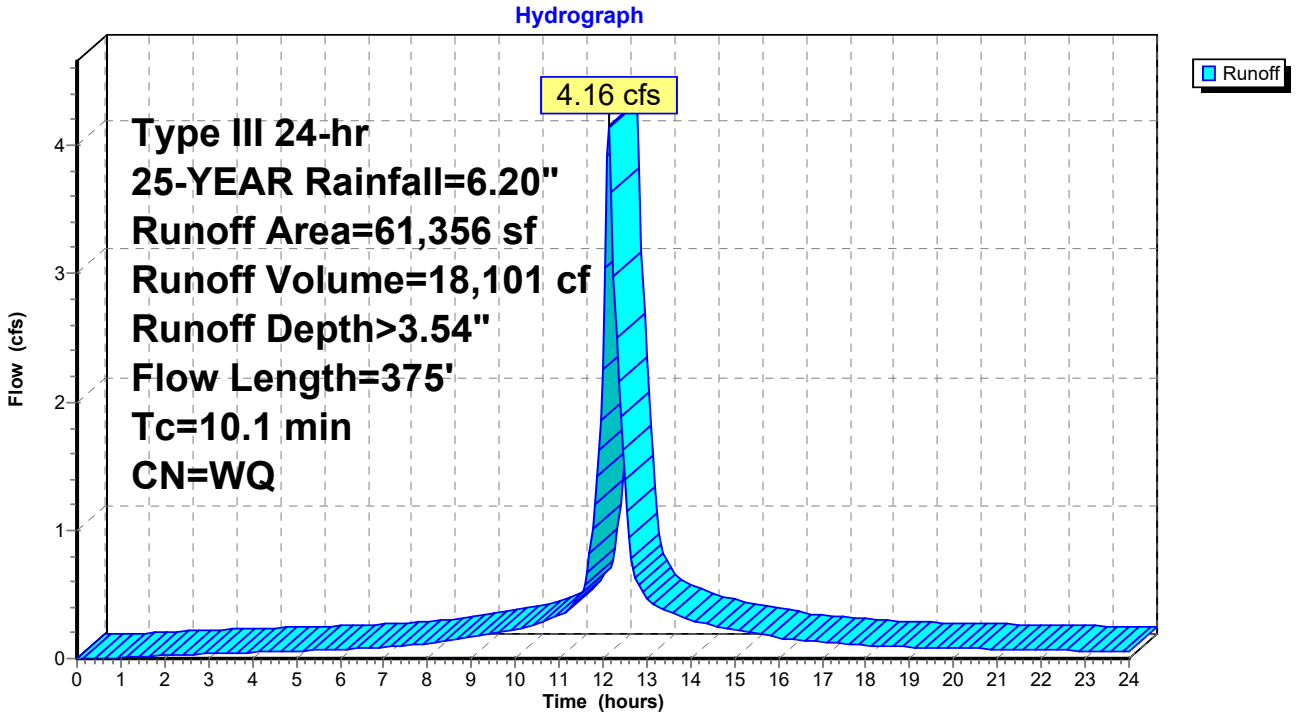
Runoff = 4.16 cfs @ 12.14 hrs, Volume= 18,101 cf, Depth> 3.54"
Routed to Link 5L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.20"

Area (sf)	CN	Description
2,432	39	>75% Grass cover, Good, HSG A
34,186	98	Paved parking, HSG B
17,480	39	>75% Grass cover, Good, HSG A
4,187	39	>75% Grass cover, Good, HSG A
3,071	39	>75% Grass cover, Good, HSG A
61,356		Weighted Average
27,170	39	44.28% Pervious Area
34,186	98	55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0450	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.7	125	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	150	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.1	50	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
10.1	375	Total			

Subcatchment 2S: SUBCATCHMENT #2

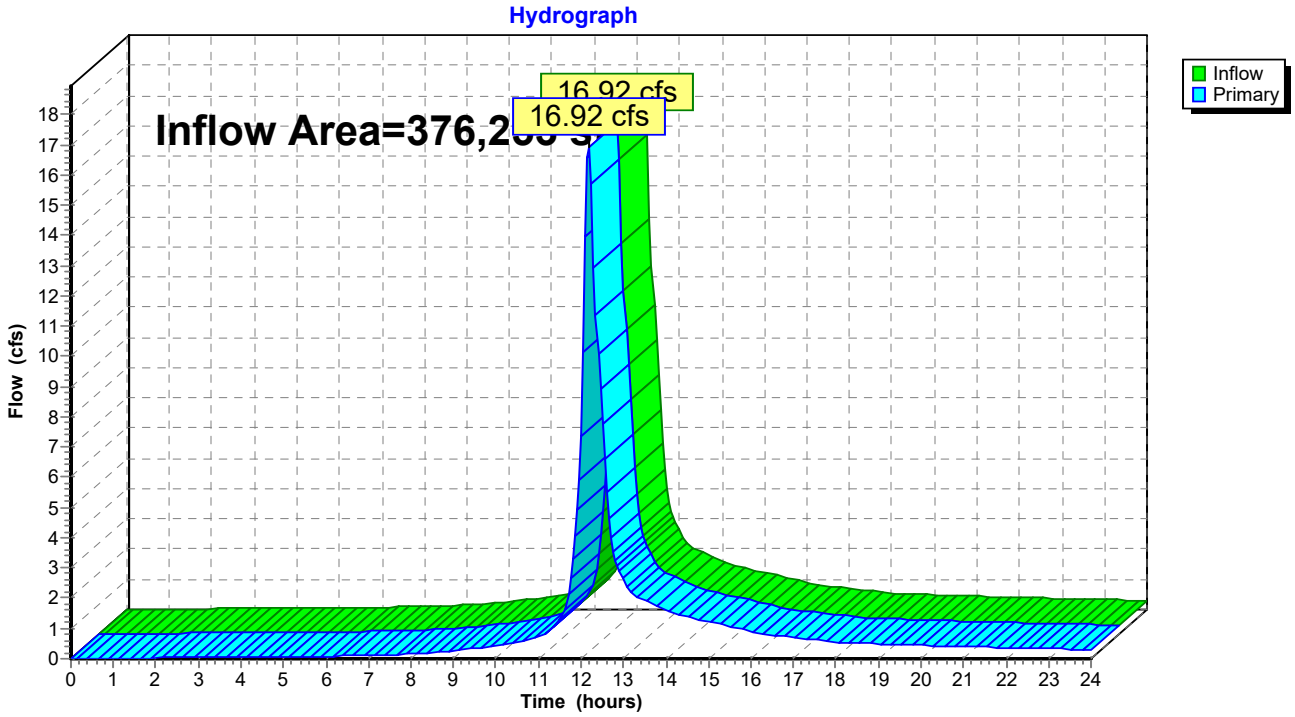


Summary for Link 5L: DESIGN POINT #1

Inflow Area = 376,253 sf, 10.97% Impervious, Inflow Depth > 2.31" for 25-YEAR event
Inflow = 16.92 cfs @ 12.17 hrs, Volume= 72,575 cf
Primary = 16.92 cfs @ 12.17 hrs, Volume= 72,575 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 5L: DESIGN POINT #1



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SUBCATCHMENT#1 Runoff Area=314,897 sf 2.26% Impervious Runoff Depth>3.76"
Flow Length=861' Tc=13.0 min CN=WQ Runoff=24.05 cfs 98,594 cf

Subcatchment 2S: SUBCATCHMENT#2 Runoff Area=61,356 sf 55.72% Impervious Runoff Depth>5.35"
Flow Length=375' Tc=10.1 min CN=WQ Runoff=6.41 cfs 27,376 cf

Link 5L: DESIGN POINT #1 Inflow=30.24 cfs 125,970 cf
Primary=30.24 cfs 125,970 cf

Total Runoff Area = 376,253 sf Runoff Volume = 125,970 cf Average Runoff Depth = 4.02"
89.03% Pervious = 334,962 sf 10.97% Impervious = 41,291 sf

Summary for Subcatchment 1S: SUBCATCHMENT #1

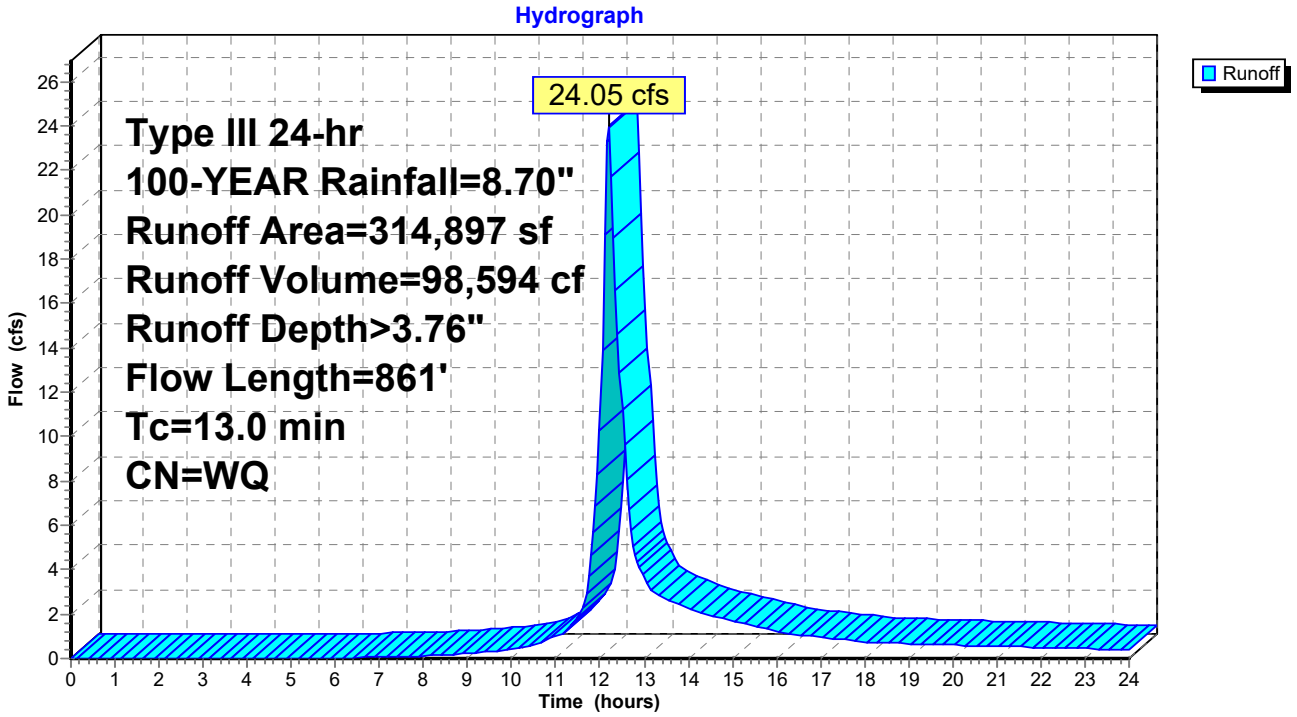
Runoff = 24.05 cfs @ 12.19 hrs, Volume= 98,594 cf, Depth> 3.76"
Routed to Link 5L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

Area (sf)	CN	Description
34,034	61	>75% Grass cover, Good, HSG B
595	98	Roofs, HSG B
1,549	98	Roofs, HSG B
661	98	Roofs, HSG B
816	98	Roofs, HSG B
1,145	98	Roofs, HSG B
654	98	Roofs, HSG B
136,422	55	Woods, Good, HSG B
8,523	55	Woods, Good, HSG B
594	80	>75% Grass cover, Good, HSG D
79,531	77	Woods, Good, HSG D
34,363	30	Woods, Good, HSG A
14,325	39	>75% Grass cover, Good, HSG A
816	98	Roofs, HSG B
529	98	Roofs, HSG B
340	98	Roofs, HSG B
314,897		Weighted Average
307,792	58	97.74% Pervious Area
7,105	98	2.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.4	340	0.0625	4.03		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.8	421	0.0250	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.0	861	Total			

Subcatchment 1S: SUBCATCHMENT #1



Summary for Subcatchment 2S: SUBCATCHMENT #2

[47] Hint: Peak is 180% of capacity of segment #3

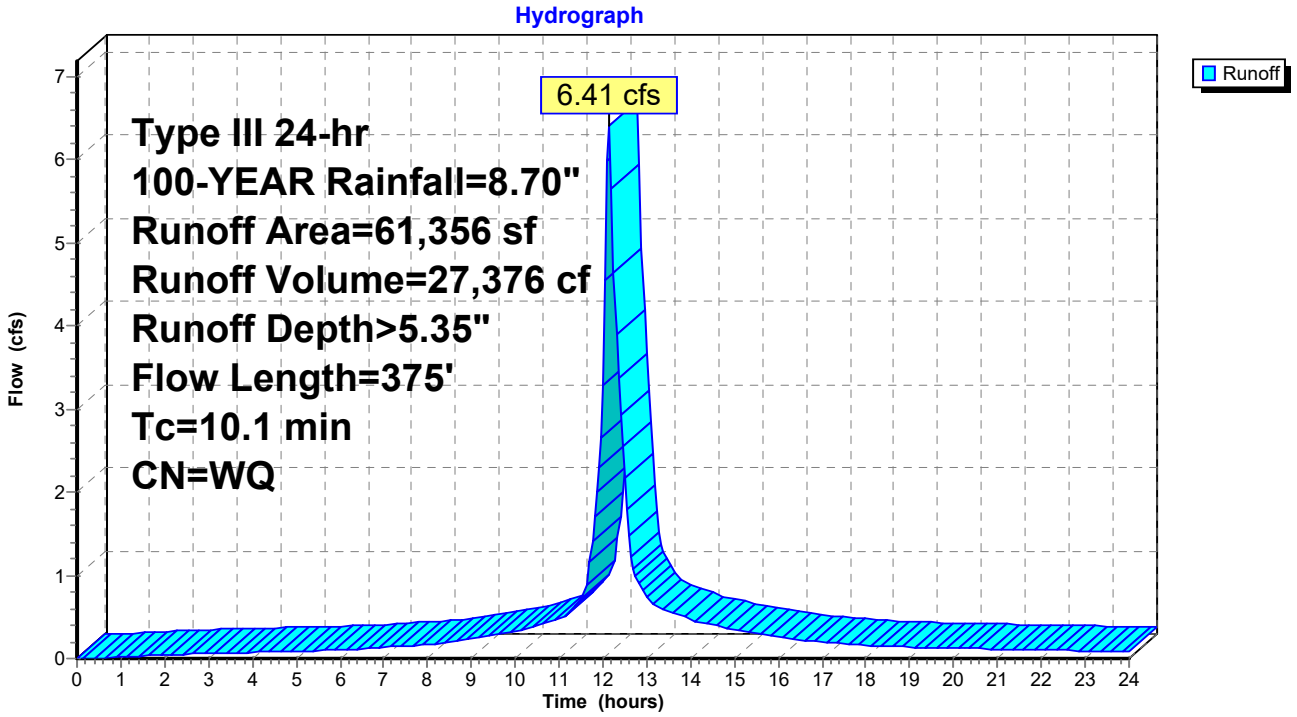
Runoff = 6.41 cfs @ 12.14 hrs, Volume= 27,376 cf, Depth> 5.35"
Routed to Link 5L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

Area (sf)	CN	Description
2,432	39	>75% Grass cover, Good, HSG A
34,186	98	Paved parking, HSG B
17,480	39	>75% Grass cover, Good, HSG A
4,187	39	>75% Grass cover, Good, HSG A
3,071	39	>75% Grass cover, Good, HSG A
61,356		Weighted Average
27,170	39	44.28% Pervious Area
34,186	98	55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0450	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.7	125	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	150	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.1	50	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
10.1	375	Total			

Subcatchment 2S: SUBCATCHMENT #2

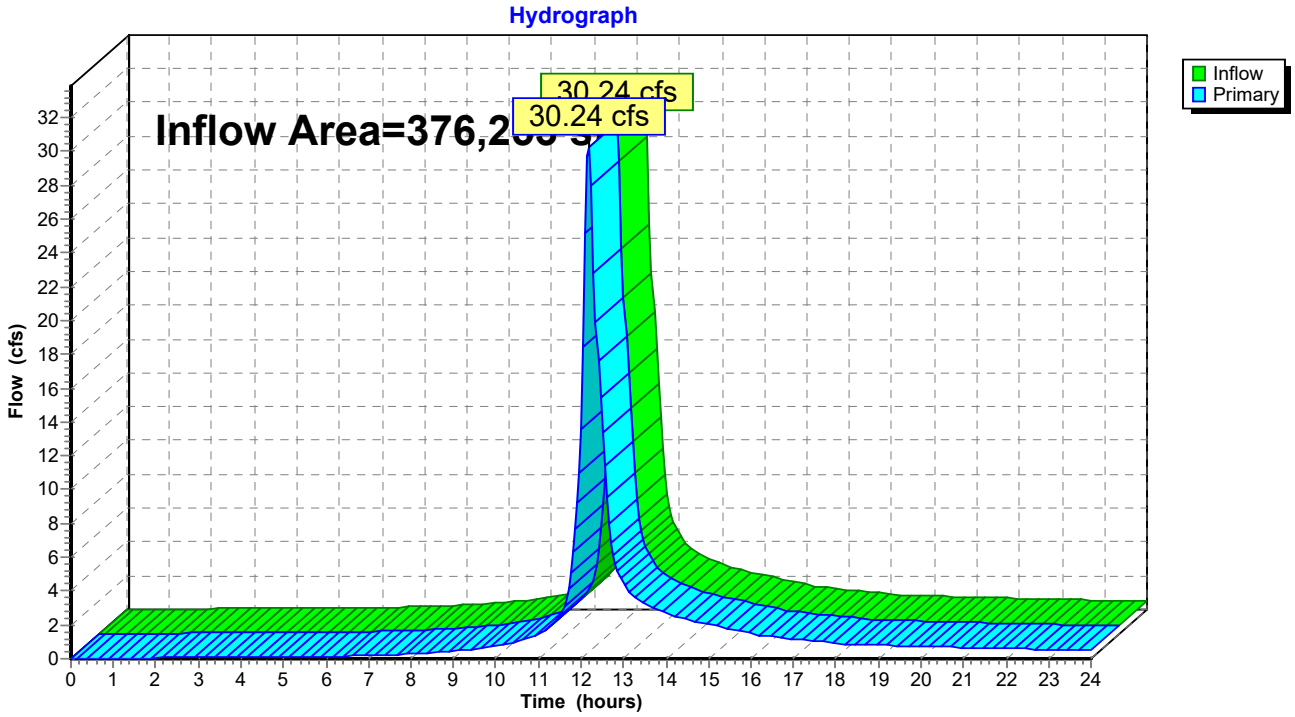


Summary for Link 5L: DESIGN POINT #1

Inflow Area = 376,253 sf, 10.97% Impervious, Inflow Depth > 4.02" for 100-YEAR event
Inflow = 30.24 cfs @ 12.17 hrs, Volume= 125,970 cf
Primary = 30.24 cfs @ 12.17 hrs, Volume= 125,970 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 5L: DESIGN POINT #1



CSDG
Coventry Survey Design Group
46 South Main Street
Coventry, RI 02816
401-823-5028
coventrysurvey.com

STORMWATER REPORT APPENDIX - C

PROPOSED WATERSHED MAP

Legend:

- Soil Type Boundary
- Contributing Watershed Area
- Time of Concentration Line (Also ASSF)
- Parcel of Interest Property Line
- Existing Contour Line
- Area Subject to Stormwater Flow
- Flagged Wetland Edge
- Wetland Buffer

SOIL FeA

TIOGUE AVENUE
(STATE OWNED - WIDTH VARIES)

AP 28 / LOT 48
MCDONALDS REAL ESTATE CO.
EXISTING AREA=62,736 SF (1.44 ACRES)
PROPOSED AREA= 52,455 SF (1.20 ACRES)

#1080

AP 28 / LOT 47.1
N/F KAUFMAN ASSOCIATES INC.

SUP116-2

WETLAND A EDGE

POINT D

TC LINE SECTION CD

2S SUBCATCHMENT #2
AREA 61,356 SF
CN WEIGHTED: 72
TC: 8.8 MINS

TH #1

SOIL HkC

POINT B

POINT A

POINT C

E 219.70'

150' RIPARIAN BUFFER

SE #1

AP 28 / LOT 50
N/F EUGENE & LEONI DENIGER

N40°E

150' BUFFER

TH #2

SE #2

TH #3

RIVER EDGE

SOIL FeA

SOIL ChC

POINT D
DESIGN
POINT

1S SUBCATCHMENT #1
AREA: 307,792 SF
CN WEIGHT AVERAGE: 59
TC: 13.0 MINS

WETLAND A EDGE

75' WETLAND BUFFER

TC LINE SECTION CD

75' BUFFER

SOIL Pg
HSG A

TH #4

POINT C

AP 28 / LOT 49
N/F DANTE REAL ESTATE II, LLC
EXISTING AREA=157,964 SF (3.63 ACRES)
PROPOSED AREA=168,244 SF (3.86 ACRES)

TC LINE SECTION BC

AP 28 / LOT 47
N/F MAPLEROOT CORPORATION

OLD ASHROCK HIGHWAY

100'

POINT B

POINT A

TC LINE SECTION AB

SOIL CdA

LANE F

Graphic Scale — Scale in feet: 1"=40'
0 20 40 80 120 160

Revisions:

SAMUEL R. SUORSA
No. 21508
PROFESSIONAL LAND SURVEYOR

JOHN W. HAMPTON
No. 12485
REGISTERED PROFESSIONAL ENGINEER
CIVIL

CSDG
Coventry Survey Design Group
46 South Main Street
Coventry, RI 02816
401-823-5028
coventrysurvey.com

DANTE PLAT

EXISTING WATERSHED MAP
OF LAND ON TIOGUE AVENUE
IN THE TOWN OF COVENTRY, RHODE ISLAND
ASSESSOR'S PLAT 28 / LOTS 48 & 49

PREPARED FOR: MICHAEL SACCOCCIA
2289 FLAT RIVER ROAD, COVENTRY, RI 02816
401-439-5005 | mikesaccoccia@cox.net

DRAWN BY:	JWH
APPROVED BY:	JWH
APPROVED BY:	JWH

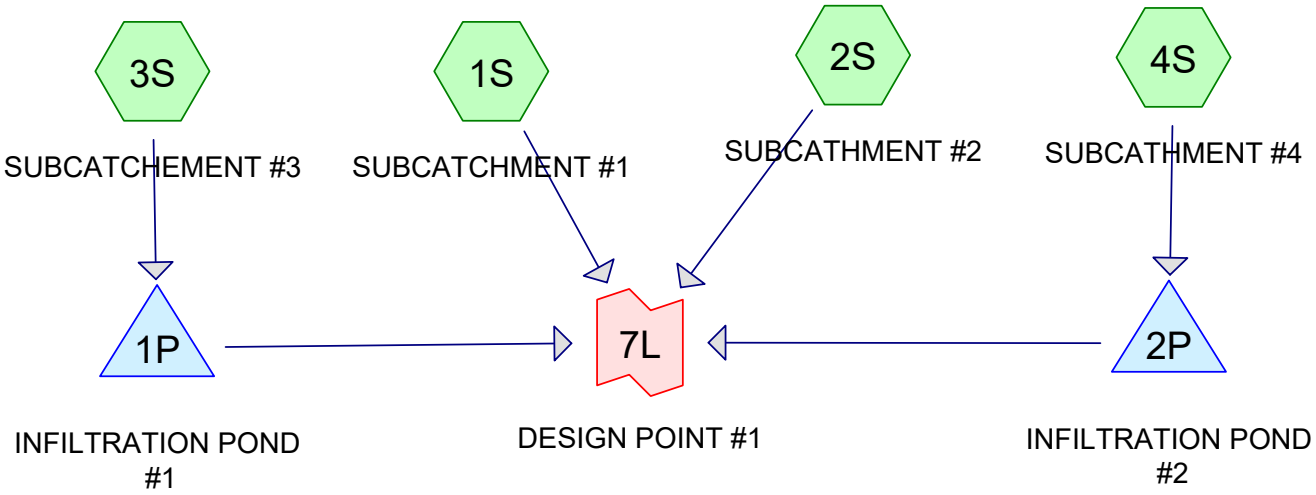
DATE
01-28-2025

SHEET 1 OF 12

CSDG
Coventry Survey Design Group
46 South Main Street
Coventry, RI 02816
401-823-5028
coventrysurvey.com

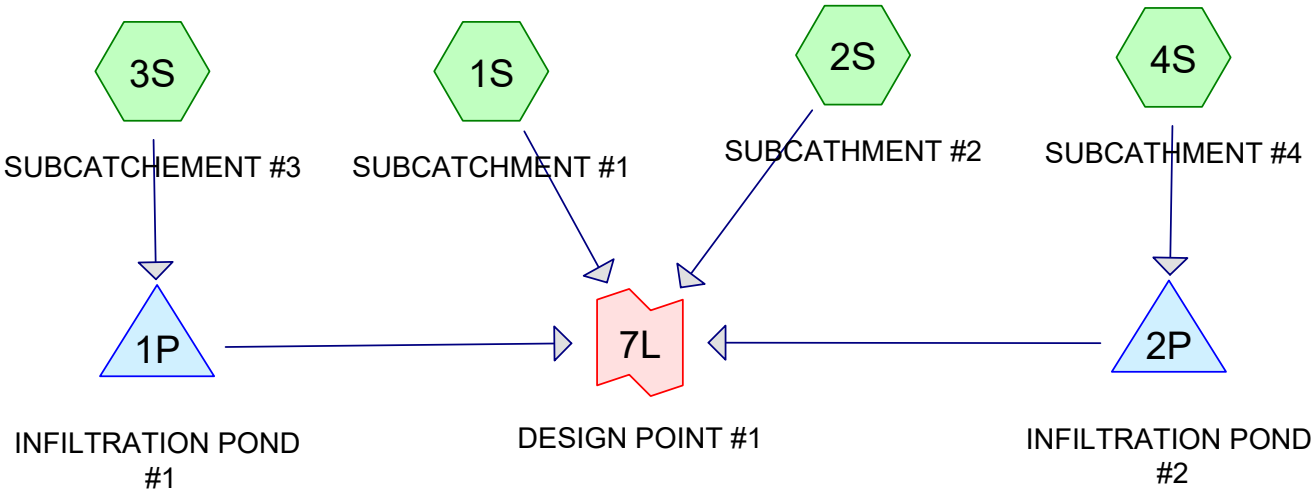
STORMWATER REPORT APPENDIX - D

PROPOSED HYDROCAD MODELING



Subcat Reach Pond Link

Routing Diagram for Proposed conditions
Prepared by Arthur R Cripps, Jr, PE, Printed 5/15/2025



Subcat Reach Pond Link

Routing Diagram for Proposed conditions
Prepared by Arthur R Cripps, Jr, PE, Printed 5/15/2025

Project Notes

Rainfall events imported from "EXISTINGhydrocad .hcp"

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	WQV	Type III 24-hr		Default	24.00	1	1.20	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
46,032	39	>75% Grass cover, Good, HSG A (2S, 3S, 4S)
29,494	61	>75% Grass cover, Good, HSG B (1S)
36,574	98	Paved parking, HSG A (3S, 4S)
34,186	98	Paved parking, HSG B (2S)
7,105	98	Roofs, HSG B (1S)
34,754	30	Woods, Good, HSG A (1S, 3S)
108,576	55	Woods, Good, HSG B (1S, 3S)
79,531	77	Woods, Good, HSG D (1S)
376,252	**65**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
117,360	HSG A	1S, 2S, 3S, 4S
179,361	HSG B	1S, 2S, 3S
0	HSG C	
79,531	HSG D	1S
0	Other	
376,252		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
46,032	29,494	0	0	0	75,526	>75% Grass cover, Good	
36,574	34,186	0	0	0	70,760	Paved parking	
0	7,105	0	0	0	7,105	Roofs	
34,754	108,576	0	79,531	0	222,861	Woods, Good	
117,360	**179,361**	**0**	**79,531**	**0**	**376,252**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	2S	0.00	0.00	150.0	0.0100	0.013	0.0	12.0	0.0
2	2S	0.00	0.00	50.0	0.0250	0.013	0.0	18.0	0.0

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SUBCATCHMENT#1 Runoff Area=242,315 sf 2.93% Impervious Runoff Depth>0.06"
Flow Length=861' Tc=13.0 min CN=WQ Runoff=0.18 cfs 1,249 cf

Subcatchment 2S: SUBCATHMENT#2 Runoff Area=61,356 sf 55.72% Impervious Runoff Depth>0.55"
Flow Length=375' Tc=10.1 min CN=WQ Runoff=0.74 cfs 2,804 cf

Subcatchment 3S: SUBCATCHEMENT#3 Runoff Area=51,697 sf 51.36% Impervious Runoff Depth>0.51"
Tc=6.0 min CN=WQ Runoff=0.65 cfs 2,179 cf

Subcatchment 4S: SUBCATHMENT#4 Runoff Area=20,884 sf 47.99% Impervious Runoff Depth>0.47"
Flow Length=357' Slope=0.0250 '/' Tc=6.7 min CN=WQ Runoff=0.24 cfs 823 cf

Pond 1P: INFILTRATION POND #1 Peak Elev=252.07' Storage=140 cf Inflow=0.65 cfs 2,179 cf
Discarded=0.41 cfs 2,179 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 2,179 cf

Pond 2P: INFILTRATION POND #2 Peak Elev=244.32' Storage=228 cf Inflow=0.24 cfs 823 cf
Discarded=0.05 cfs 822 cf Primary=0.00 cfs 0 cf Outflow=0.05 cfs 822 cf

Link 7L: DESIGN POINT #1 Inflow=0.90 cfs 4,053 cf
Primary=0.90 cfs 4,053 cf

Total Runoff Area = 376,252 sf Runoff Volume = 7,055 cf Average Runoff Depth = 0.23"
79.31% Pervious = 298,387 sf 20.69% Impervious = 77,865 sf

Summary for Subcatchment 1S: SUBCATCHMENT #1

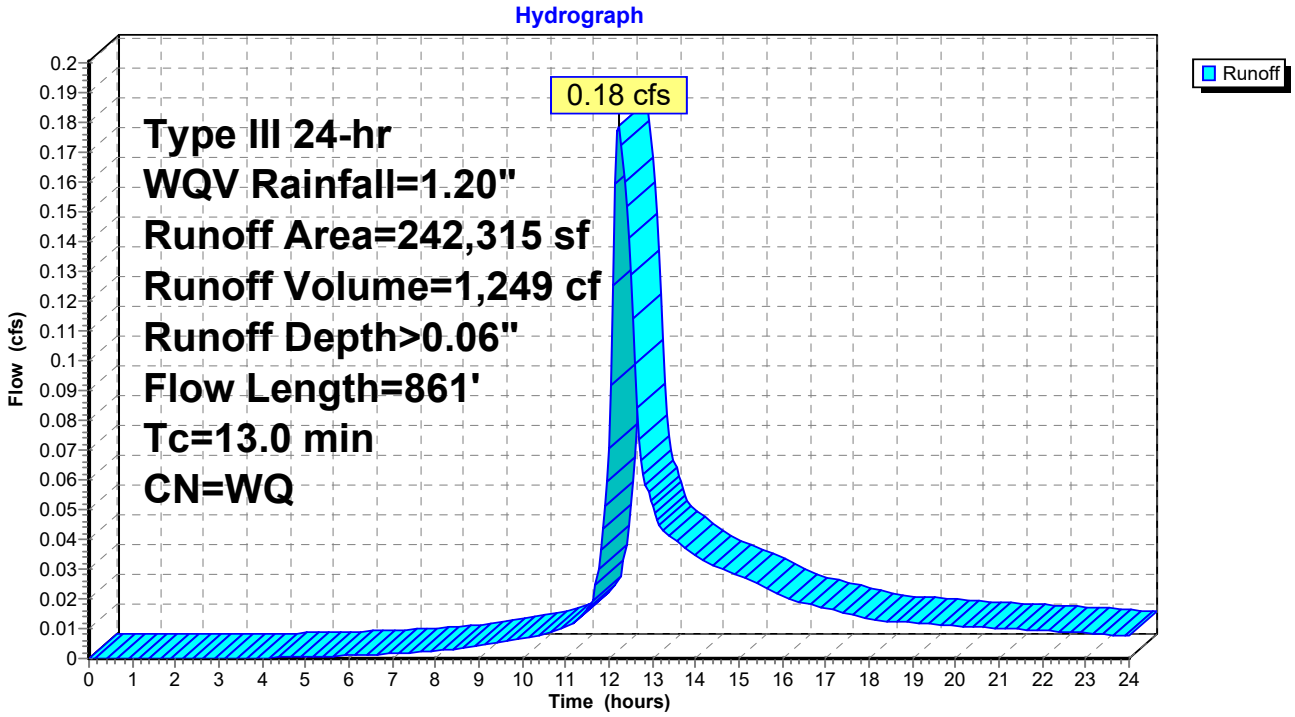
Runoff = 0.18 cfs @ 12.22 hrs, Volume= 1,249 cf, Depth> 0.06"
Routed to Link 7L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (sf)	CN	Description
1,306	30	Woods, Good, HSG A
103,810	55	Woods, Good, HSG B
79,531	77	Woods, Good, HSG D
21,069	30	Woods, Good, HSG A
29,494	61	>75% Grass cover, Good, HSG B
595	98	Roofs, HSG B
1,549	98	Roofs, HSG B
661	98	Roofs, HSG B
816	98	Roofs, HSG B
529	98	Roofs, HSG B
856	98	Roofs, HSG B
1,445	98	Roofs, HSG B
654	98	Roofs, HSG B
242,315		Weighted Average
235,210	61	97.07% Pervious Area
7,105	98	2.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.4	340	0.0625	4.03		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.8	421	0.0250	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.0	861	Total			

Subcatchment 1S: SUBCATCHMENT #1



Summary for Subcatchment 2S: SUBCATHMENT #2

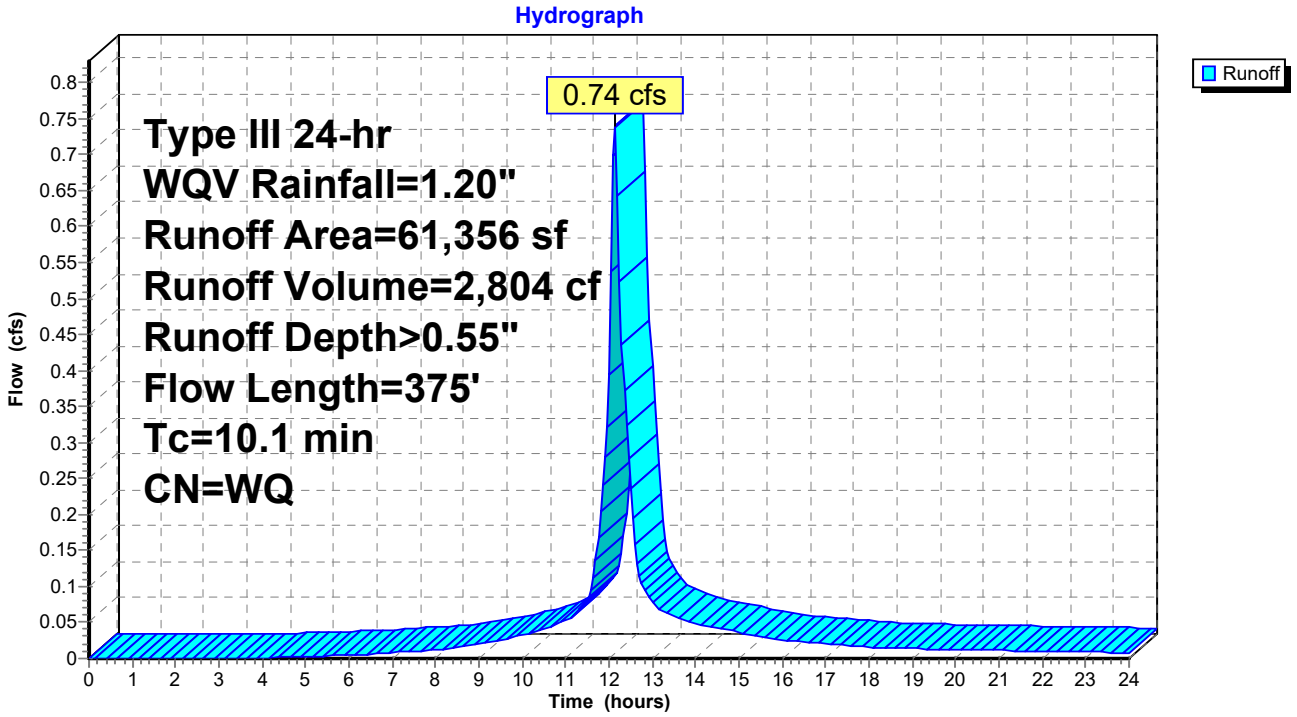
Runoff = 0.74 cfs @ 12.14 hrs, Volume= 2,804 cf, Depth> 0.55"
Routed to Link 7L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (sf)	CN	Description
2,432	39	>75% Grass cover, Good, HSG A
34,186	98	Paved parking, HSG B
17,480	39	>75% Grass cover, Good, HSG A
4,187	39	>75% Grass cover, Good, HSG A
3,071	39	>75% Grass cover, Good, HSG A
61,356		Weighted Average
27,170	39	44.28% Pervious Area
34,186	98	55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0450	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.7	125	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	150	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.1	50	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
10.1	375	Total			

Subcatchment 2S: SUBCATHMENT #2



Summary for Subcatchment 3S: SUBCATCHEMENT #3

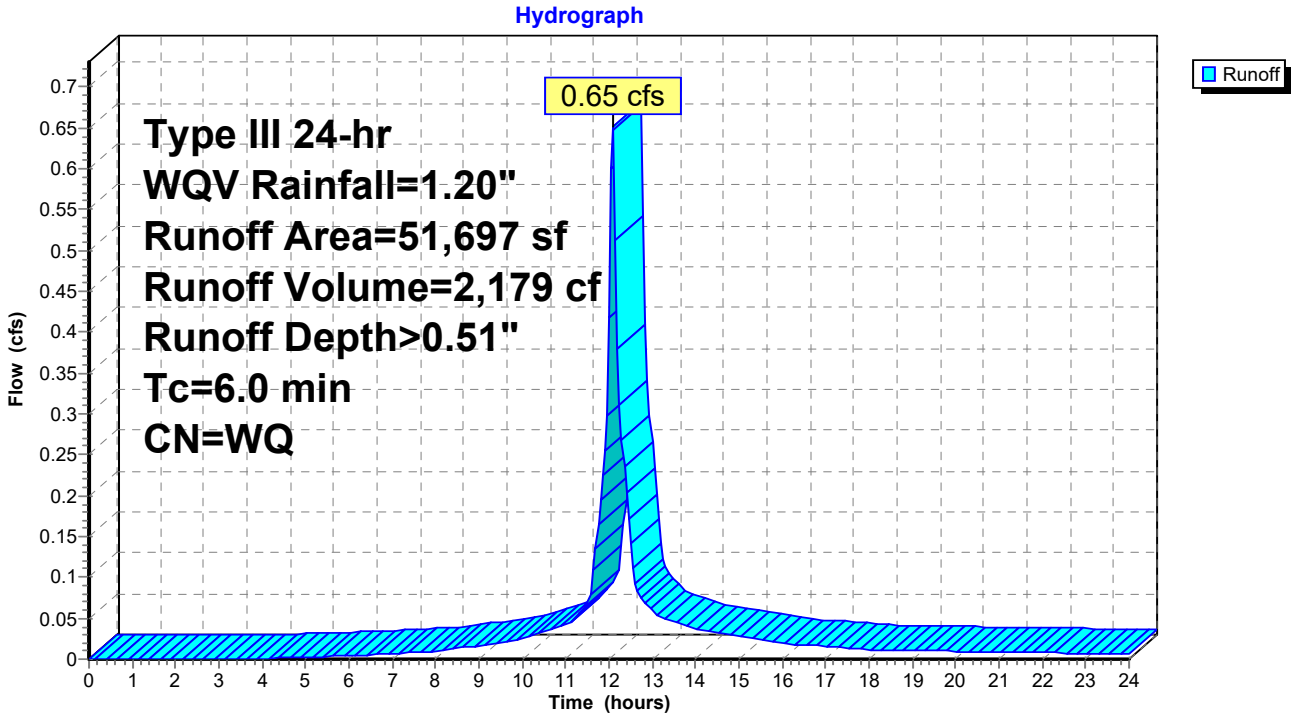
Runoff = 0.65 cfs @ 12.09 hrs, Volume= 2,179 cf, Depth> 0.51"
Routed to Pond 1P : INFILTRATION POND #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (sf)	CN	Description
5,209	30	Woods, Good, HSG A
4,766	55	Woods, Good, HSG B
6,088	39	>75% Grass cover, Good, HSG A
26,551	98	Paved parking, HSG A
1,913	39	>75% Grass cover, Good, HSG A
7,170	30	Woods, Good, HSG A
51,697		Weighted Average
25,146	38	48.64% Pervious Area
26,551	98	51.36% Impervious Area

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

Subcatchment 3S: SUBCATCHEMENT #3



Summary for Subcatchment 4S: SUBCATHMENT #4

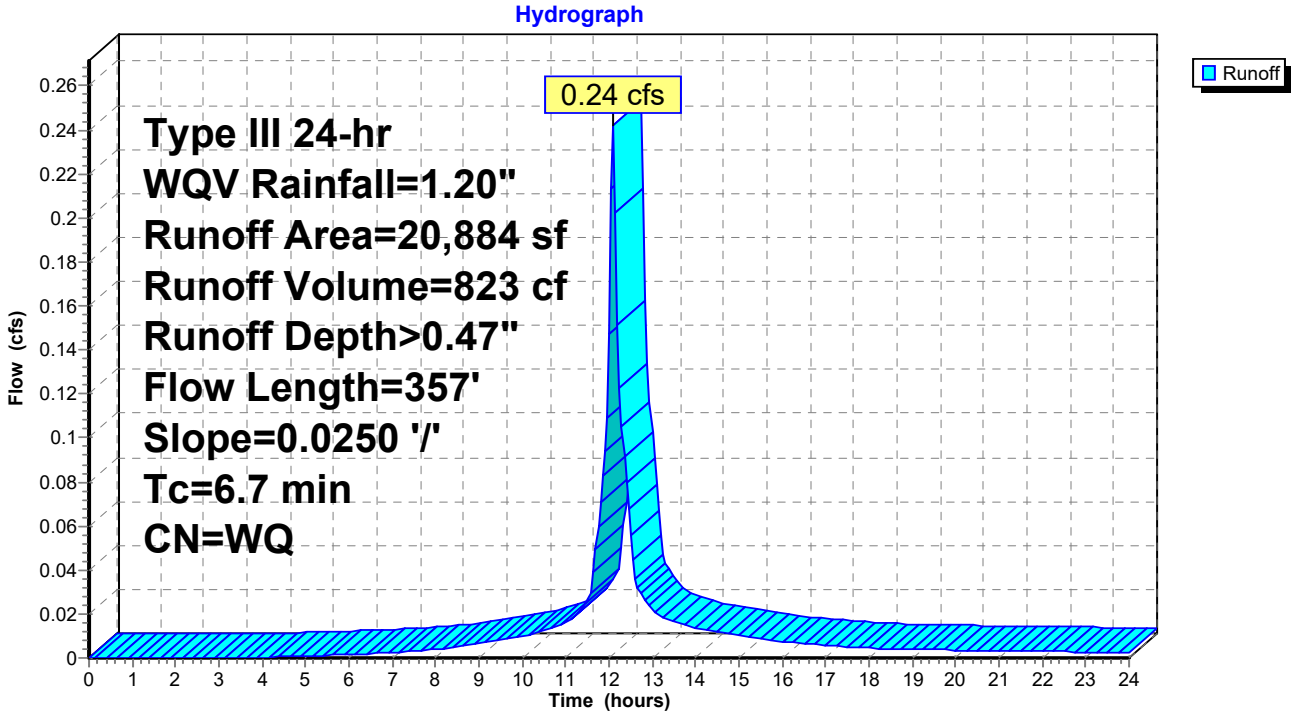
Runoff = 0.24 cfs @ 12.10 hrs, Volume= 823 cf, Depth> 0.47"
Routed to Pond 2P : INFILTRATION POND #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr WQV Rainfall=1.20"

Area (sf)	CN	Description
3,589	39	>75% Grass cover, Good, HSG A
10,023	98	Paved parking, HSG A
7,272	39	>75% Grass cover, Good, HSG A
20,884		Weighted Average
10,861	39	52.01% Pervious Area
10,023	98	47.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	50	0.0250	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.6	307	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.7	357	Total			

Subcatchment 4S: SUBCATHMENT #4



Summary for Pond 1P: INFILTRATION POND #1

Inflow Area = 51,697 sf, 51.36% Impervious, Inflow Depth > 0.51" for WQV event
Inflow = 0.65 cfs @ 12.09 hrs, Volume= 2,179 cf
Outflow = 0.41 cfs @ 12.19 hrs, Volume= 2,179 cf, Atten= 37%, Lag= 6.3 min
Discarded = 0.41 cfs @ 12.19 hrs, Volume= 2,179 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 7L : DESIGN POINT #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 252.07' @ 12.19 hrs Surf.Area= 2,101 sf Storage= 140 cf

Plug-Flow detention time= 2.4 min calculated for 2,179 cf (100% of inflow)
Center-of-Mass det. time= 2.2 min (783.7 - 781.6)

Volume	Invert	Avail.Storage	Storage Description
#1	252.00'	6,849 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

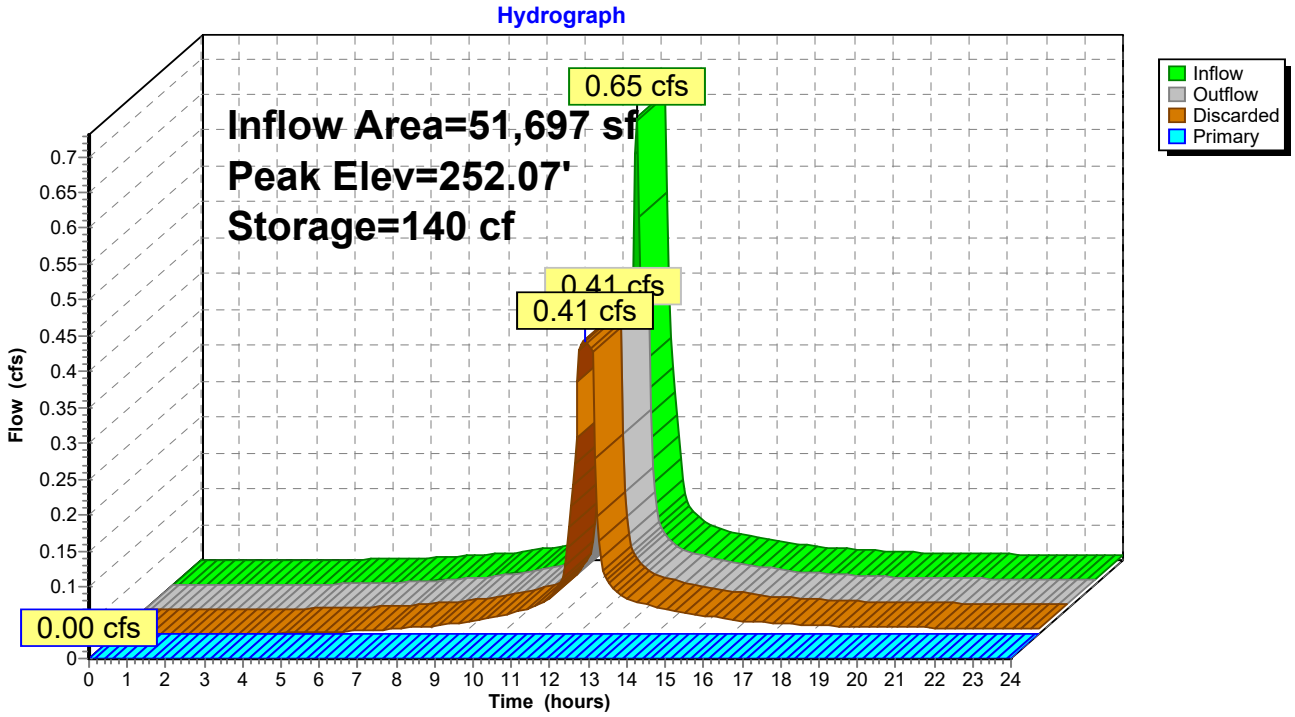
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
252.00	2,006	0	0
253.00	3,400	2,703	2,703
254.00	4,891	4,146	6,849

Device	Routing	Invert	Outlet Devices
#1	Discarded	252.00'	**8.270 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 248.00'
#2	Primary	253.00'	**1.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.41 cfs @ 12.19 hrs HW=252.07' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=252.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: INFILTRATION POND #1



Stage-Area-Storage for Pond 1P: INFILTRATION POND #1

Elevation (feet)	Surface (sq-ft)	Horizontal (sq-ft)	Storage (cubic-feet)
252.00	2,006	2,006	0
252.05	2,076	2,076	102
252.10	2,145	2,145	208
252.15	2,215	2,215	317
252.20	2,285	2,285	429
252.25	2,355	2,355	545
252.30	2,424	2,424	665
252.35	2,494	2,494	787
252.40	2,564	2,564	914
252.45	2,633	2,633	1,044
252.50	2,703	2,703	1,177
252.55	2,773	2,773	1,314
252.60	2,842	2,842	1,455
252.65	2,912	2,912	1,598
252.70	2,982	2,982	1,746
252.75	3,052	3,052	1,897
252.80	3,121	3,121	2,051
252.85	3,191	3,191	2,209
252.90	3,261	3,261	2,370
252.95	3,330	3,330	2,535
253.00	3,400	3,400	2,703
253.05	3,475	3,475	2,875
253.10	3,549	3,549	3,050
253.15	3,624	3,624	3,230
253.20	3,698	3,698	3,413
253.25	3,773	3,773	3,600
253.30	3,847	3,847	3,790
253.35	3,922	3,922	3,984
253.40	3,996	3,996	4,182
253.45	4,071	4,071	4,384
253.50	4,146	4,146	4,589
253.55	4,220	4,220	4,799
253.60	4,295	4,295	5,011
253.65	4,369	4,369	5,228
253.70	4,444	4,444	5,448
253.75	4,518	4,518	5,672
253.80	4,593	4,593	5,900
253.85	4,667	4,667	6,132
253.90	4,742	4,742	6,367
253.95	4,816	4,816	6,606
254.00	**4,891**	**4,891**	**6,849**

Summary for Pond 2P: INFILTRATION POND #2

Inflow Area = 20,884 sf, 47.99% Impervious, Inflow Depth > 0.47" for WQV event
Inflow = 0.24 cfs @ 12.10 hrs, Volume= 823 cf
Outflow = 0.05 cfs @ 12.52 hrs, Volume= 822 cf, Atten= 79%, Lag= 25.3 min
Discarded = 0.05 cfs @ 12.52 hrs, Volume= 822 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 7L : DESIGN POINT #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 244.32' @ 12.52 hrs Surf.Area= 822 sf Storage= 228 cf

Plug-Flow detention time= 30.6 min calculated for 820 cf (100% of inflow)
Center-of-Mass det. time= 29.9 min (812.0 - 782.1)

Volume	Invert	Avail.Storage	Storage Description
#1	244.00'	2,619 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

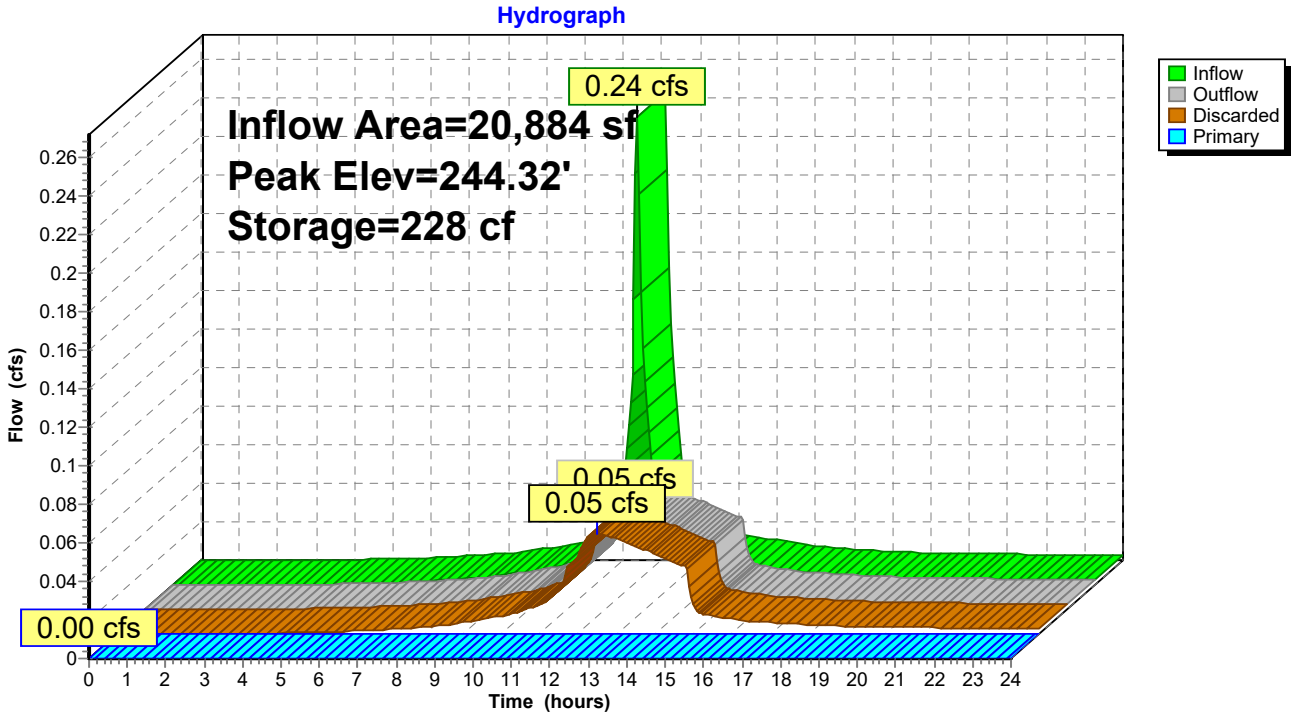
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.00	599	0	0
245.00	1,296	948	948
246.00	2,046	1,671	2,619

Device	Routing	Invert	Outlet Devices
#1	Discarded	244.00'	**2.410 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 242.00'
#2	Primary	245.00'	**60.0 deg x 0.50' rise Sharp-Crested Vee/Trap Weir** Cv= 2.53 (C= 3.16)
#3	Primary	245.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.05 cfs @ 12.52 hrs HW=244.32' (Free Discharge)
└**1=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=244.00' (Free Discharge)
├**2=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)
└**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: INFILTRATION POND #2



Stage-Area-Storage for Pond 2P: INFILTRATION POND #2

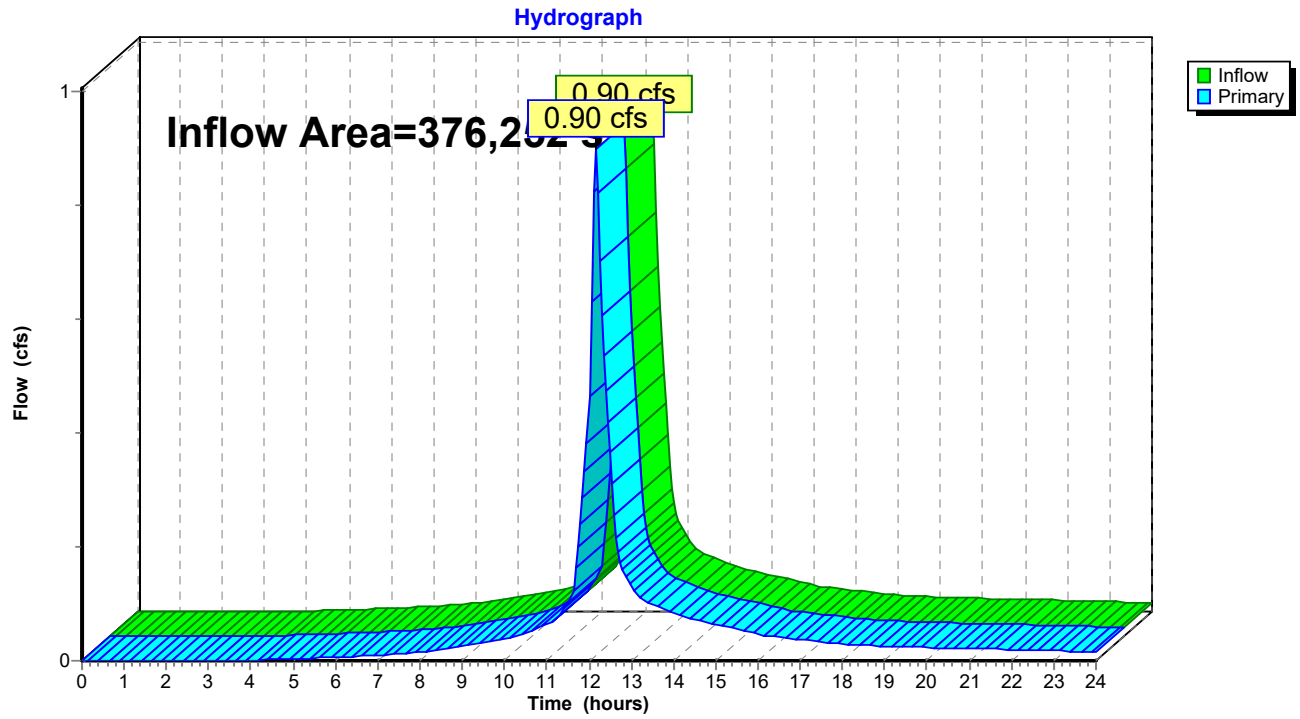
Elevation (feet)	Surface (sq-ft)	Horizontal (sq-ft)	Storage (cubic-feet)
244.00	599	599	0
244.05	634	634	31
244.10	669	669	63
244.15	704	704	98
244.20	738	738	134
244.25	773	773	172
244.30	808	808	211
244.35	843	843	252
244.40	878	878	295
244.45	913	913	340
244.50	948	948	387
244.55	982	982	435
244.60	1,017	1,017	485
244.65	1,052	1,052	537
244.70	1,087	1,087	590
244.75	1,122	1,122	645
244.80	1,157	1,157	702
244.85	1,191	1,191	761
244.90	1,226	1,226	821
244.95	1,261	1,261	884
245.00	1,296	1,296	948
245.05	1,334	1,334	1,013
245.10	1,371	1,371	1,081
245.15	1,409	1,409	1,150
245.20	1,446	1,446	1,222
245.25	1,484	1,484	1,295
245.30	1,521	1,521	1,370
245.35	1,558	1,558	1,447
245.40	1,596	1,596	1,526
245.45	1,633	1,633	1,607
245.50	1,671	1,671	1,689
245.55	1,709	1,709	1,774
245.60	1,746	1,746	1,860
245.65	1,784	1,784	1,948
245.70	1,821	1,821	2,038
245.75	1,859	1,859	2,130
245.80	1,896	1,896	2,224
245.85	1,933	1,933	2,320
245.90	1,971	1,971	2,418
245.95	2,008	2,008	2,517
246.00	**2,046**	**2,046**	**2,619**

Summary for Link 7L: DESIGN POINT #1

Inflow Area = 376,252 sf, 20.69% Impervious, Inflow Depth > 0.13" for WQV event
Inflow = 0.90 cfs @ 12.15 hrs, Volume= 4,053 cf
Primary = 0.90 cfs @ 12.15 hrs, Volume= 4,053 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 7L: DESIGN POINT #1



Project Notes

Rainfall events imported from "EXISTINGhydrocad .hcp"

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1 -YEAR	Type III 24-hr		Default	24.00	1	2.70	2
2	10 -YEAR	Type III 24-hr		Default	24.00	1	4.90	2
3	25-YEAR	Type III 24-hr		Default	24.00	1	6.10	2
4	100-YEAR	Type III 24-hr		Default	24.00	1	8.70	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
46,032	39	>75% Grass cover, Good, HSG A (2S, 3S, 4S)
29,494	61	>75% Grass cover, Good, HSG B (1S)
36,574	98	Paved parking, HSG A (3S, 4S)
34,186	98	Paved parking, HSG B (2S)
7,105	98	Roofs, HSG B (1S)
34,754	30	Woods, Good, HSG A (1S, 3S)
108,576	55	Woods, Good, HSG B (1S, 3S)
79,531	77	Woods, Good, HSG D (1S)
376,252	**65**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
117,360	HSG A	1S, 2S, 3S, 4S
179,361	HSG B	1S, 2S, 3S
0	HSG C	
79,531	HSG D	1S
0	Other	
376,252		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
46,032	29,494	0	0	0	75,526	>75% Grass cover, Good	
36,574	34,186	0	0	0	70,760	Paved parking	
0	7,105	0	0	0	7,105	Roofs	
34,754	108,576	0	79,531	0	222,861	Woods, Good	
117,360	**179,361**	**0**	**79,531**	**0**	**376,252**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	2S	0.00	0.00	150.0	0.0100	0.013	0.0	12.0	0.0
2	2S	0.00	0.00	50.0	0.0250	0.013	0.0	18.0	0.0

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SUBCATCHMENT#1 Runoff Area=242,315 sf 2.93% Impervious Runoff Depth>0.44"
Flow Length=861' Tc=13.0 min CN=WQ Runoff=1.77 cfs 8,882 cf

Subcatchment 2S: SUBCATHMENT#2 Runoff Area=61,356 sf 55.72% Impervious Runoff Depth>1.37"
Flow Length=375' Tc=10.1 min CN=WQ Runoff=1.77 cfs 7,027 cf

Subcatchment 3S: SUBCATCHEMENT#3 Runoff Area=51,697 sf 51.36% Impervious Runoff Depth>1.28"
Tc=6.0 min CN=WQ Runoff=1.55 cfs 5,509 cf

Subcatchment 4S: SUBCATHMENT#4 Runoff Area=20,884 sf 47.99% Impervious Runoff Depth>1.18"
Flow Length=357' Slope=0.0250 '/' Tc=6.7 min CN=WQ Runoff=0.58 cfs 2,061 cf

Pond 1P: INFILTRATION POND #1 Peak Elev=252.40' Storage=907 cf Inflow=1.55 cfs 5,509 cf
Discarded=0.53 cfs 5,508 cf Primary=0.00 cfs 0 cf Outflow=0.53 cfs 5,508 cf

Pond 2P: INFILTRATION POND #2 Peak Elev=244.81' Storage=718 cf Inflow=0.58 cfs 2,061 cf
Discarded=0.08 cfs 2,059 cf Primary=0.00 cfs 0 cf Outflow=0.08 cfs 2,059 cf

Link 7L: DESIGN POINT #1 Inflow=3.45 cfs 15,909 cf
Primary=3.45 cfs 15,909 cf

Total Runoff Area = 376,252 sf Runoff Volume = 23,479 cf Average Runoff Depth = 0.75"
79.31% Pervious = 298,387 sf 20.69% Impervious = 77,865 sf

Summary for Subcatchment 1S: SUBCATCHMENT #1

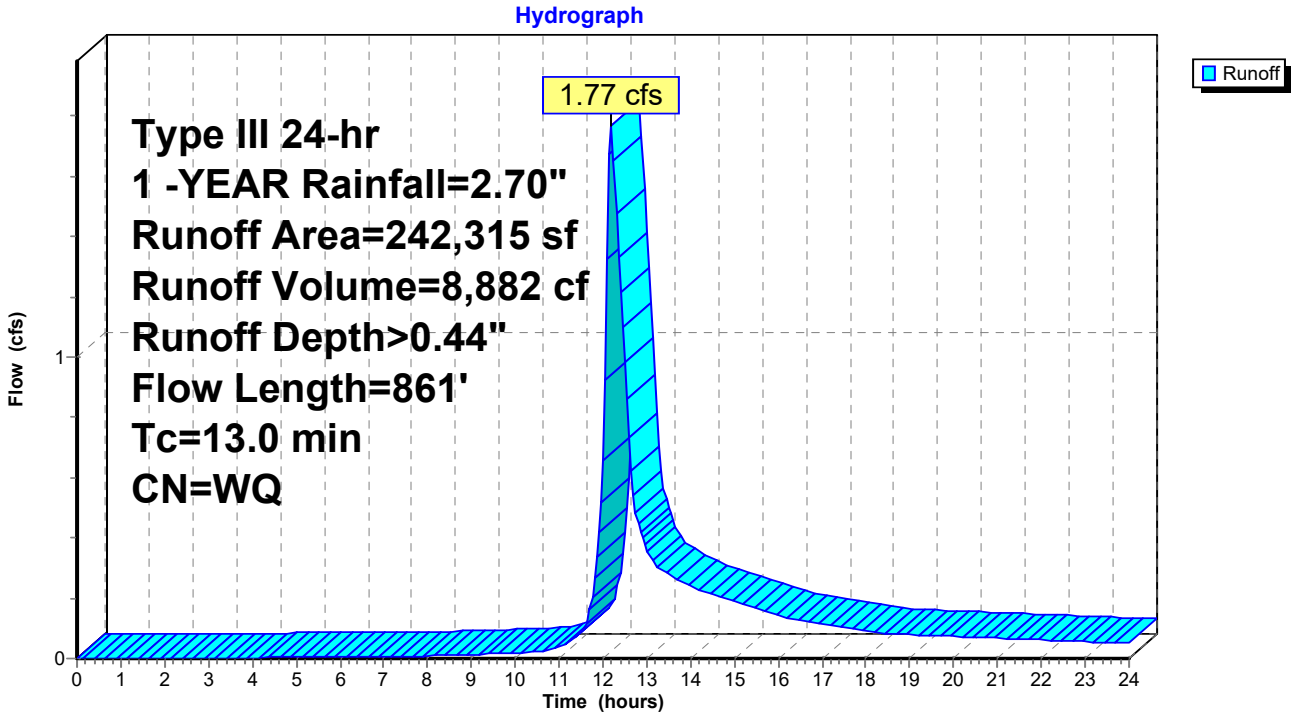
Runoff = 1.77 cfs @ 12.20 hrs, Volume= 8,882 cf, Depth> 0.44"
Routed to Link 7L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 -YEAR Rainfall=2.70"

Area (sf)	CN	Description
1,306	30	Woods, Good, HSG A
103,810	55	Woods, Good, HSG B
79,531	77	Woods, Good, HSG D
21,069	30	Woods, Good, HSG A
29,494	61	>75% Grass cover, Good, HSG B
595	98	Roofs, HSG B
1,549	98	Roofs, HSG B
661	98	Roofs, HSG B
816	98	Roofs, HSG B
529	98	Roofs, HSG B
856	98	Roofs, HSG B
1,445	98	Roofs, HSG B
654	98	Roofs, HSG B
242,315		Weighted Average
235,210	61	97.07% Pervious Area
7,105	98	2.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.4	340	0.0625	4.03		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.8	421	0.0250	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.0	861	Total			

Subcatchment 1S: SUBCATCHMENT #1



Summary for Subcatchment 2S: SUBCATHMENT #2

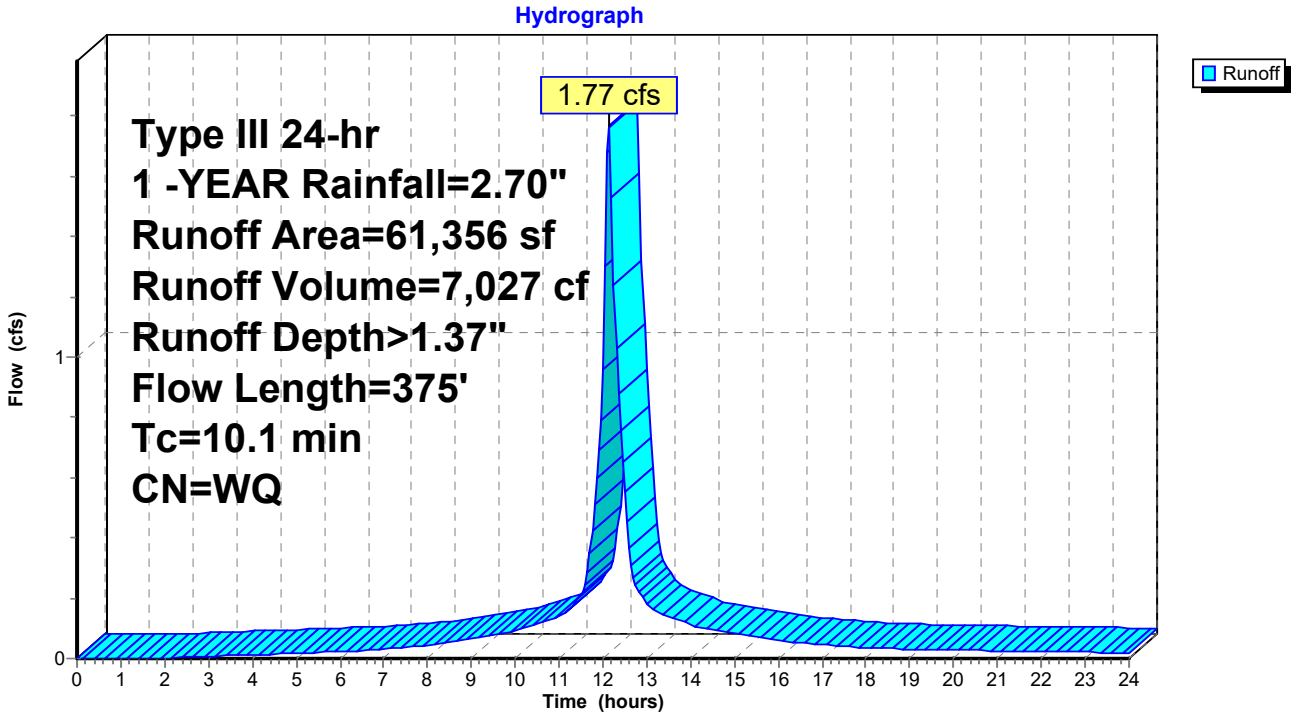
Runoff = 1.77 cfs @ 12.14 hrs, Volume= 7,027 cf, Depth> 1.37"
Routed to Link 7L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 -YEAR Rainfall=2.70"

Area (sf)	CN	Description
2,432	39	>75% Grass cover, Good, HSG A
34,186	98	Paved parking, HSG B
17,480	39	>75% Grass cover, Good, HSG A
4,187	39	>75% Grass cover, Good, HSG A
3,071	39	>75% Grass cover, Good, HSG A
61,356		Weighted Average
27,170	39	44.28% Pervious Area
34,186	98	55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0450	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.7	125	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	150	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.1	50	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
10.1	375	Total			

Subcatchment 2S: SUBCATHMENT #2



Summary for Subcatchment 3S: SUBCATCHEMENT #3

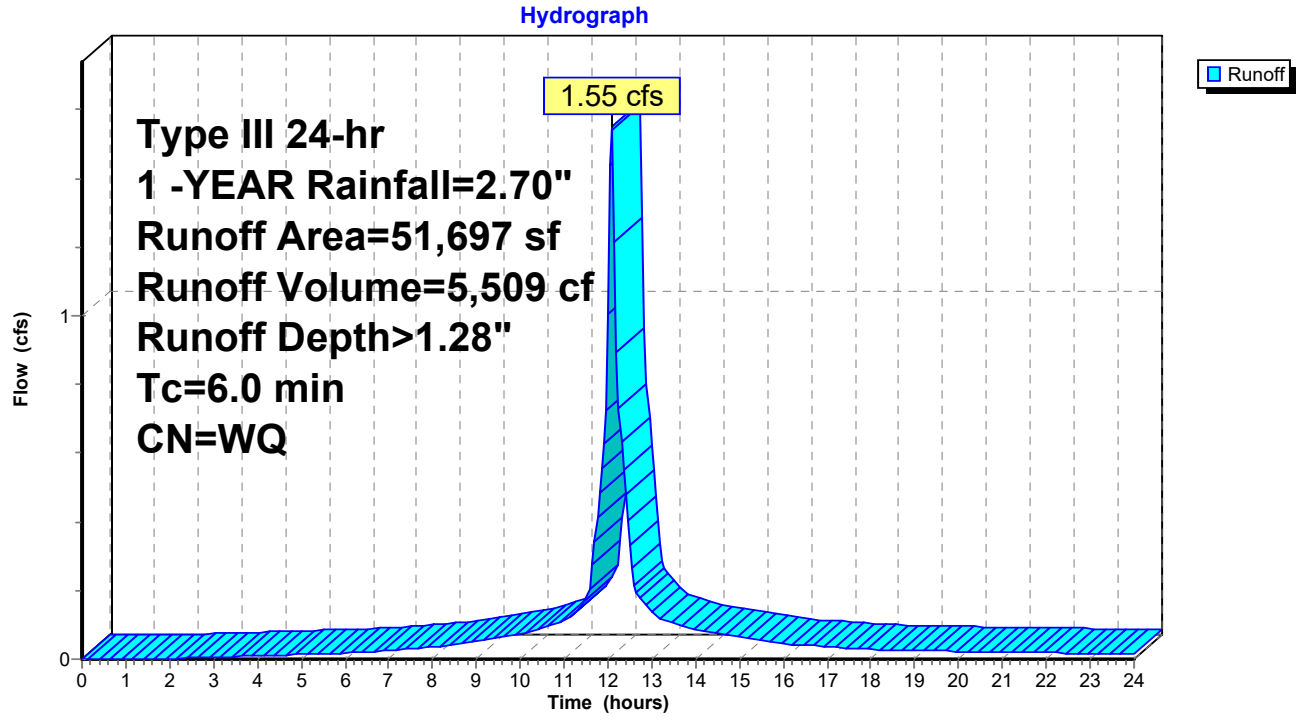
Runoff = 1.55 cfs @ 12.09 hrs, Volume= 5,509 cf, Depth> 1.28"
Routed to Pond 1P : INFILTRATION POND #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 -YEAR Rainfall=2.70"

Area (sf)	CN	Description
5,209	30	Woods, Good, HSG A
4,766	55	Woods, Good, HSG B
6,088	39	>75% Grass cover, Good, HSG A
26,551	98	Paved parking, HSG A
1,913	39	>75% Grass cover, Good, HSG A
7,170	30	Woods, Good, HSG A
51,697		Weighted Average
25,146	38	48.64% Pervious Area
26,551	98	51.36% Impervious Area

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

Subcatchment 3S: SUBCATCHEMENT #3



Summary for Subcatchment 4S: SUBCATHMENT #4

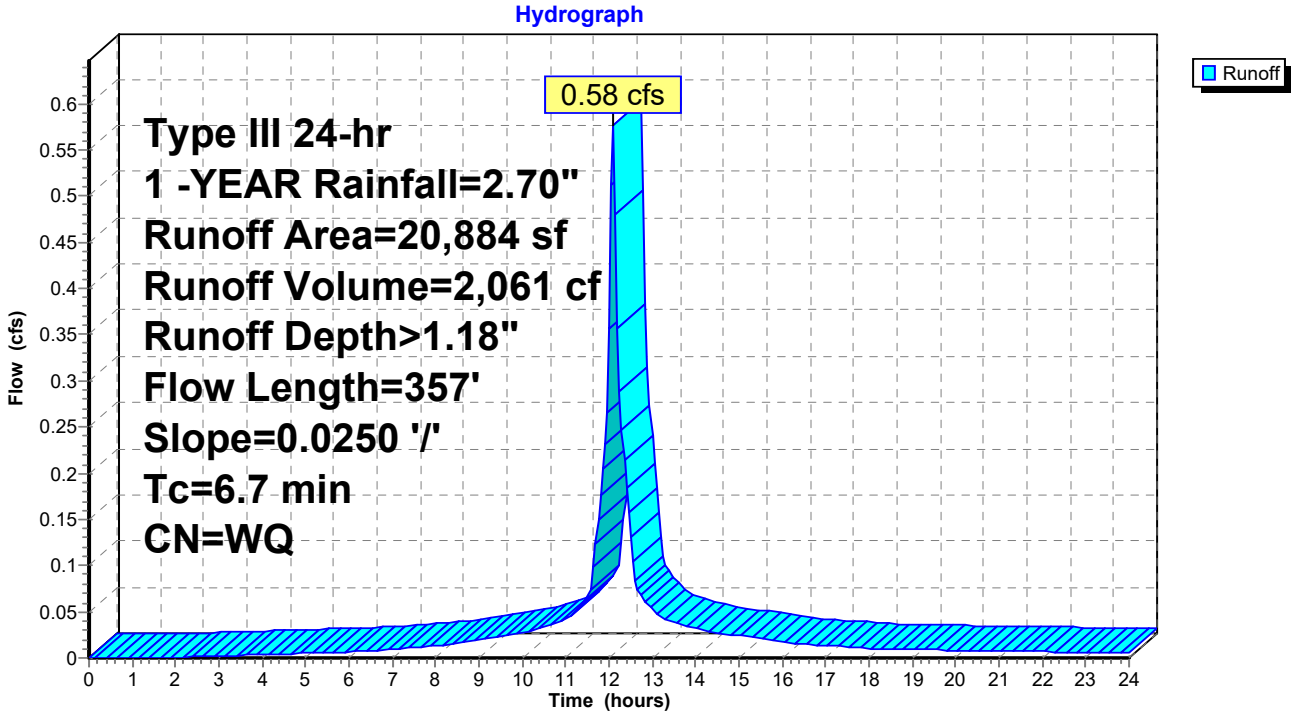
Runoff = 0.58 cfs @ 12.09 hrs, Volume= 2,061 cf, Depth> 1.18"
Routed to Pond 2P : INFILTRATION POND #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 -YEAR Rainfall=2.70"

Area (sf)	CN	Description
3,589	39	>75% Grass cover, Good, HSG A
10,023	98	Paved parking, HSG A
7,272	39	>75% Grass cover, Good, HSG A
20,884		Weighted Average
10,861	39	52.01% Pervious Area
10,023	98	47.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	50	0.0250	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.6	307	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.7	357	Total			

Subcatchment 4S: SUBCATHMENT #4



Summary for Pond 1P: INFILTRATION POND #1

Inflow Area = 51,697 sf, 51.36% Impervious, Inflow Depth > 1.28" for 1 -YEAR event
Inflow = 1.55 cfs @ 12.09 hrs, Volume= 5,509 cf
Outflow = 0.53 cfs @ 12.36 hrs, Volume= 5,508 cf, Atten= 66%, Lag= 16.6 min
Discarded = 0.53 cfs @ 12.36 hrs, Volume= 5,508 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 7L : DESIGN POINT #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 252.40' @ 12.36 hrs Surf.Area= 2,560 sf Storage= 907 cf

Plug-Flow detention time= 9.1 min calculated for 5,508 cf (100% of inflow)
Center-of-Mass det. time= 8.9 min (770.7 - 761.8)

Volume	Invert	Avail.Storage	Storage Description
#1	252.00'	6,849 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

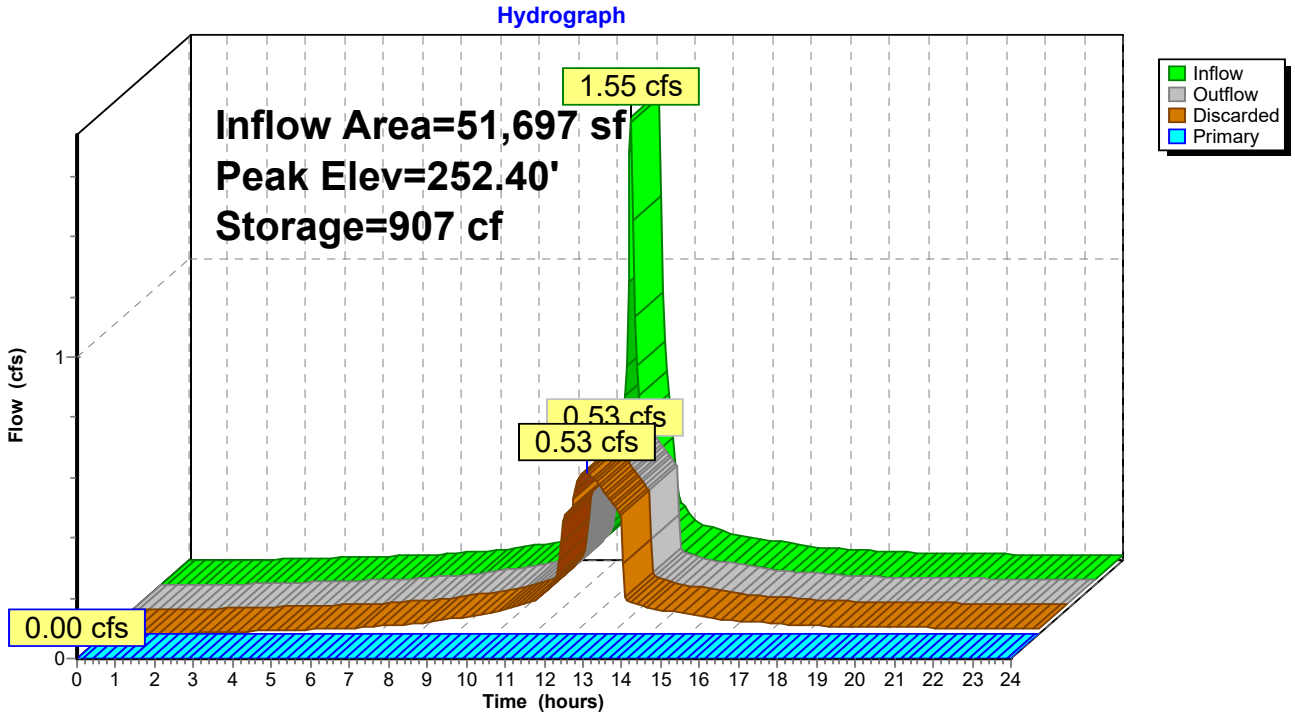
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
252.00	2,006	0	0
253.00	3,400	2,703	2,703
254.00	4,891	4,146	6,849

Device	Routing	Invert	Outlet Devices
#1	Discarded	252.00'	**8.270 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 248.00'
#2	Primary	253.00'	**1.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.53 cfs @ 12.36 hrs HW=252.40' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.53 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=252.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: INFILTRATION POND #1



Summary for Pond 2P: INFILTRATION POND #2

Inflow Area = 20,884 sf, 47.99% Impervious, Inflow Depth > 1.18" for 1 -YEAR event
Inflow = 0.58 cfs @ 12.09 hrs, Volume= 2,061 cf
Outflow = 0.08 cfs @ 12.61 hrs, Volume= 2,059 cf, Atten= 85%, Lag= 30.8 min
Discarded = 0.08 cfs @ 12.61 hrs, Volume= 2,059 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 7L : DESIGN POINT #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 244.81' @ 12.61 hrs Surf.Area= 1,166 sf Storage= 718 cf

Plug-Flow detention time= 72.1 min calculated for 2,055 cf (100% of inflow)
Center-of-Mass det. time= 71.3 min (831.5 - 760.2)

Volume	Invert	Avail.Storage	Storage Description
#1	244.00'	2,619 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

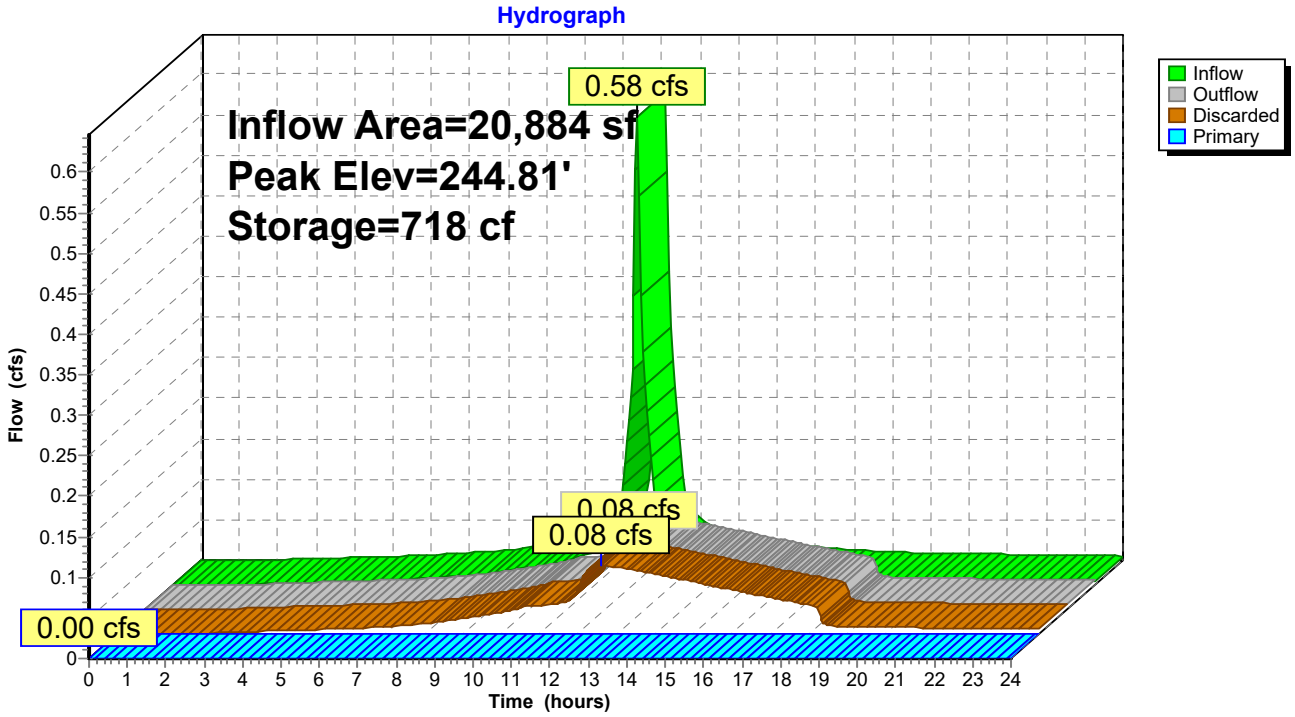
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.00	599	0	0
245.00	1,296	948	948
246.00	2,046	1,671	2,619

Device	Routing	Invert	Outlet Devices
#1	Discarded	244.00'	**2.410 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 242.00'
#2	Primary	245.00'	**60.0 deg x 0.50' rise Sharp-Crested Vee/Trap Weir** Cv= 2.53 (C= 3.16)
#3	Primary	245.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.08 cfs @ 12.61 hrs HW=244.81' (Free Discharge)
└**1=Exfiltration** (Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=244.00' (Free Discharge)
├**2=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)
└**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: INFILTRATION POND #2

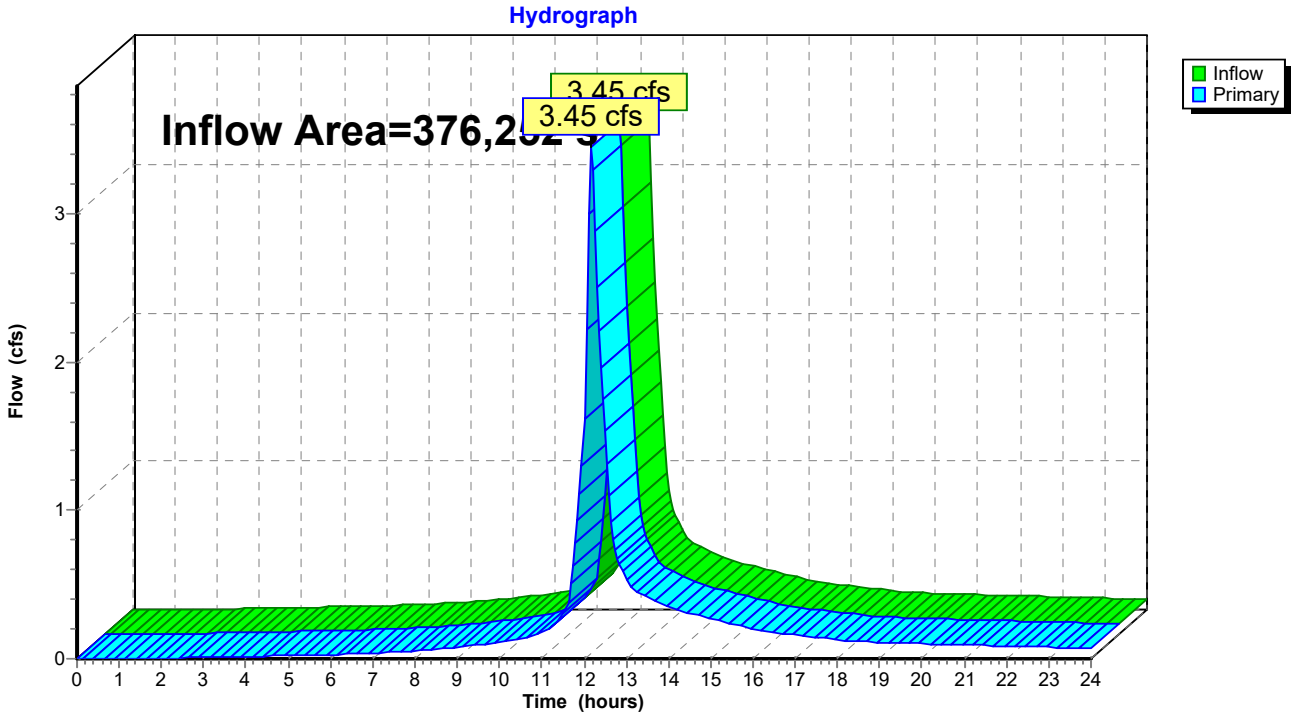


Summary for Link 7L: DESIGN POINT #1

Inflow Area = 376,252 sf, 20.69% Impervious, Inflow Depth > 0.51" for 1 -YEAR event
Inflow = 3.45 cfs @ 12.16 hrs, Volume= 15,909 cf
Primary = 3.45 cfs @ 12.16 hrs, Volume= 15,909 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 7L: DESIGN POINT #1



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SUBCATCHMENT#1 Runoff Area=242,315 sf 2.93% Impervious Runoff Depth>1.52"
Flow Length=861' Tc=13.0 min CN=WQ Runoff=7.21 cfs 30,778 cf

Subcatchment 2S: SUBCATHMENT#2 Runoff Area=61,356 sf 55.72% Impervious Runoff Depth>2.67"
Flow Length=375' Tc=10.1 min CN=WQ Runoff=3.25 cfs 13,675 cf

Subcatchment 3S: SUBCATCHEMENT#3 Runoff Area=51,697 sf 51.36% Impervious Runoff Depth>2.51"
Tc=6.0 min CN=WQ Runoff=2.94 cfs 10,803 cf

Subcatchment 4S: SUBCATHMENT#4 Runoff Area=20,884 sf 47.99% Impervious Runoff Depth>2.33"
Flow Length=357' Slope=0.0250 '/' Tc=6.7 min CN=WQ Runoff=1.06 cfs 4,055 cf

Pond 1P: INFILTRATION POND #1 Peak Elev=252.93' Storage=2,474 cf Inflow=2.94 cfs 10,803 cf
Discarded=0.75 cfs 10,800 cf Primary=0.00 cfs 0 cf Outflow=0.75 cfs 10,800 cf

Pond 2P: INFILTRATION POND #2 Peak Elev=245.35' Storage=1,446 cf Inflow=1.06 cfs 4,055 cf
Discarded=0.12 cfs 3,715 cf Primary=0.11 cfs 335 cf Outflow=0.23 cfs 4,051 cf

Link 7L: DESIGN POINT #1 Inflow=10.26 cfs 44,788 cf
Primary=10.26 cfs 44,788 cf

Total Runoff Area = 376,252 sf Runoff Volume = 59,311 cf Average Runoff Depth = 1.89"
79.31% Pervious = 298,387 sf 20.69% Impervious = 77,865 sf

Summary for Subcatchment 1S: SUBCATCHMENT #1

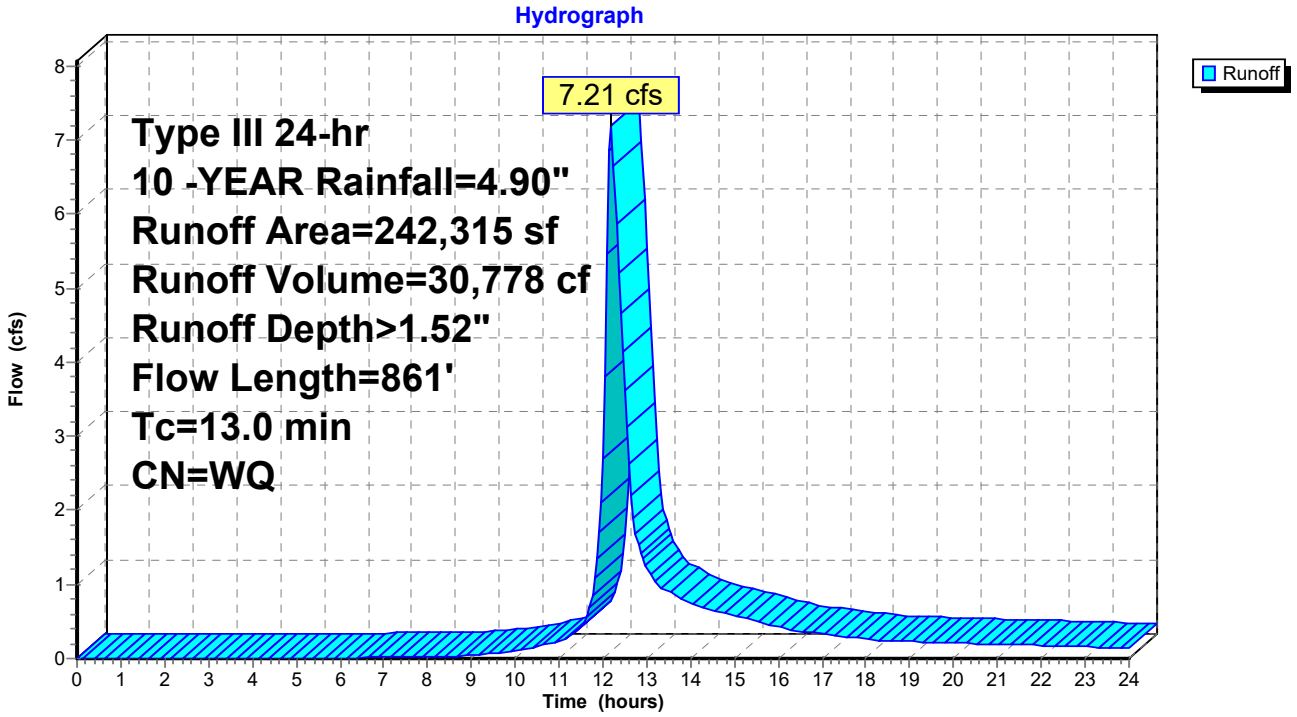
Runoff = 7.21 cfs @ 12.19 hrs, Volume= 30,778 cf, Depth> 1.52"
Routed to Link 7L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 -YEAR Rainfall=4.90"

Area (sf)	CN	Description
1,306	30	Woods, Good, HSG A
103,810	55	Woods, Good, HSG B
79,531	77	Woods, Good, HSG D
21,069	30	Woods, Good, HSG A
29,494	61	>75% Grass cover, Good, HSG B
595	98	Roofs, HSG B
1,549	98	Roofs, HSG B
661	98	Roofs, HSG B
816	98	Roofs, HSG B
529	98	Roofs, HSG B
856	98	Roofs, HSG B
1,445	98	Roofs, HSG B
654	98	Roofs, HSG B
242,315		Weighted Average
235,210	61	97.07% Pervious Area
7,105	98	2.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.4	340	0.0625	4.03		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.8	421	0.0250	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.0	861	Total			

Subcatchment 1S: SUBCATCHMENT #1



Summary for Subcatchment 2S: SUBCATHMENT #2

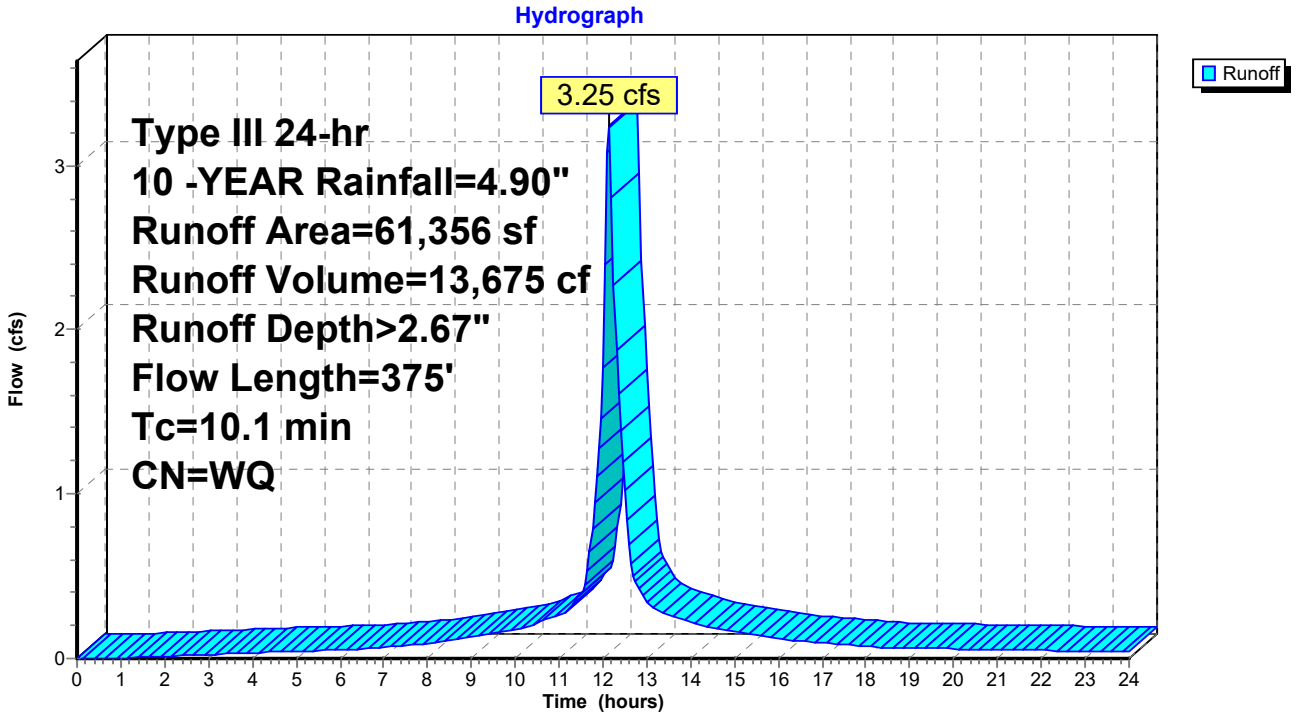
Runoff = 3.25 cfs @ 12.14 hrs, Volume= 13,675 cf, Depth> 2.67"
Routed to Link 7L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 -YEAR Rainfall=4.90"

Area (sf)	CN	Description
2,432	39	>75% Grass cover, Good, HSG A
34,186	98	Paved parking, HSG B
17,480	39	>75% Grass cover, Good, HSG A
4,187	39	>75% Grass cover, Good, HSG A
3,071	39	>75% Grass cover, Good, HSG A
61,356		Weighted Average
27,170	39	44.28% Pervious Area
34,186	98	55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0450	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.7	125	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	150	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.1	50	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
10.1	375	Total			

Subcatchment 2S: SUBCATHMENT #2



Summary for Subcatchment 3S: SUBCATCHEMENT #3

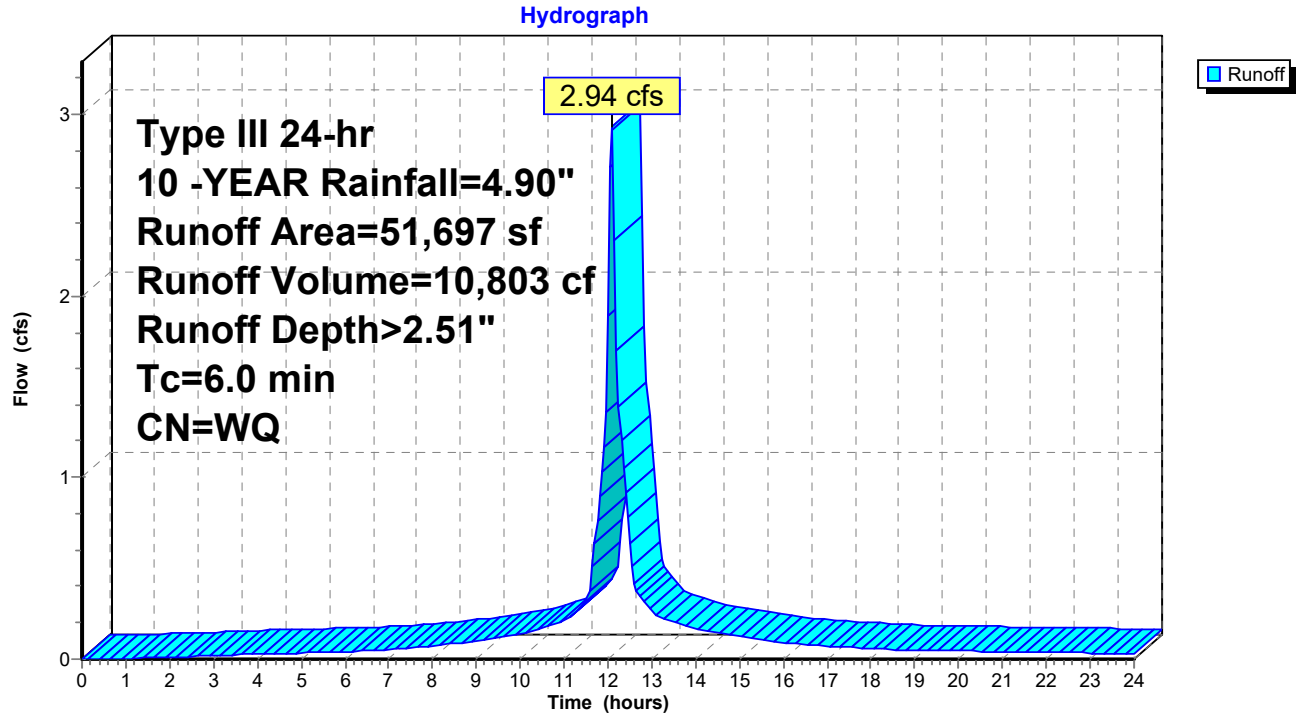
Runoff = 2.94 cfs @ 12.09 hrs, Volume= 10,803 cf, Depth> 2.51"
Routed to Pond 1P : INFILTRATION POND #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 -YEAR Rainfall=4.90"

Area (sf)	CN	Description
5,209	30	Woods, Good, HSG A
4,766	55	Woods, Good, HSG B
6,088	39	>75% Grass cover, Good, HSG A
26,551	98	Paved parking, HSG A
1,913	39	>75% Grass cover, Good, HSG A
7,170	30	Woods, Good, HSG A
51,697		Weighted Average
25,146	38	48.64% Pervious Area
26,551	98	51.36% Impervious Area

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

Subcatchment 3S: SUBCATCHEMENT #3



Summary for Subcatchment 4S: SUBCATHMENT #4

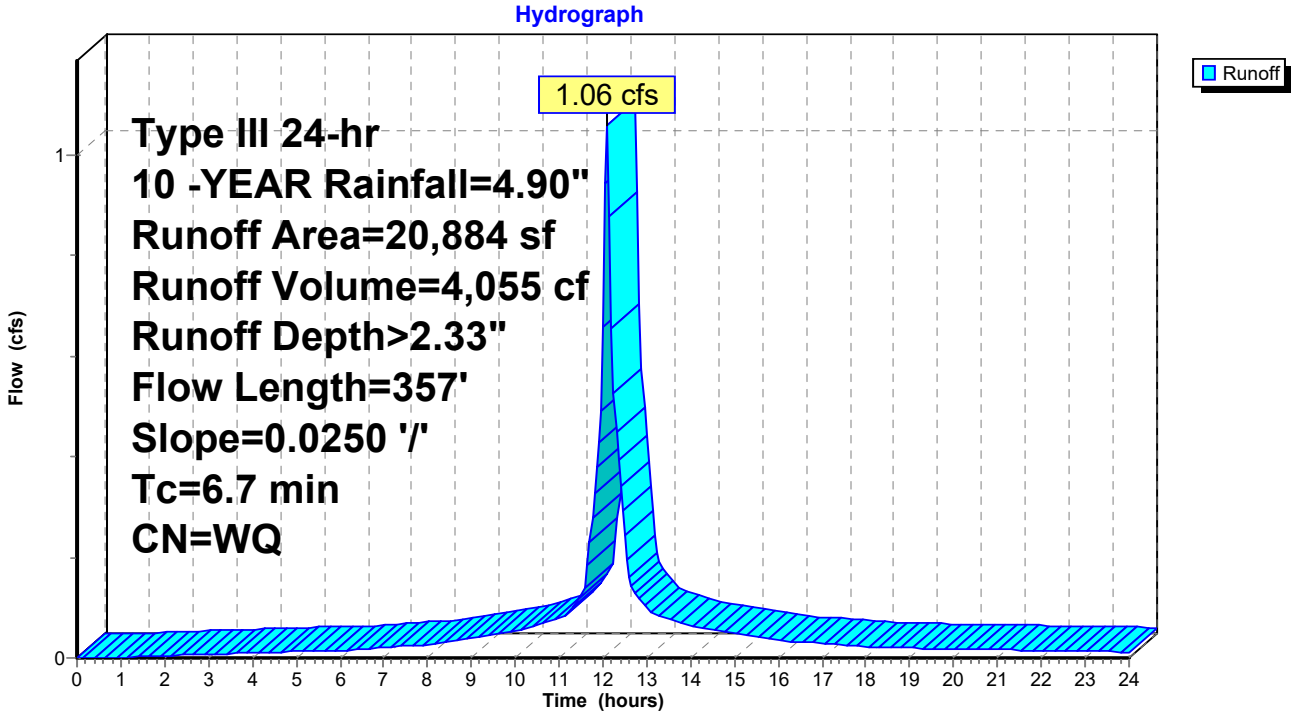
Runoff = 1.06 cfs @ 12.09 hrs, Volume= 4,055 cf, Depth> 2.33"
Routed to Pond 2P : INFILTRATION POND #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 -YEAR Rainfall=4.90"

Area (sf)	CN	Description
3,589	39	>75% Grass cover, Good, HSG A
10,023	98	Paved parking, HSG A
7,272	39	>75% Grass cover, Good, HSG A
20,884		Weighted Average
10,861	39	52.01% Pervious Area
10,023	98	47.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	50	0.0250	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.6	307	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.7	357	Total			

Subcatchment 4S: SUBCATHMENT #4



Summary for Pond 1P: INFILTRATION POND #1

Inflow Area = 51,697 sf, 51.36% Impervious, Inflow Depth > 2.51" for 10 -YEAR event
Inflow = 2.94 cfs @ 12.09 hrs, Volume= 10,803 cf
Outflow = 0.75 cfs @ 12.46 hrs, Volume= 10,800 cf, Atten= 75%, Lag= 22.4 min
Discarded = 0.75 cfs @ 12.46 hrs, Volume= 10,800 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 7L : DESIGN POINT #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 252.93' @ 12.46 hrs Surf.Area= 3,305 sf Storage= 2,474 cf

Plug-Flow detention time= 20.3 min calculated for 10,800 cf (100% of inflow)
Center-of-Mass det. time= 20.1 min (776.1 - 756.0)

Volume	Invert	Avail.Storage	Storage Description
#1	252.00'	6,849 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

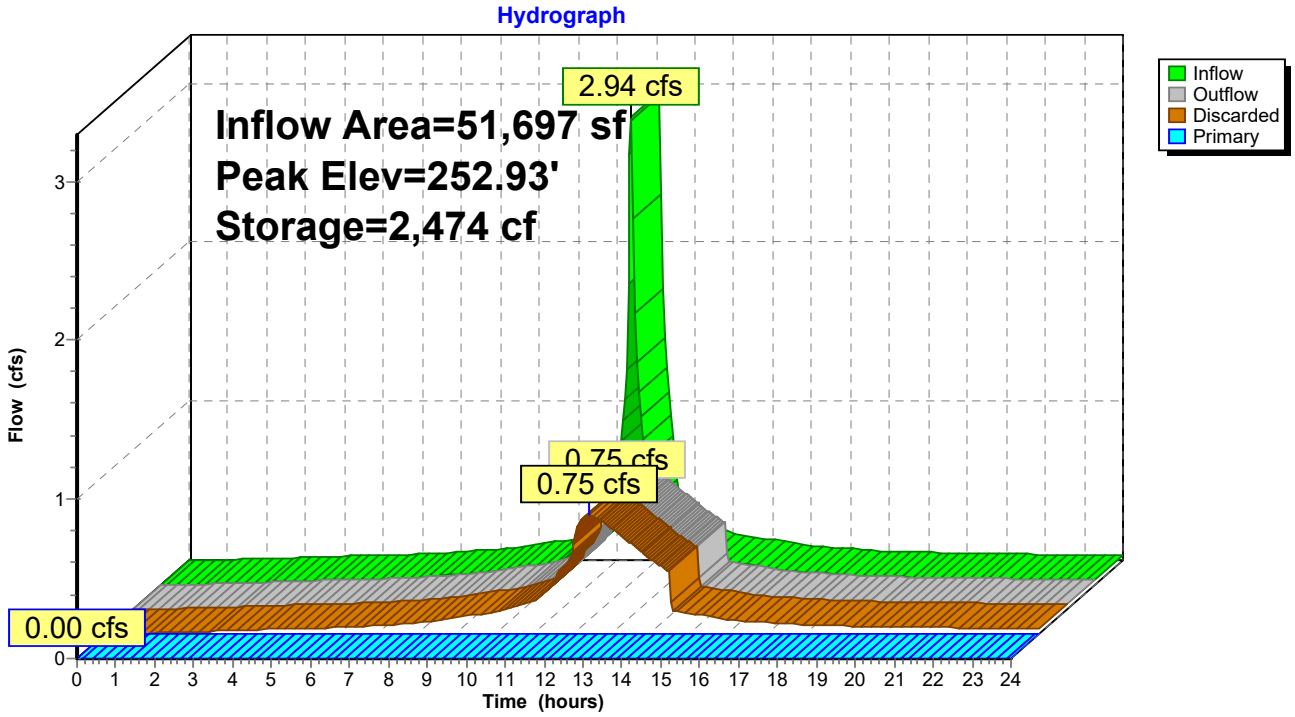
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
252.00	2,006	0	0
253.00	3,400	2,703	2,703
254.00	4,891	4,146	6,849

Device	Routing	Invert	Outlet Devices
#1	Discarded	252.00'	**8.270 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 248.00'
#2	Primary	253.00'	**1.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.75 cfs @ 12.46 hrs HW=252.93' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.75 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=252.00' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: INFILTRATION POND #1



Summary for Pond 2P: INFILTRATION POND #2

Inflow Area = 20,884 sf, 47.99% Impervious, Inflow Depth > 2.33" for 10 -YEAR event
Inflow = 1.06 cfs @ 12.09 hrs, Volume= 4,055 cf
Outflow = 0.23 cfs @ 12.52 hrs, Volume= 4,051 cf, Atten= 78%, Lag= 25.3 min
Discarded = 0.12 cfs @ 12.52 hrs, Volume= 3,715 cf
Primary = 0.11 cfs @ 12.52 hrs, Volume= 335 cf
Routed to Link 7L : DESIGN POINT #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 245.35' @ 12.52 hrs Surf.Area= 1,558 sf Storage= 1,446 cf

Plug-Flow detention time= 99.5 min calculated for 4,042 cf (100% of inflow)
Center-of-Mass det. time= 98.6 min (857.8 - 759.2)

Volume	Invert	Avail.Storage	Storage Description
#1	244.00'	2,619 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

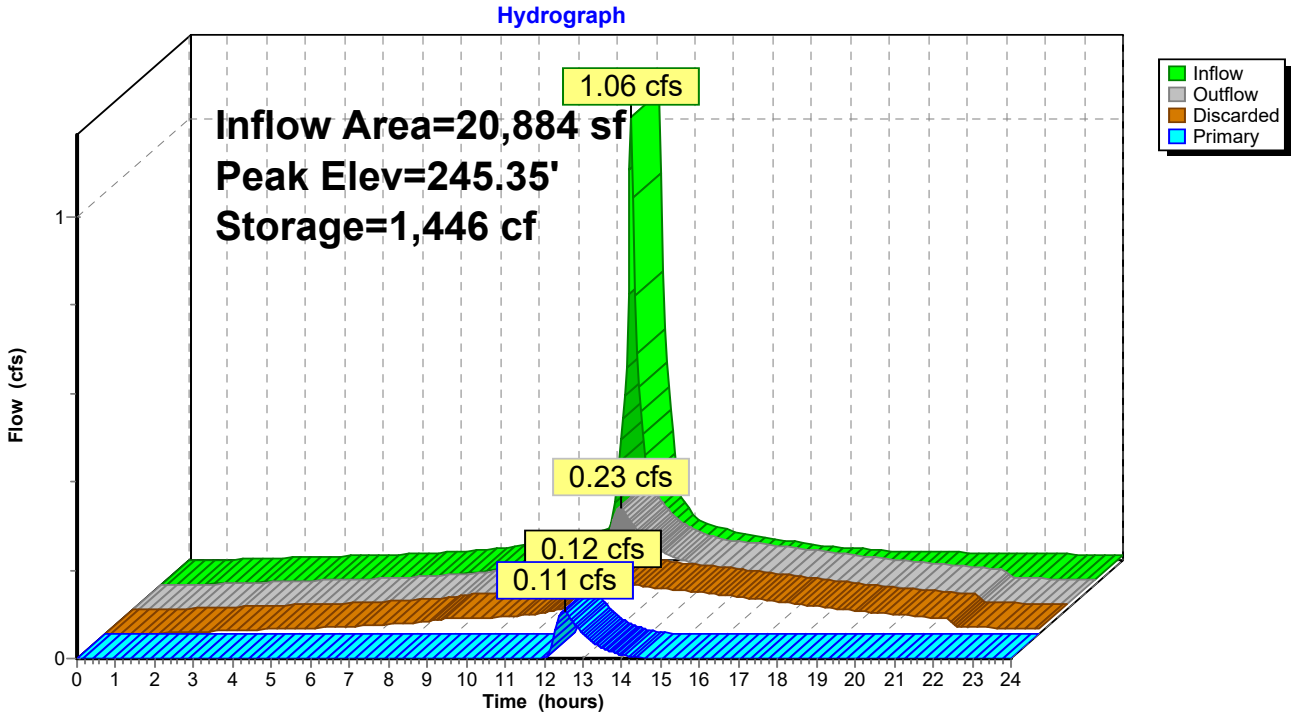
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.00	599	0	0
245.00	1,296	948	948
246.00	2,046	1,671	2,619

Device	Routing	Invert	Outlet Devices
#1	Discarded	244.00'	**2.410 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 242.00'
#2	Primary	245.00'	**60.0 deg x 0.50' rise Sharp-Crested Vee/Trap Weir** Cv= 2.53 (C= 3.16)
#3	Primary	245.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.12 cfs @ 12.52 hrs HW=245.35' (Free Discharge)
└**1=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=0.10 cfs @ 12.52 hrs HW=245.35' (Free Discharge)
├**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.10 cfs @ 1.49 fps)
└**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: INFILTRATION POND #2

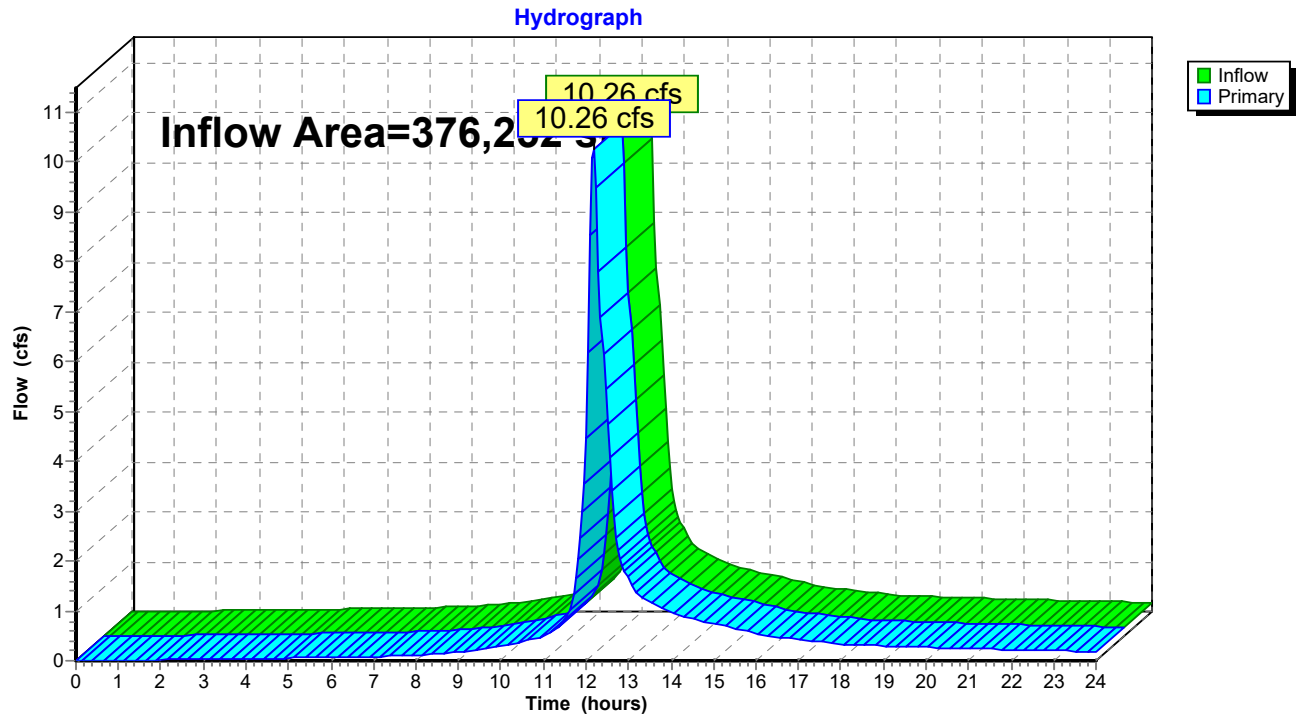


Summary for Link 7L: DESIGN POINT #1

Inflow Area = 376,252 sf, 20.69% Impervious, Inflow Depth > 1.43" for 10 -YEAR event
Inflow = 10.26 cfs @ 12.17 hrs, Volume= 44,788 cf
Primary = 10.26 cfs @ 12.17 hrs, Volume= 44,788 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 7L: DESIGN POINT #1



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SUBCATCHMENT#1 Runoff Area=242,315 sf 2.93% Impervious Runoff Depth>2.27"
Flow Length=861' Tc=13.0 min CN=WQ Runoff=11.10 cfs 45,865 cf

Subcatchment 2S: SUBCATHMENT#2 Runoff Area=61,356 sf 55.72% Impervious Runoff Depth>3.47"
Flow Length=375' Tc=10.1 min CN=WQ Runoff=4.08 cfs 17,749 cf

Subcatchment 3S: SUBCATCHEMENT#3 Runoff Area=51,697 sf 51.36% Impervious Runoff Depth>3.25"
Tc=6.0 min CN=WQ Runoff=3.74 cfs 13,988 cf

Subcatchment 4S: SUBCATHMENT#4 Runoff Area=20,884 sf 47.99% Impervious Runoff Depth>3.06"
Flow Length=357' Slope=0.0250 '/' Tc=6.7 min CN=WQ Runoff=1.33 cfs 5,321 cf

Pond 1P: INFILTRATION POND #1 Peak Elev=253.17' Storage=3,314 cf Inflow=3.74 cfs 13,988 cf
Discarded=0.85 cfs 13,661 cf Primary=0.23 cfs 322 cf Outflow=1.08 cfs 13,983 cf

Pond 2P: INFILTRATION POND #2 Peak Elev=245.53' Storage=1,736 cf Inflow=1.33 cfs 5,321 cf
Discarded=0.14 cfs 4,363 cf Primary=0.32 cfs 952 cf Outflow=0.46 cfs 5,315 cf

Link 7L: DESIGN POINT #1 Inflow=15.13 cfs 64,888 cf
Primary=15.13 cfs 64,888 cf

Total Runoff Area = 376,252 sf Runoff Volume = 82,922 cf Average Runoff Depth = 2.64"
79.31% Pervious = 298,387 sf 20.69% Impervious = 77,865 sf

Summary for Subcatchment 1S: SUBCATCHMENT #1

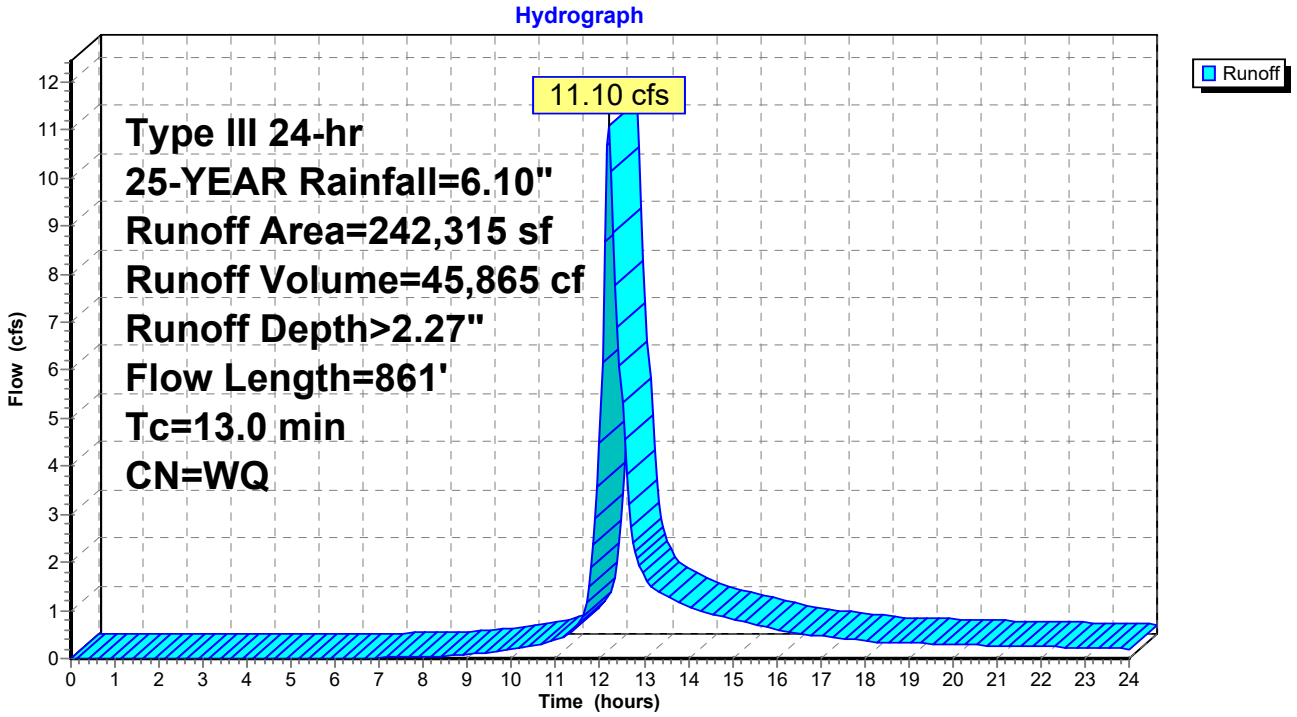
Runoff = 11.10 cfs @ 12.19 hrs, Volume= 45,865 cf, Depth> 2.27"
Routed to Link 7L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.10"

Area (sf)	CN	Description
1,306	30	Woods, Good, HSG A
103,810	55	Woods, Good, HSG B
79,531	77	Woods, Good, HSG D
21,069	30	Woods, Good, HSG A
29,494	61	>75% Grass cover, Good, HSG B
595	98	Roofs, HSG B
1,549	98	Roofs, HSG B
661	98	Roofs, HSG B
816	98	Roofs, HSG B
529	98	Roofs, HSG B
856	98	Roofs, HSG B
1,445	98	Roofs, HSG B
654	98	Roofs, HSG B
242,315		Weighted Average
235,210	61	97.07% Pervious Area
7,105	98	2.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.4	340	0.0625	4.03		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.8	421	0.0250	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.0	861	Total			

Subcatchment 1S: SUBCATCHMENT #1



Summary for Subcatchment 2S: SUBCATHMENT #2

[47] Hint: Peak is 115% of capacity of segment #3

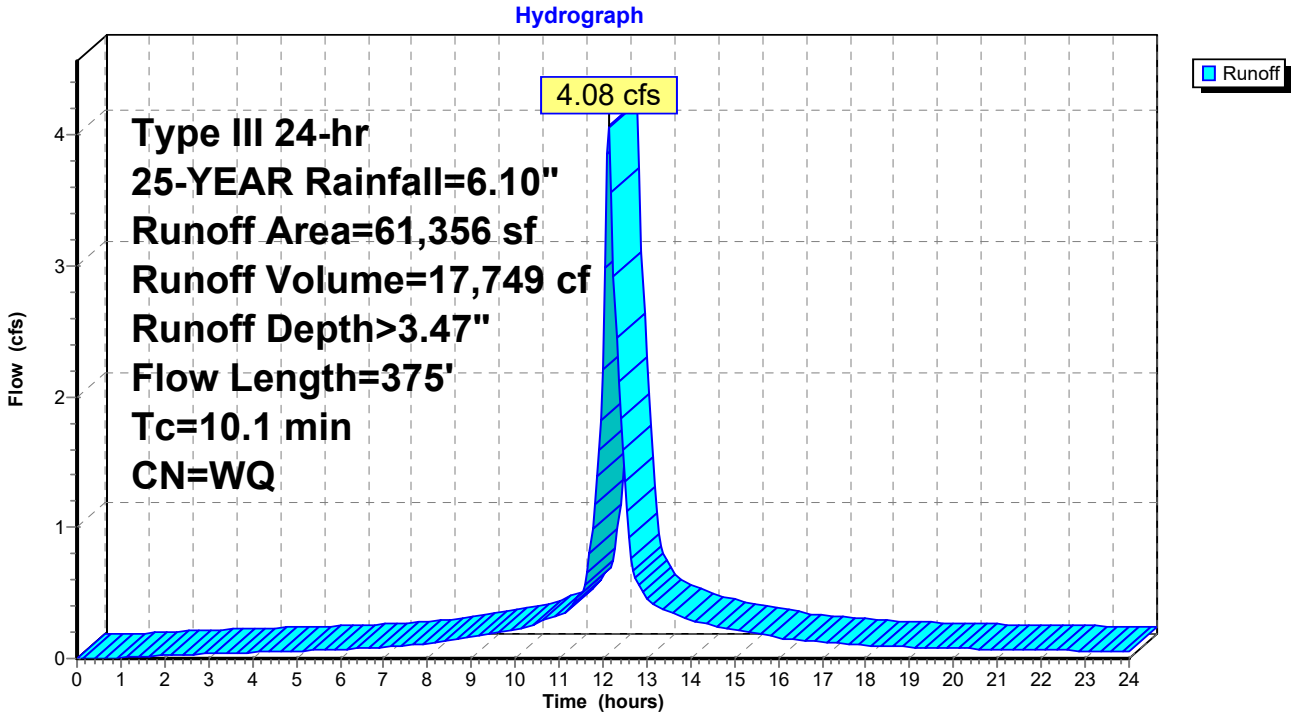
Runoff = 4.08 cfs @ 12.14 hrs, Volume= 17,749 cf, Depth> 3.47"
Routed to Link 7L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.10"

Area (sf)	CN	Description
2,432	39	>75% Grass cover, Good, HSG A
34,186	98	Paved parking, HSG B
17,480	39	>75% Grass cover, Good, HSG A
4,187	39	>75% Grass cover, Good, HSG A
3,071	39	>75% Grass cover, Good, HSG A
61,356		Weighted Average
27,170	39	44.28% Pervious Area
34,186	98	55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0450	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.7	125	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	150	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.1	50	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
10.1	375	Total			

Subcatchment 2S: SUBCATHMENT #2



Summary for Subcatchment 3S: SUBCATCHEMENT #3

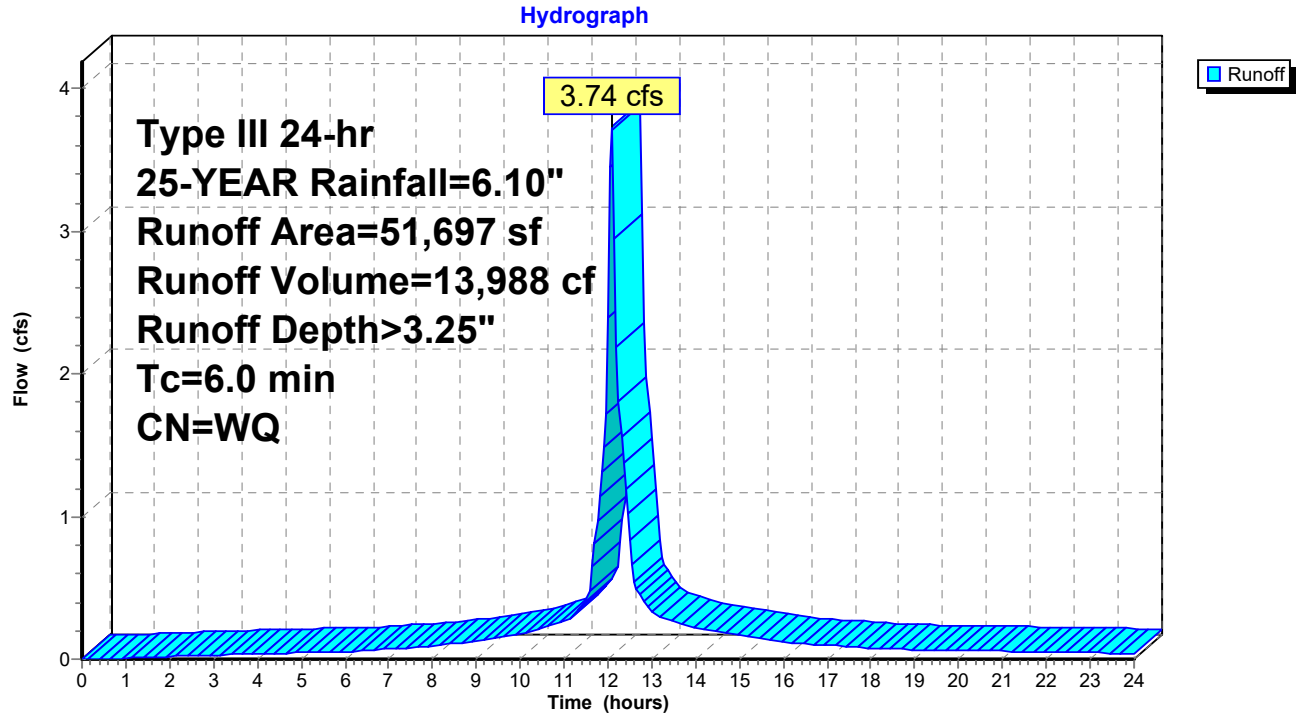
Runoff = 3.74 cfs @ 12.09 hrs, Volume= 13,988 cf, Depth> 3.25"
Routed to Pond 1P : INFILTRATION POND #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.10"

Area (sf)	CN	Description
5,209	30	Woods, Good, HSG A
4,766	55	Woods, Good, HSG B
6,088	39	>75% Grass cover, Good, HSG A
26,551	98	Paved parking, HSG A
1,913	39	>75% Grass cover, Good, HSG A
7,170	30	Woods, Good, HSG A
51,697		Weighted Average
25,146	38	48.64% Pervious Area
26,551	98	51.36% Impervious Area

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

Subcatchment 3S: SUBCATCHEMENT #3



Summary for Subcatchment 4S: SUBCATHMENT #4

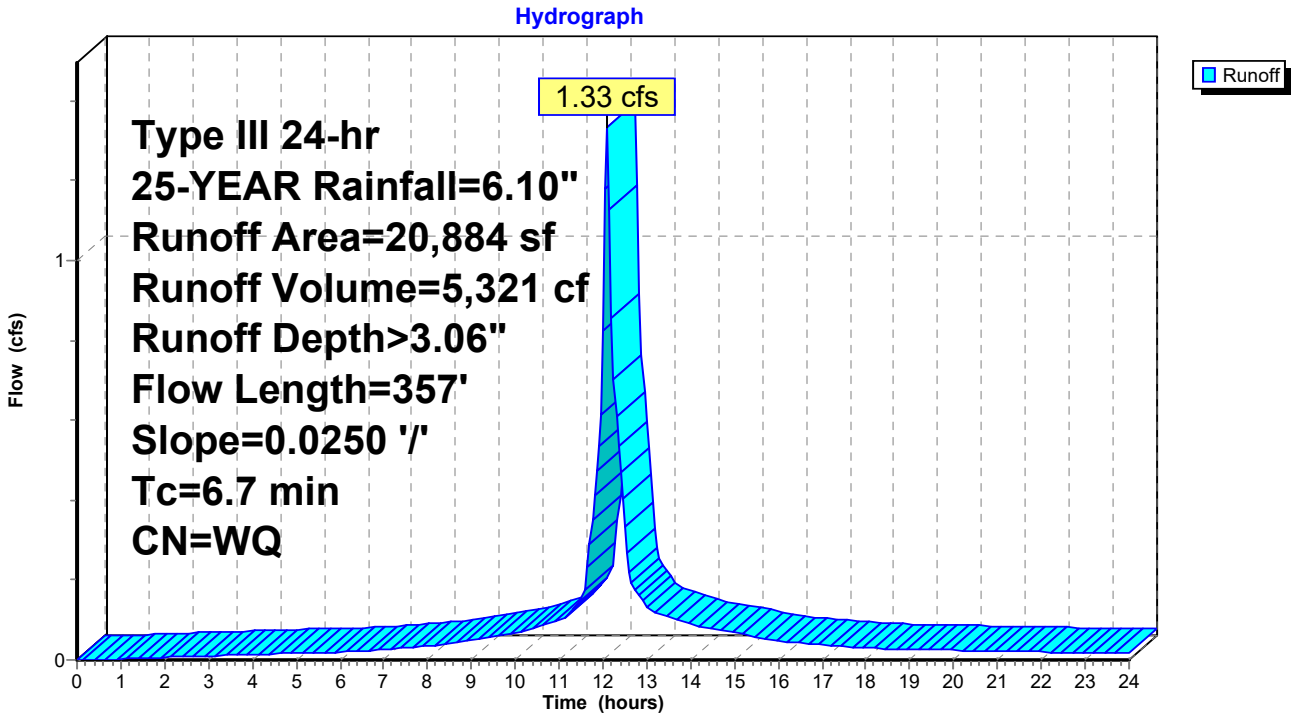
Runoff = 1.33 cfs @ 12.10 hrs, Volume= 5,321 cf, Depth> 3.06"
Routed to Pond 2P : INFILTRATION POND #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=6.10"

Area (sf)	CN	Description
3,589	39	>75% Grass cover, Good, HSG A
10,023	98	Paved parking, HSG A
7,272	39	>75% Grass cover, Good, HSG A
20,884		Weighted Average
10,861	39	52.01% Pervious Area
10,023	98	47.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	50	0.0250	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.6	307	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.7	357	Total			

Subcatchment 4S: SUBCATHMENT #4



Summary for Pond 1P: INFILTRATION POND #1

Inflow Area = 51,697 sf, 51.36% Impervious, Inflow Depth > 3.25" for 25-YEAR event
Inflow = 3.74 cfs @ 12.09 hrs, Volume= 13,988 cf
Outflow = 1.08 cfs @ 12.43 hrs, Volume= 13,983 cf, Atten= 71%, Lag= 20.6 min
Discarded = 0.85 cfs @ 12.43 hrs, Volume= 13,661 cf
Primary = 0.23 cfs @ 12.43 hrs, Volume= 322 cf
Routed to Link 7L : DESIGN POINT #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 253.17' @ 12.43 hrs Surf.Area= 3,658 sf Storage= 3,314 cf

Plug-Flow detention time= 24.1 min calculated for 13,954 cf (100% of inflow)
Center-of-Mass det. time= 23.8 min (781.1 - 757.3)

Volume	Invert	Avail.Storage	Storage Description
#1	252.00'	6,849 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

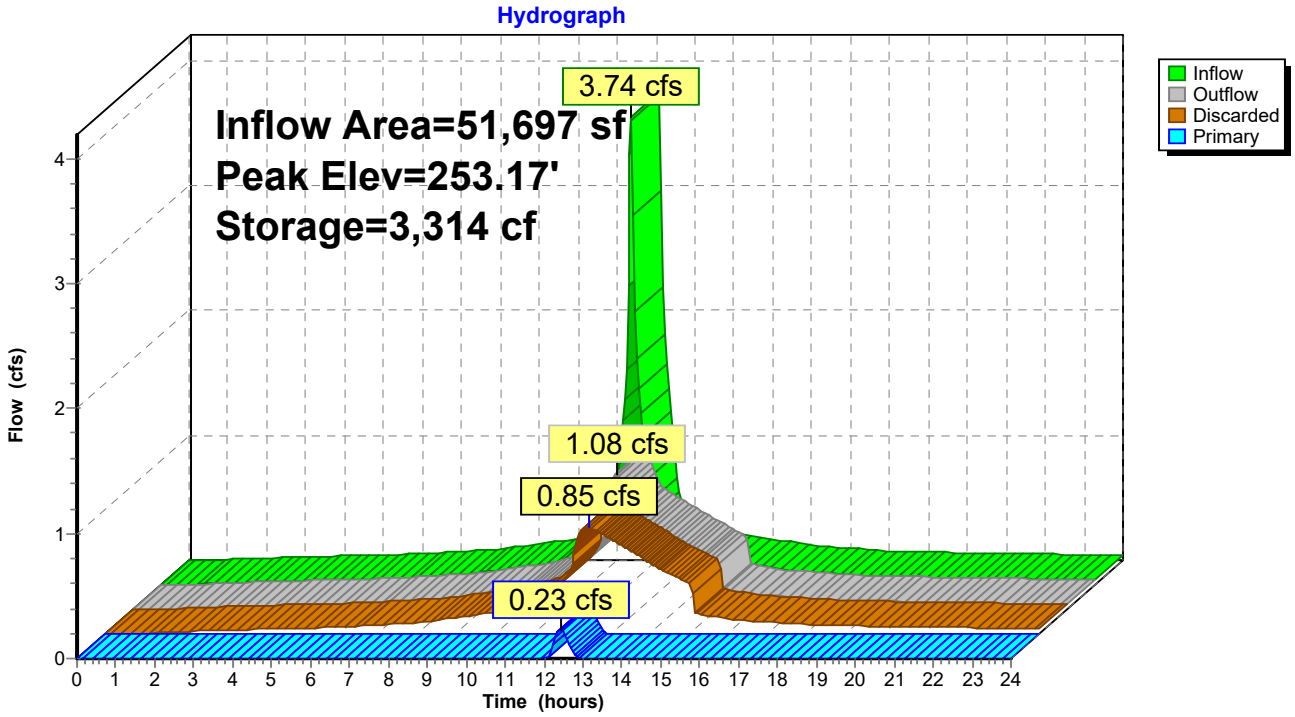
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
252.00	2,006	0	0
253.00	3,400	2,703	2,703
254.00	4,891	4,146	6,849

Device	Routing	Invert	Outlet Devices
#1	Discarded	252.00'	**8.270 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 248.00'
#2	Primary	253.00'	**1.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.85 cfs @ 12.43 hrs HW=253.17' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.85 cfs)

Primary OutFlow Max=0.23 cfs @ 12.43 hrs HW=253.17' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.23 cfs @ 1.36 fps)

Pond 1P: INFILTRATION POND #1



Summary for Pond 2P: INFILTRATION POND #2

Inflow Area = 20,884 sf, 47.99% Impervious, Inflow Depth > 3.06" for 25-YEAR event
Inflow = 1.33 cfs @ 12.10 hrs, Volume= 5,321 cf
Outflow = 0.46 cfs @ 12.41 hrs, Volume= 5,315 cf, Atten= 66%, Lag= 19.0 min
Discarded = 0.14 cfs @ 12.41 hrs, Volume= 4,363 cf
Primary = 0.32 cfs @ 12.41 hrs, Volume= 952 cf
Routed to Link 7L : DESIGN POINT #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 245.53' @ 12.41 hrs Surf.Area= 1,692 sf Storage= 1,736 cf

Plug-Flow detention time= 95.8 min calculated for 5,315 cf (100% of inflow)
Center-of-Mass det. time= 95.0 min (857.0 - 762.0)

Volume	Invert	Avail.Storage	Storage Description
#1	244.00'	2,619 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

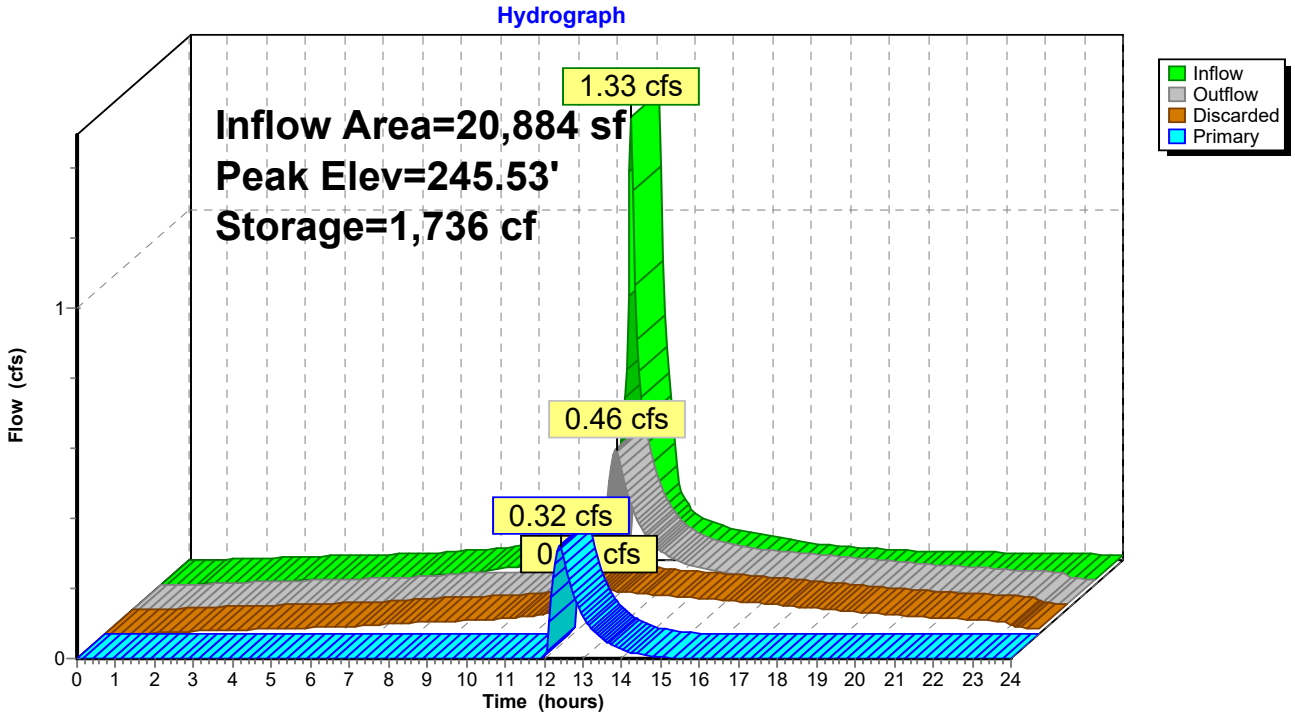
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.00	599	0	0
245.00	1,296	948	948
246.00	2,046	1,671	2,619

Device	Routing	Invert	Outlet Devices
#1	Discarded	244.00'	**2.410 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 242.00'
#2	Primary	245.00'	**60.0 deg x 0.50' rise Sharp-Crested Vee/Trap Weir** Cv= 2.53 (C= 3.16)
#3	Primary	245.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.14 cfs @ 12.41 hrs HW=245.53' (Free Discharge)
└**1=Exfiltration** (Controls 0.14 cfs)

Primary OutFlow Max=0.32 cfs @ 12.41 hrs HW=245.53' (Free Discharge)
├**2=Sharp-Crested Vee/Trap Weir** (Orifice Controls 0.29 cfs @ 1.98 fps)
└**3=Sharp-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.54 fps)

Pond 2P: INFILTRATION POND #2

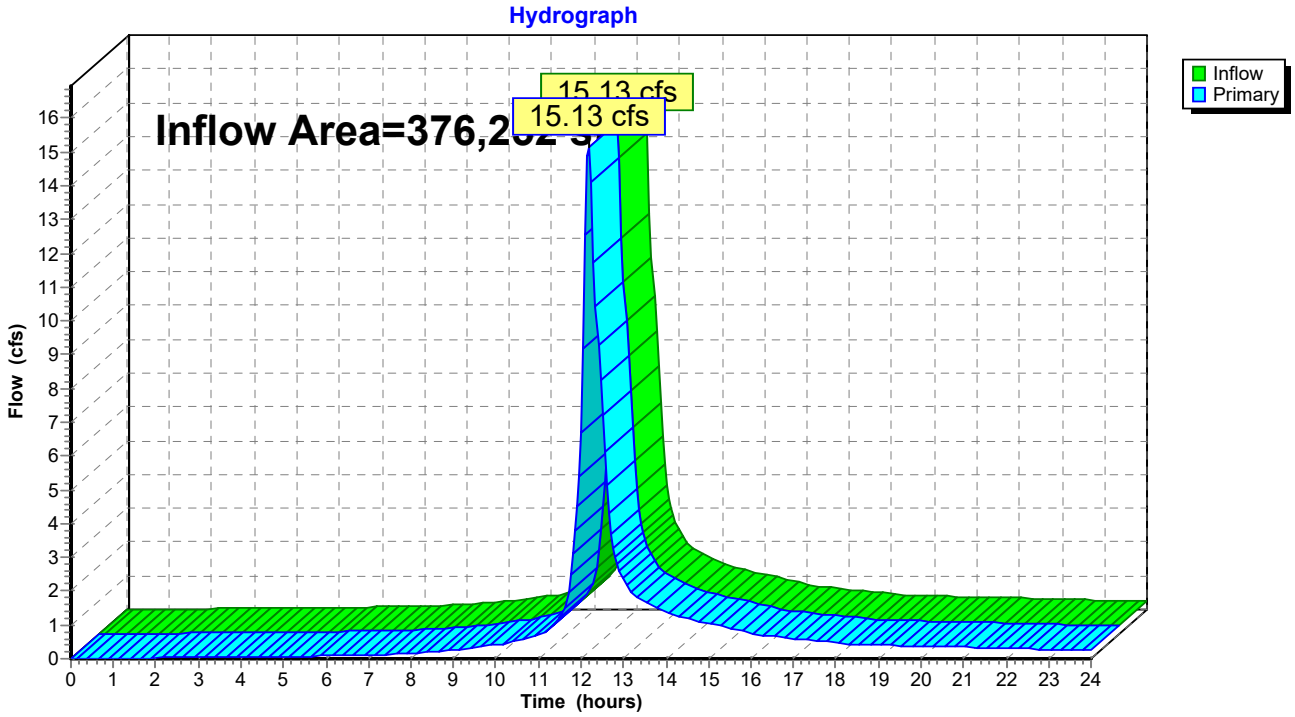


Summary for Link 7L: DESIGN POINT #1

Inflow Area = 376,252 sf, 20.69% Impervious, Inflow Depth > 2.07" for 25-YEAR event
Inflow = 15.13 cfs @ 12.17 hrs, Volume= 64,888 cf
Primary = 15.13 cfs @ 12.17 hrs, Volume= 64,888 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 7L: DESIGN POINT #1



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: SUBCATCHMENT#1 Runoff Area=242,315 sf 2.93% Impervious Runoff Depth>4.12"
Flow Length=861' Tc=13.0 min CN=WQ Runoff=20.50 cfs 83,262 cf

Subcatchment 2S: SUBCATHMENT#2 Runoff Area=61,356 sf 55.72% Impervious Runoff Depth>5.35"
Flow Length=375' Tc=10.1 min CN=WQ Runoff=6.41 cfs 27,376 cf

Subcatchment 3S: SUBCATCHEMENT#3 Runoff Area=51,697 sf 51.36% Impervious Runoff Depth>5.01"
Tc=6.0 min CN=WQ Runoff=5.70 cfs 21,591 cf

Subcatchment 4S: SUBCATHMENT#4 Runoff Area=20,884 sf 47.99% Impervious Runoff Depth>4.82"
Flow Length=357' Slope=0.0250 '/' Tc=6.7 min CN=WQ Runoff=2.18 cfs 8,383 cf

Pond 1P: INFILTRATION POND #1 Peak Elev=253.56' Storage=4,825 cf Inflow=5.70 cfs 21,591 cf
Discarded=1.03 cfs 18,923 cf Primary=1.21 cfs 2,662 cf Outflow=2.24 cfs 21,585 cf

Pond 2P: INFILTRATION POND #2 Peak Elev=245.76' Storage=2,143 cf Inflow=2.18 cfs 8,383 cf
Discarded=0.16 cfs 5,385 cf Primary=1.27 cfs 2,839 cf Outflow=1.43 cfs 8,224 cf

Link 7L: DESIGN POINT #1 Inflow=28.63 cfs 116,139 cf
Primary=28.63 cfs 116,139 cf

Total Runoff Area = 376,252 sf Runoff Volume = 140,613 cf Average Runoff Depth = 4.48"
79.31% Pervious = 298,387 sf 20.69% Impervious = 77,865 sf

Summary for Subcatchment 1S: SUBCATCHMENT #1

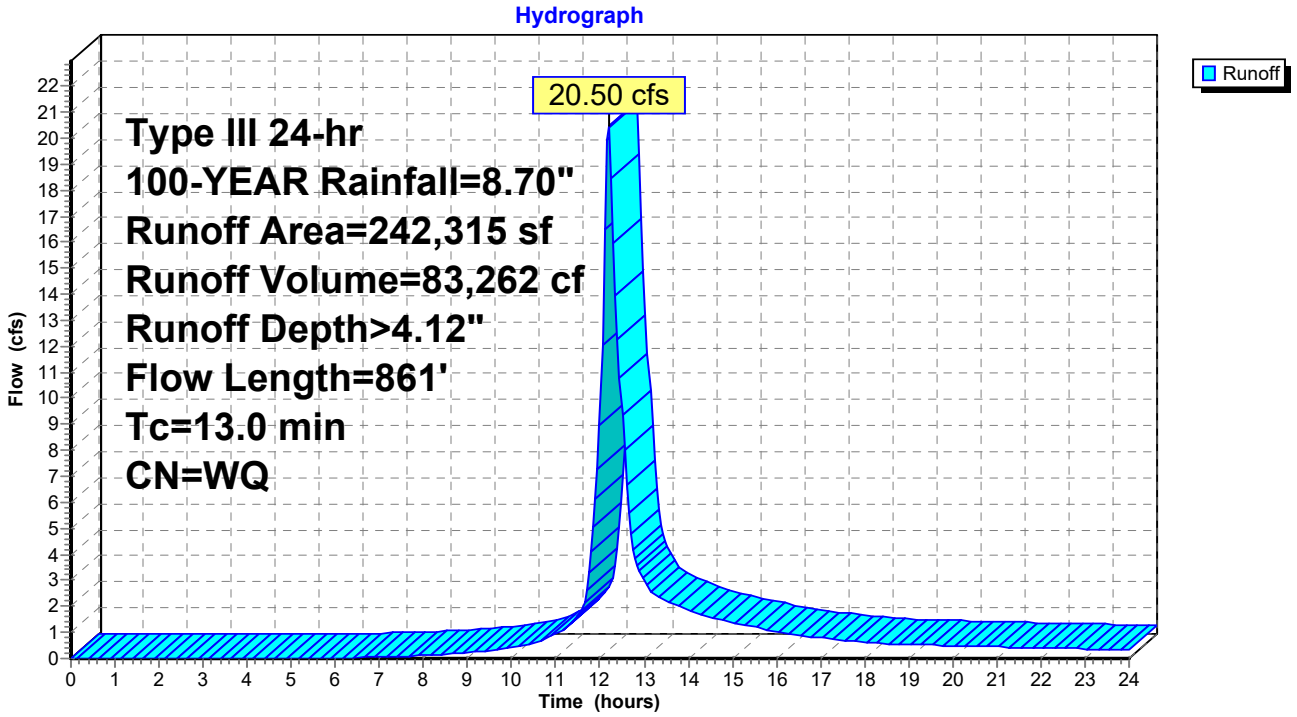
Runoff = 20.50 cfs @ 12.18 hrs, Volume= 83,262 cf, Depth> 4.12"
Routed to Link 7L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

Area (sf)	CN	Description
1,306	30	Woods, Good, HSG A
103,810	55	Woods, Good, HSG B
79,531	77	Woods, Good, HSG D
21,069	30	Woods, Good, HSG A
29,494	61	>75% Grass cover, Good, HSG B
595	98	Roofs, HSG B
1,549	98	Roofs, HSG B
661	98	Roofs, HSG B
816	98	Roofs, HSG B
529	98	Roofs, HSG B
856	98	Roofs, HSG B
1,445	98	Roofs, HSG B
654	98	Roofs, HSG B
242,315		Weighted Average
235,210	61	97.07% Pervious Area
7,105	98	2.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.4	340	0.0625	4.03		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.8	421	0.0250	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.0	861	Total			

Subcatchment 1S: SUBCATCHMENT #1



Summary for Subcatchment 2S: SUBCATHMENT #2

[47] Hint: Peak is 180% of capacity of segment #3

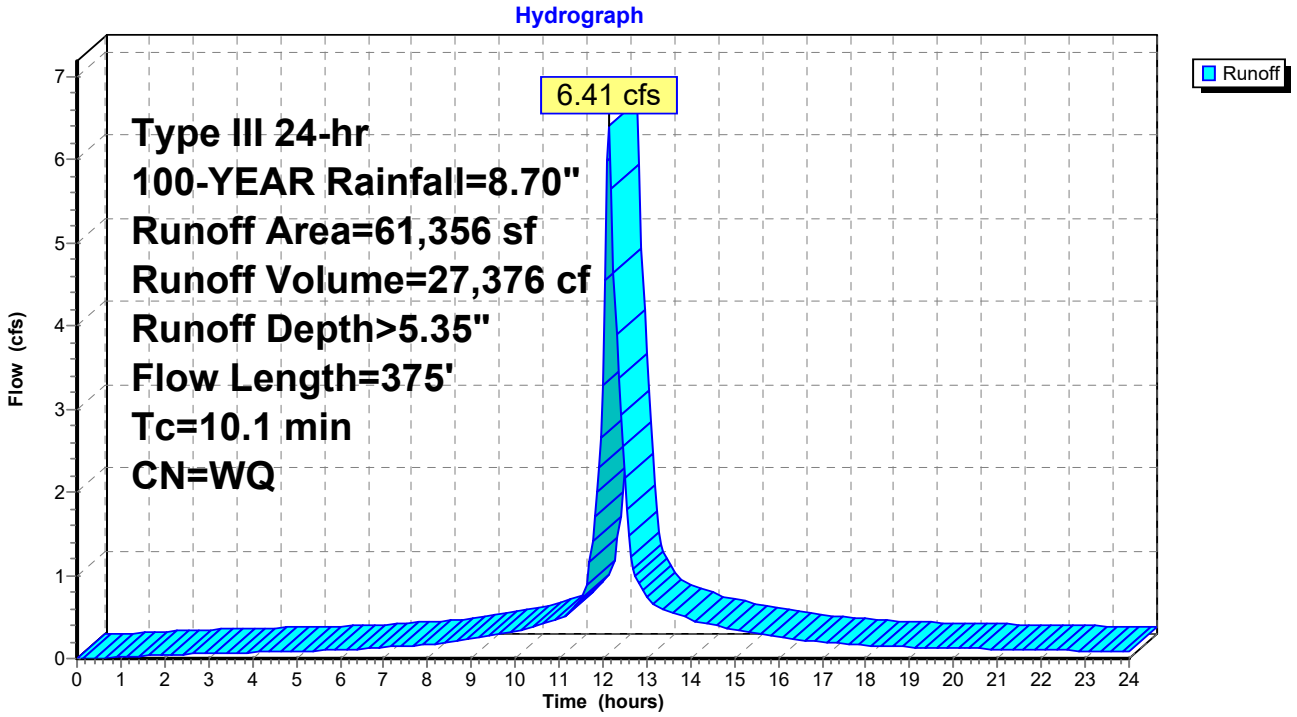
Runoff = 6.41 cfs @ 12.14 hrs, Volume= 27,376 cf, Depth> 5.35"
Routed to Link 7L : DESIGN POINT #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

Area (sf)	CN	Description
2,432	39	>75% Grass cover, Good, HSG A
34,186	98	Paved parking, HSG B
17,480	39	>75% Grass cover, Good, HSG A
4,187	39	>75% Grass cover, Good, HSG A
3,071	39	>75% Grass cover, Good, HSG A
61,356		Weighted Average
27,170	39	44.28% Pervious Area
34,186	98	55.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0450	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.7	125	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	150	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.1	50	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
10.1	375	Total			

Subcatchment 2S: SUBCATHMENT #2



Summary for Subcatchment 3S: SUBCATCHEMENT #3

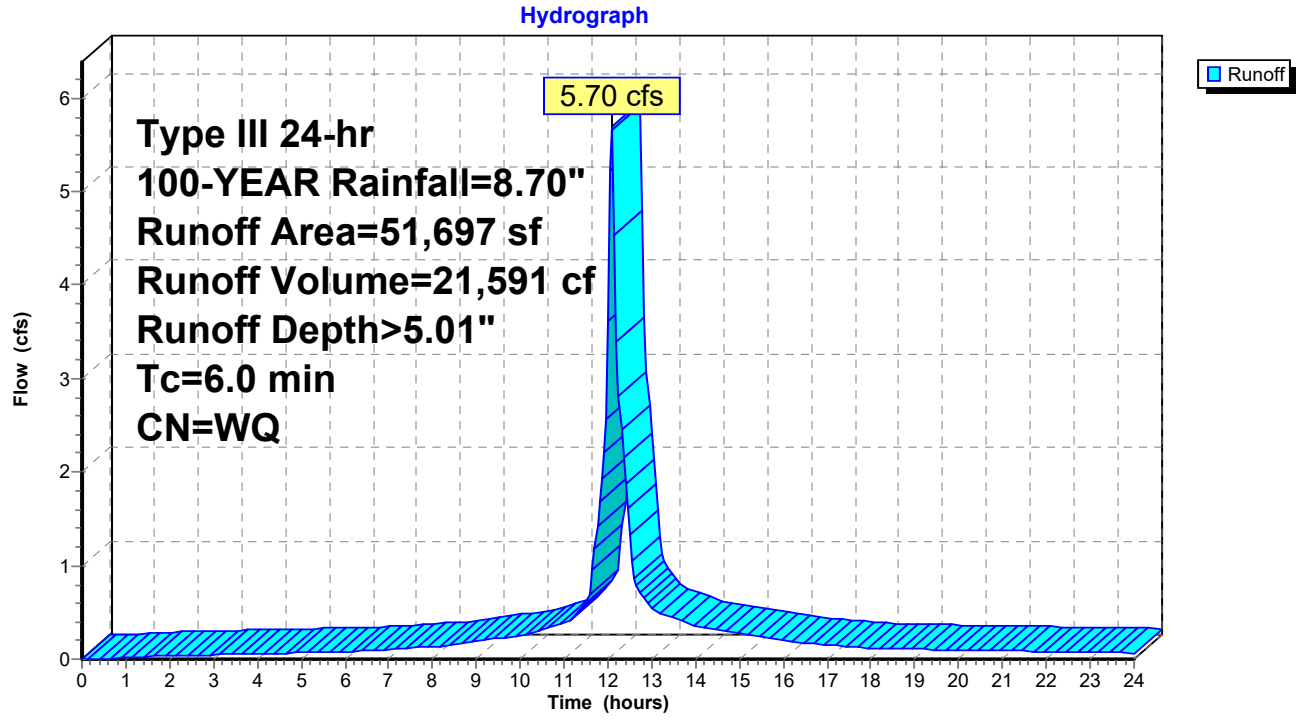
Runoff = 5.70 cfs @ 12.09 hrs, Volume= 21,591 cf, Depth> 5.01"
Routed to Pond 1P : INFILTRATION POND #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

Area (sf)	CN	Description
5,209	30	Woods, Good, HSG A
4,766	55	Woods, Good, HSG B
6,088	39	>75% Grass cover, Good, HSG A
26,551	98	Paved parking, HSG A
1,913	39	>75% Grass cover, Good, HSG A
7,170	30	Woods, Good, HSG A
51,697		Weighted Average
25,146	38	48.64% Pervious Area
26,551	98	51.36% Impervious Area

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

Subcatchment 3S: SUBCATCHEMENT #3



Summary for Subcatchment 4S: SUBCATHMENT #4

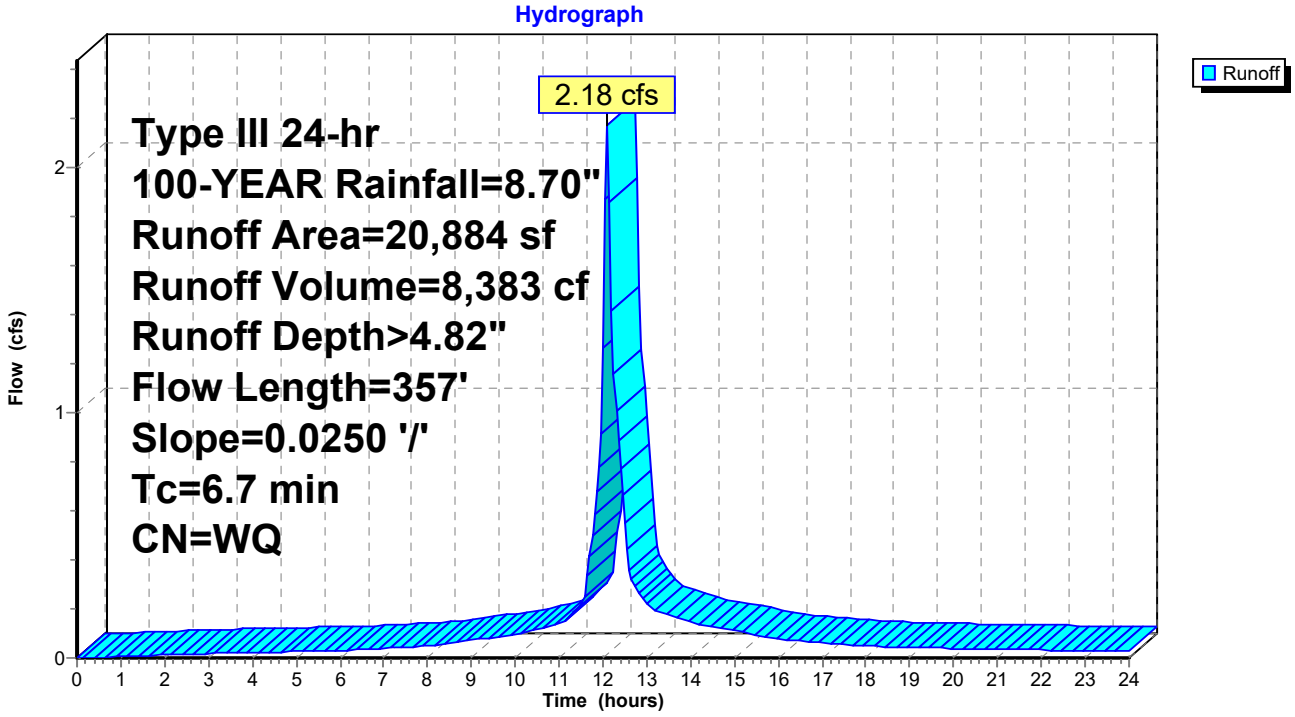
Runoff = 2.18 cfs @ 12.10 hrs, Volume= 8,383 cf, Depth> 4.82"
Routed to Pond 2P : INFILTRATION POND #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=8.70"

Area (sf)	CN	Description
3,589	39	>75% Grass cover, Good, HSG A
10,023	98	Paved parking, HSG A
7,272	39	>75% Grass cover, Good, HSG A
20,884		Weighted Average
10,861	39	52.01% Pervious Area
10,023	98	47.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	50	0.0250	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.6	307	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.7	357	Total			

Subcatchment 4S: SUBCATHMENT #4



Summary for Pond 1P: INFILTRATION POND #1

Inflow Area = 51,697 sf, 51.36% Impervious, Inflow Depth > 5.01" for 100-YEAR event
Inflow = 5.70 cfs @ 12.09 hrs, Volume= 21,591 cf
Outflow = 2.24 cfs @ 12.34 hrs, Volume= 21,585 cf, Atten= 61%, Lag= 15.0 min
Discarded = 1.03 cfs @ 12.34 hrs, Volume= 18,923 cf
Primary = 1.21 cfs @ 12.34 hrs, Volume= 2,662 cf
Routed to Link 7L : DESIGN POINT #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 253.56' @ 12.34 hrs Surf.Area= 4,230 sf Storage= 4,825 cf

Plug-Flow detention time= 25.6 min calculated for 21,585 cf (100% of inflow)
Center-of-Mass det. time= 25.4 min (785.6 - 760.2)

Volume	Invert	Avail.Storage	Storage Description
#1	252.00'	6,849 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

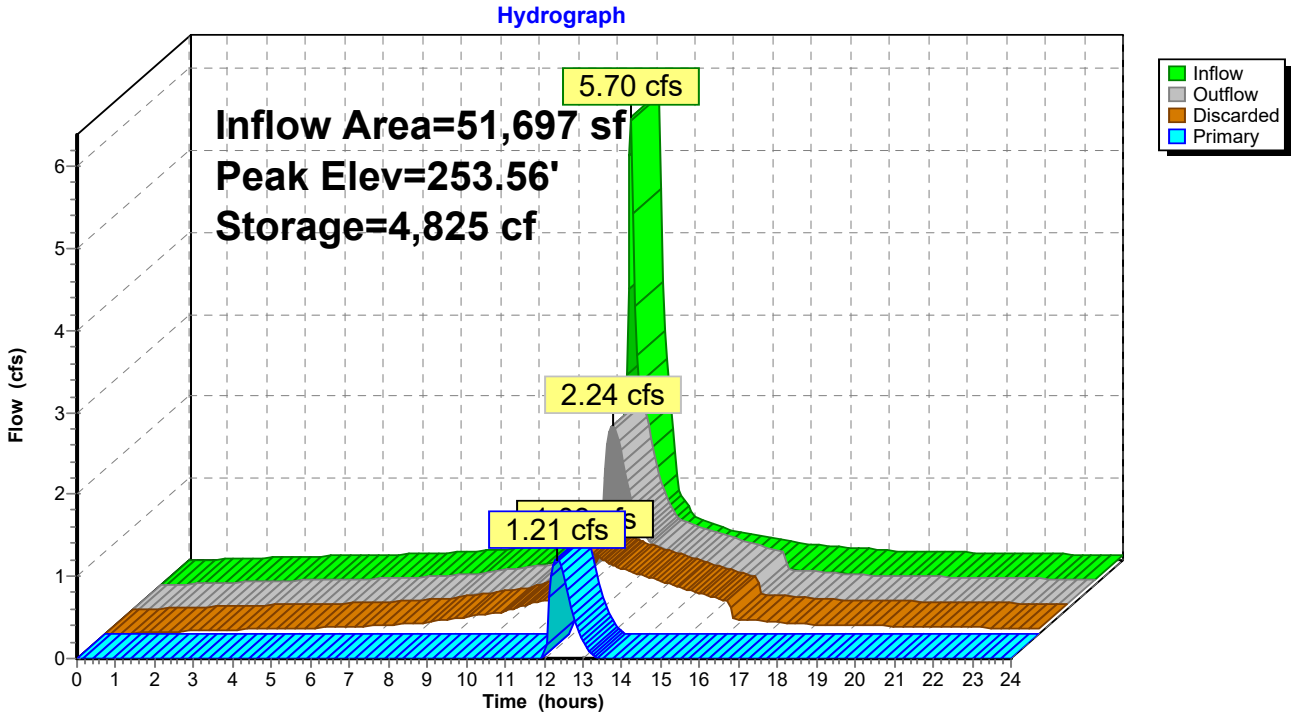
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
252.00	2,006	0	0
253.00	3,400	2,703	2,703
254.00	4,891	4,146	6,849

Device	Routing	Invert	Outlet Devices
#1	Discarded	252.00'	**8.270 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 248.00'
#2	Primary	253.00'	**1.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=1.03 cfs @ 12.34 hrs HW=253.56' (Free Discharge)
↑—**1=Exfiltration** (Controls 1.03 cfs)

Primary OutFlow Max=1.20 cfs @ 12.34 hrs HW=253.56' (Free Discharge)
↑—**2=Sharp-Crested Rectangular Weir** (Weir Controls 1.20 cfs @ 2.44 fps)

Pond 1P: INFILTRATION POND #1



Summary for Pond 2P: INFILTRATION POND #2

Inflow Area = 20,884 sf, 47.99% Impervious, Inflow Depth > 4.82" for 100-YEAR event
Inflow = 2.18 cfs @ 12.10 hrs, Volume= 8,383 cf
Outflow = 1.43 cfs @ 12.21 hrs, Volume= 8,224 cf, Atten= 34%, Lag= 6.7 min
Discarded = 0.16 cfs @ 12.21 hrs, Volume= 5,385 cf
Primary = 1.27 cfs @ 12.21 hrs, Volume= 2,839 cf
Routed to Link 7L : DESIGN POINT #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 245.76' @ 12.21 hrs Surf.Area= 1,864 sf Storage= 2,143 cf

Plug-Flow detention time= 85.9 min calculated for 8,224 cf (98% of inflow)
Center-of-Mass det. time= 73.8 min (839.6 - 765.8)

Volume	Invert	Avail.Storage	Storage Description
#1	244.00'	2,619 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

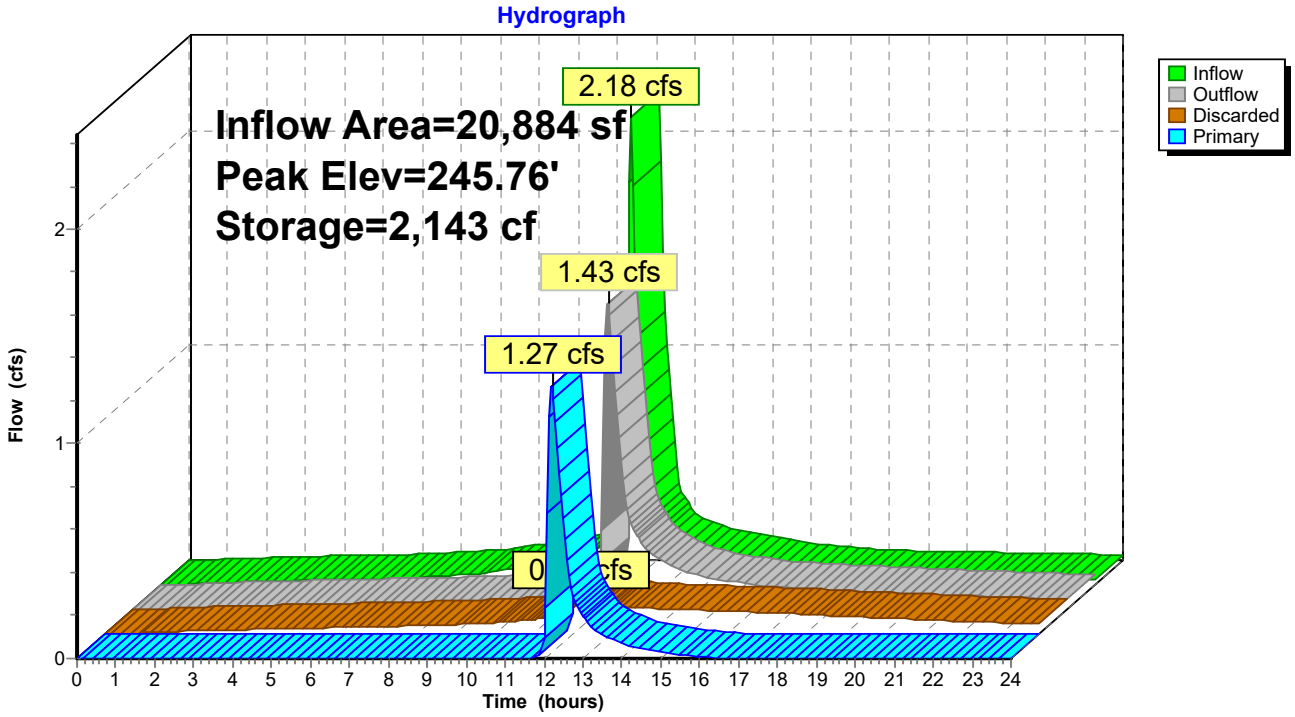
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.00	599	0	0
245.00	1,296	948	948
246.00	2,046	1,671	2,619

Device	Routing	Invert	Outlet Devices
#1	Discarded	244.00'	**2.410 in/hr Exfiltration over Horizontal area** Conductivity to Groundwater Elevation = 242.00'
#2	Primary	245.00'	**60.0 deg x 0.50' rise Sharp-Crested Vee/Trap Weir** Cv= 2.53 (C= 3.16)
#3	Primary	245.50'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.16 cfs @ 12.21 hrs HW=245.75' (Free Discharge)
└**1=Exfiltration** (Controls 0.16 cfs)

Primary OutFlow Max=1.25 cfs @ 12.21 hrs HW=245.75' (Free Discharge)
├**2=Sharp-Crested Vee/Trap Weir** (Orifice Controls 0.44 cfs @ 3.05 fps)
└**3=Sharp-Crested Rectangular Weir** (Weir Controls 0.81 cfs @ 1.65 fps)

Pond 2P: INFILTRATION POND #2

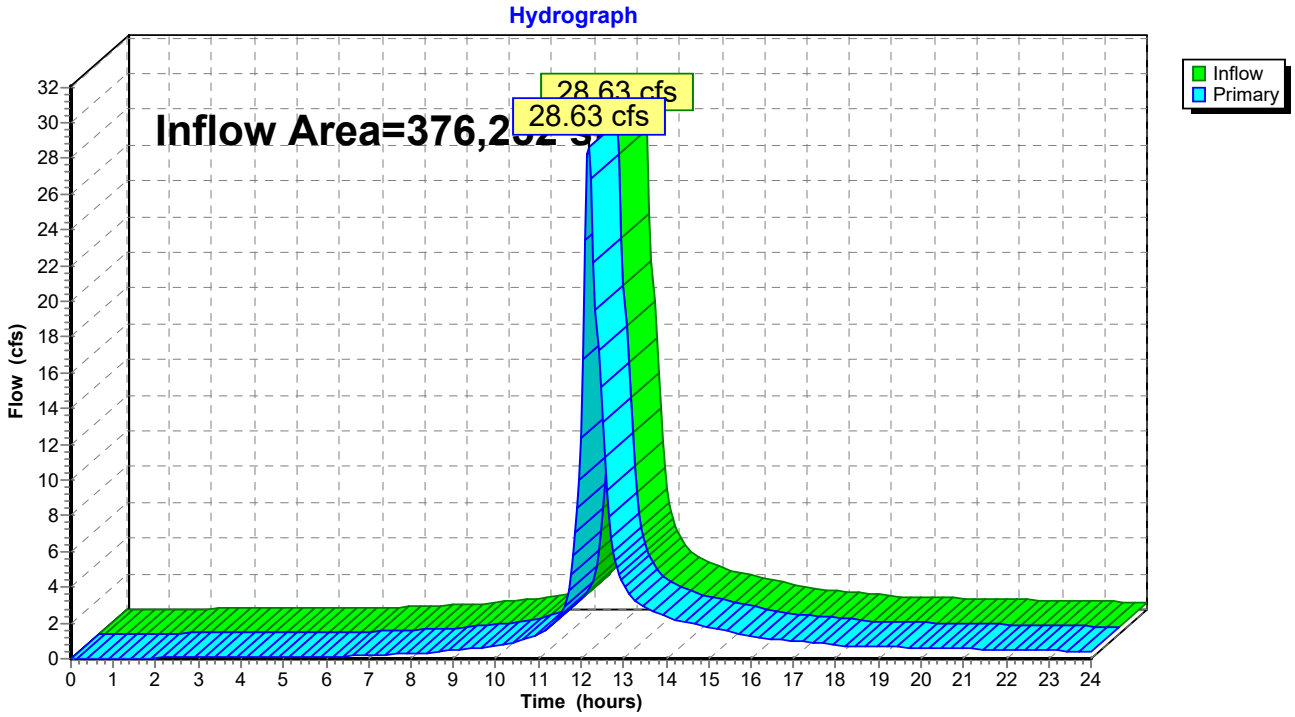


Summary for Link 7L: DESIGN POINT #1

Inflow Area = 376,252 sf, 20.69% Impervious, Inflow Depth > 3.70" for 100-YEAR event
Inflow = 28.63 cfs @ 12.18 hrs, Volume= 116,139 cf
Primary = 28.63 cfs @ 12.18 hrs, Volume= 116,139 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 7L: DESIGN POINT #1



CSDG
Coventry Survey Design Group
46 South Main Street
Coventry, RI 02816
401-823-5028
coventrysurvey.com

STORMWATER REPORT APPENDIX - E

TEST PIT LOGS

STATE OF RHODE ISLAND
Department of Environmental Management
Office of Water Resources
Email: dem.OWTS@dem.ri.gov
Site Evaluation Form
Part A – Soil Profile Description **Application Number** DRAINAGE ONLY

Property Owner: DANTE REAL ESTATES II
Property Location: TIOGUE AVENUE Plat: Lot:
Date of Test Hole: 11/21/24 Weather: Shaded: Yes ☐ No ☒ Time: 11:30 AM
Soil Evaluator: SAM SOURSA License Number: D 4087
Soil Evaluator email address: SAM@COUNTRYSURVEY.COM

TH #1 Horizon	Depth	Horizon Boundaries		Soil Colors		Re-Dox	Texture	Structure	Consistence	Soil Category
		Dist	Topo	Matrix	Re-Dox Features	Ab. S. Contr.				
FILL	55-0	A	S	7.5YR 7/3			SL	OM	VFR	3
B	0-12	A	S	10YR 4/6			SL	1FGR	FR	3
C	12-49			10YR 8/1	2.5YR 5/8	FPD	GS	OM	FR	1

TH ___ Horizon	Depth	Horizon Boundaries		Soil Colors		Re-Dox	Texture	Structure	Consistence	Soil Category
		Dist	Topo	Matrix	Re-Dox Features	Ab. S. Contr.				
A	0-8	A	S	10YR 3/3			SL	1FGR	FR	3
Bw	8-32	A	S	10YR 4/6			SL	1FGR	FR	3
C	32-84			10YR 8/1	2.5YR 5/8	FFD	GS	OM	FR	1

TH #1 Soil Class 1 Total Depth 103 Impervious/Limiting Layer Depth ____(og) GW Seepage Depth 17' SHWT 12 (og)
TH #2 Soil Class 1 Total Depth 96 Impervious/Limiting Layer Depth ____(og) GW Seepage Depth 72' SHWT 60 (og

Comments:

STATE OF RHODE ISLAND
Department of Environmental Management
Office of Water Resources
Email: dem.OWTS@dem.ri.gov
Site Evaluation Form
Part A – Soil Profile Description **Application Number** DRAINAGE ONLY

Property Owner: DANTE REAL ESTATES
Property Location: TIOGUE AVENUE Plat: Lot:
Date of Test Hole: 11/21/24 Weather: Shaded: Yes ☐ No ☐ Time: 1:30pm
Soil Evaluator: SAM SOURSA License Number: D 4087
Soil Evaluator email address: SAM@COVENTRYSURVEY.COM

TH #3 Horizon	Depth	Horizon Boundaries		Soil Colors		Re-Dox	Texture	Structure	Consistence	Soil Category
		Dist	Topo	Matrix	Re-Dox Features	Ab. S. Contr.				
A	0-8	A	S	10YR 3/3			SL	1FGR	FR	3
B	8-36	A	S	10YR 4/6			SL	1FGR	FR	3
C	36-96'			10YR 8/1	2.5YR 5/8	FFD	GS	GM	FR	1

TH #4 Horizon	Depth	Horizon Boundaries		Soil Colors		Re-Dox	Texture	Structure	Consistence	Soil Category
		Dist	Topo	Matrix	Re-Dox Features	Ab. S. Contr.				
A	0-8	A	S	10YR 3/3			SL	1FGR	FR	3
B	8-34	A	S	10YR 4/6			SL	1FGR	FR	3
C	34-120			10YR 8/1	2.5YR 5/8	FFD	GS	GM	FR	1

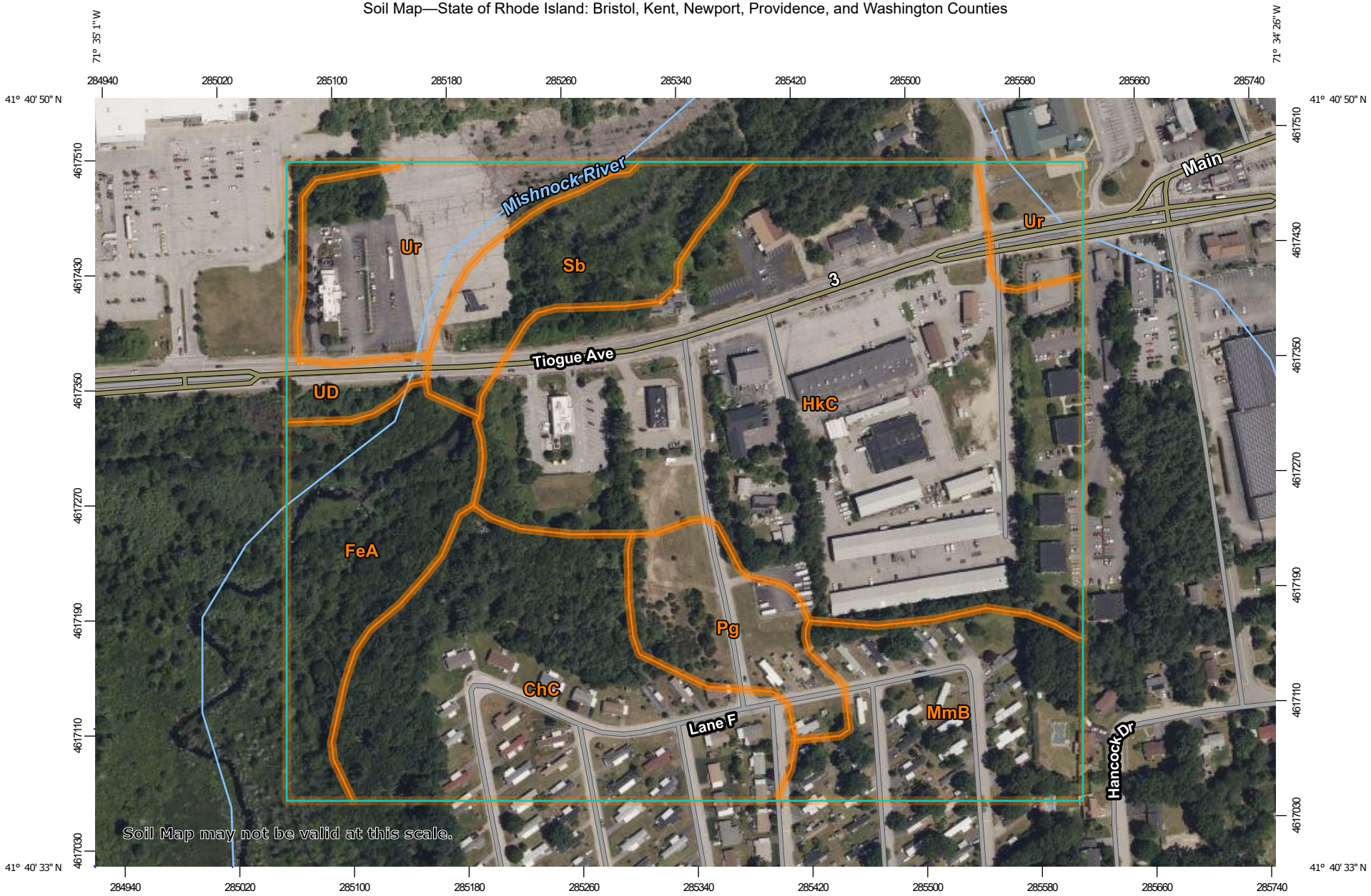
TH #3 Soil Class 1 Total Depth 96 Impervious/Limiting Layer Depth _____(og) GW Seepage Depth 84" SHWT 60" (og)
TH #4 Soil Class 1 Total Depth 120 Impervious/Limiting Layer Depth _____(og) GW Seepage Depth 96 SHWT 72" (og

Comments:

CSDG
Coventry Survey Design Group
46 South Main Street
Coventry, RI 02816
401-823-5028
coventrysurvey.com

STORMWATER REPORT APPENDIX - F

WEB SOIL SURVEY



Map Scale: 1:3,770 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

Soil Survey Area: State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties
Survey Area Data: Version 24, Aug 30, 2024

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

Date(s) aerial images were photographed: Jun 14, 2022—Jul 1, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ChC	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	10.8	17.7%
FeA	Freetown muck, 0 to 1 percent slopes	5.5	9.0%
HkC	Hinckley loamy sand, 8 to 15 percent slopes	24.6	40.1%
MmB	Merrimac fine sandy loam, 3 to 8 percent slopes	5.8	9.5%
Pg	Pits, gravel	3.2	5.2%
Sb	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	4.1	6.7%
UD	Udorthents-Urban land complex	1.4	2.2%
Ur	Urban land	5.9	9.6%
Totals for Area of Interest		**61.3**	**100.0%**