

HYDROCAD REPORTS

FOR STORMWATER

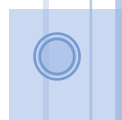
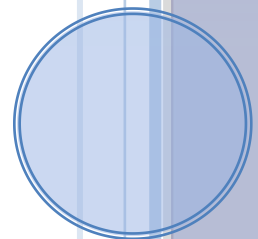
MANAGEMENT PLAN

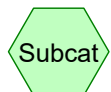
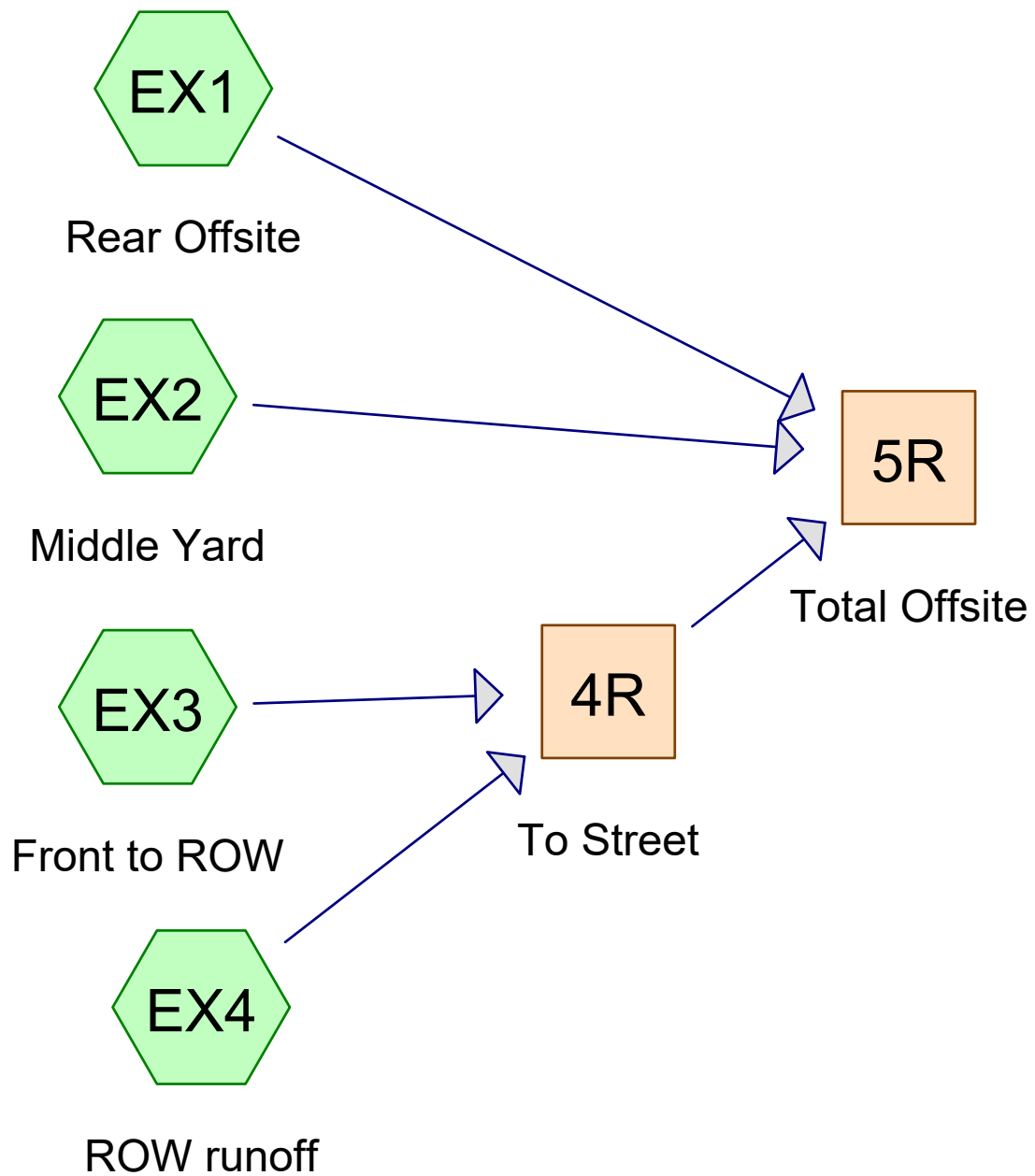
For Proposed Improvements at
23 Central Street, Newbury, Massachusetts

21 April 2020



Prepared by
Anthony Guba, P.E.
A.L. Prime Energy Consultant, Inc.
18 Lark Avenue, Saugus, MA 01906
Mobile 512-745-6400

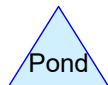




Subcat



Reach



Pond



Link

Routing Diagram for Byfield 23 Central Pre
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Byfield 23 Central Pre

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.961	61	>75% Grass cover, Good, HSG B (EX1, EX2, EX3, EX4)
0.086	98	Paved parking, HSG B (EX2, EX3, EX4)
0.026	98	Roofs, HSG B (EX2)
1.073	65	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.073	HSG B	EX1, EX2, EX3, EX4
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.073		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.961	0.000	0.000	0.000	0.961	>75% Grass cover, Good	EX1, EX2, EX3, EX4
0.000	0.086	0.000	0.000	0.000	0.086	Paved parking	EX2, EX3, EX4
0.000	0.026	0.000	0.000	0.000	0.026	Roofs	EX2
0.000	1.073	0.000	0.000	0.000	1.073	TOTAL AREA	

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Type II 24-hr 2Yr Rainfall=3.10"

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Time span=0.00-28.00 hrs, dt=0.02 hrs, 1401 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX1: Rear OffsiteRunoff Area=10,854 sf 0.00% Impervious Runoff Depth=0.40"
Flow Length=146' Slope=0.0540 '/' Tc=11.0 min CN=61 Runoff=0.10 cfs 0.008 af**Subcatchment EX2: Middle Yard**Runoff Area=26,474 sf 12.15% Impervious Runoff Depth=0.55"
Flow Length=212' Slope=0.3800 '/' Tc=6.8 min CN=65 Runoff=0.51 cfs 0.028 af**Subcatchment EX3: Front to ROW**Runoff Area=5,563 sf 20.64% Impervious Runoff Depth=0.72"
Flow Length=183' Slope=0.0330 '/' Tc=16.1 min CN=69 Runoff=0.10 cfs 0.008 af**Subcatchment EX4: ROW runoff**Runoff Area=3,844 sf 12.96% Impervious Runoff Depth=0.59"
Flow Length=78' Slope=0.0250 '/' Tc=9.1 min CN=66 Runoff=0.07 cfs 0.004 af**Reach 4R: To Street**Inflow=0.16 cfs 0.012 af
Outflow=0.16 cfs 0.012 af**Reach 5R: Total Offsite**Inflow=0.73 cfs 0.048 af
Outflow=0.73 cfs 0.048 af**Total Runoff Area = 1.073 ac Runoff Volume = 0.048 af Average Runoff Depth = 0.54"**
89.60% Pervious = 0.961 ac 10.40% Impervious = 0.112 ac

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Type II 24-hr 2Yr Rainfall=3.10"

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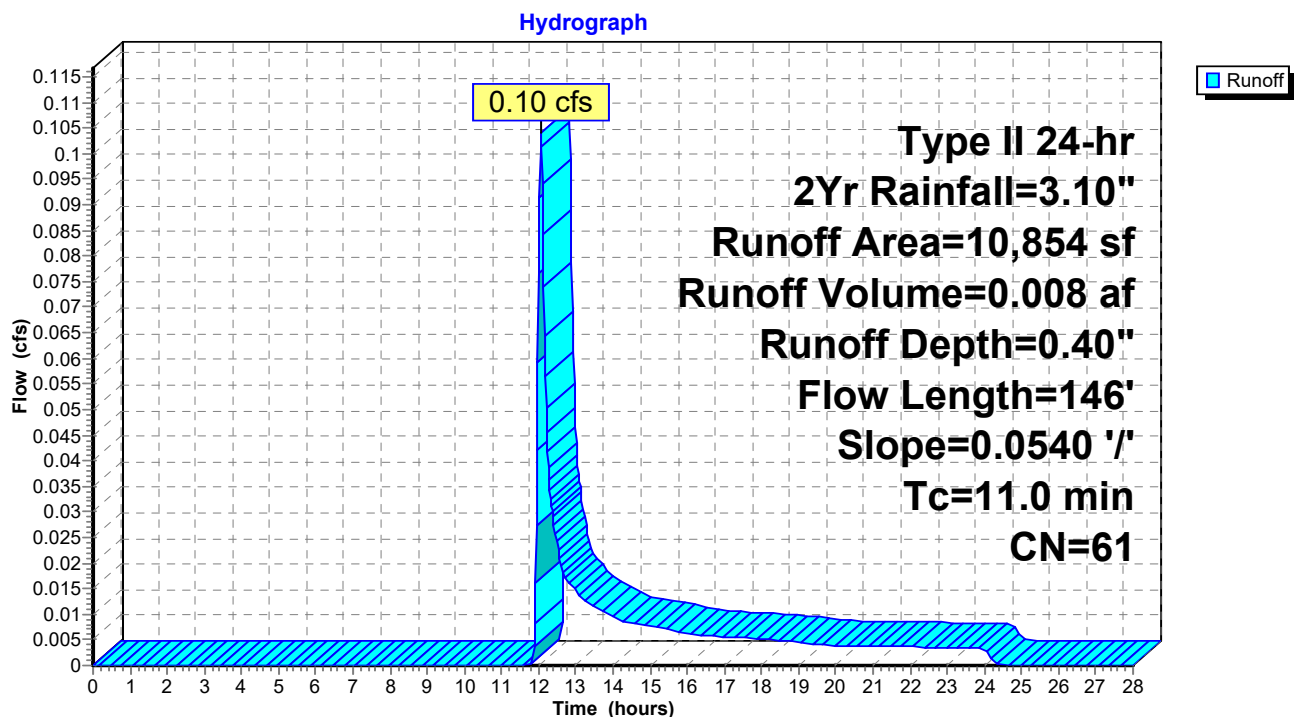
Summary for Subcatchment EX1: Rear Offsite

Runoff = 0.10 cfs @ 12.06 hrs, Volume= 0.008 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2Yr Rainfall=3.10"

Area (sf)	CN	Description
10,854	61	>75% Grass cover, Good, HSG B
10,854		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	146	0.0540	0.22		Sheet Flow, Rear Yard
Grass: Short n= 0.150 P2= 2.10"					

Subcatchment EX1: Rear Offsite

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Type II 24-hr 2Yr Rainfall=3.10"

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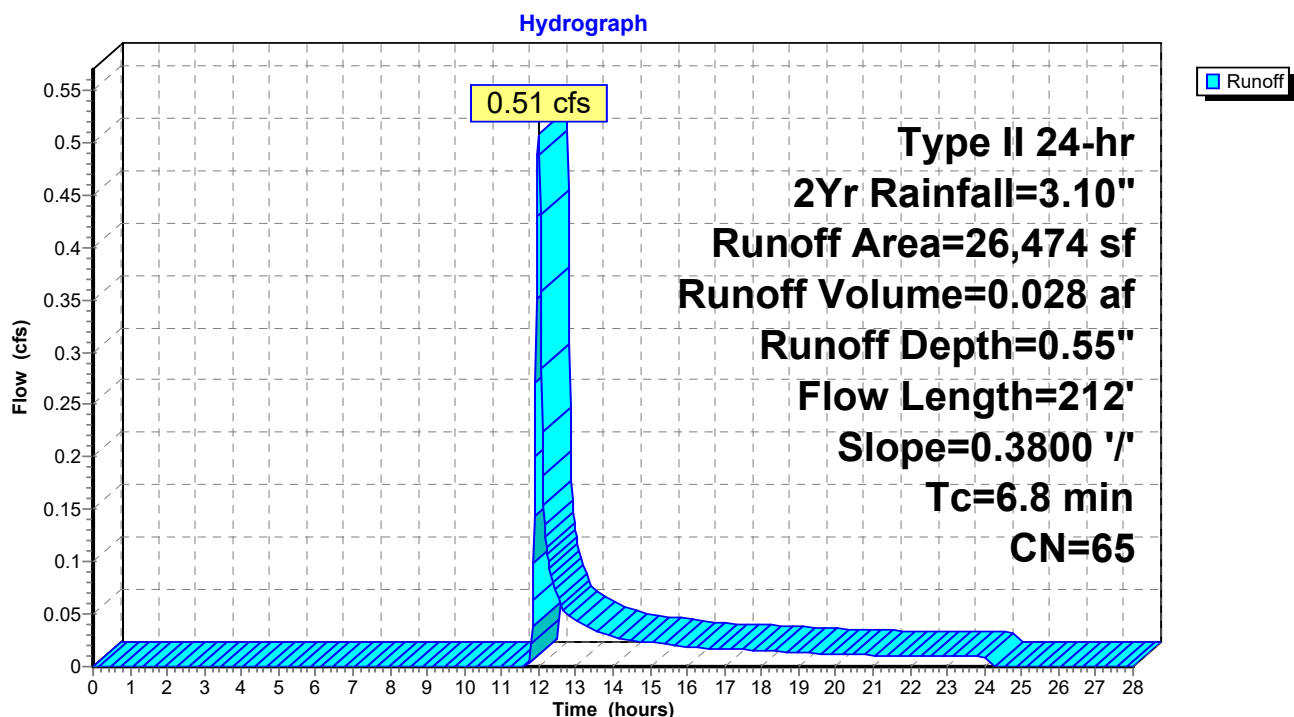
Summary for Subcatchment EX2: Middle Yard

Runoff = 0.51 cfs @ 12.00 hrs, Volume= 0.028 af, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2Yr Rainfall=3.10"

Area (sf)	CN	Description
23,258	61	>75% Grass cover, Good, HSG B
1,136	98	Roofs, HSG B
2,080	98	Paved parking, HSG B
26,474	65	Weighted Average
23,258		87.85% Pervious Area
3,216		12.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	212	0.3800	0.52		Sheet Flow, Grass: Short n= 0.150 P2= 2.10"

Subcatchment EX2: Middle Yard

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Type II 24-hr 2Yr Rainfall=3.10"

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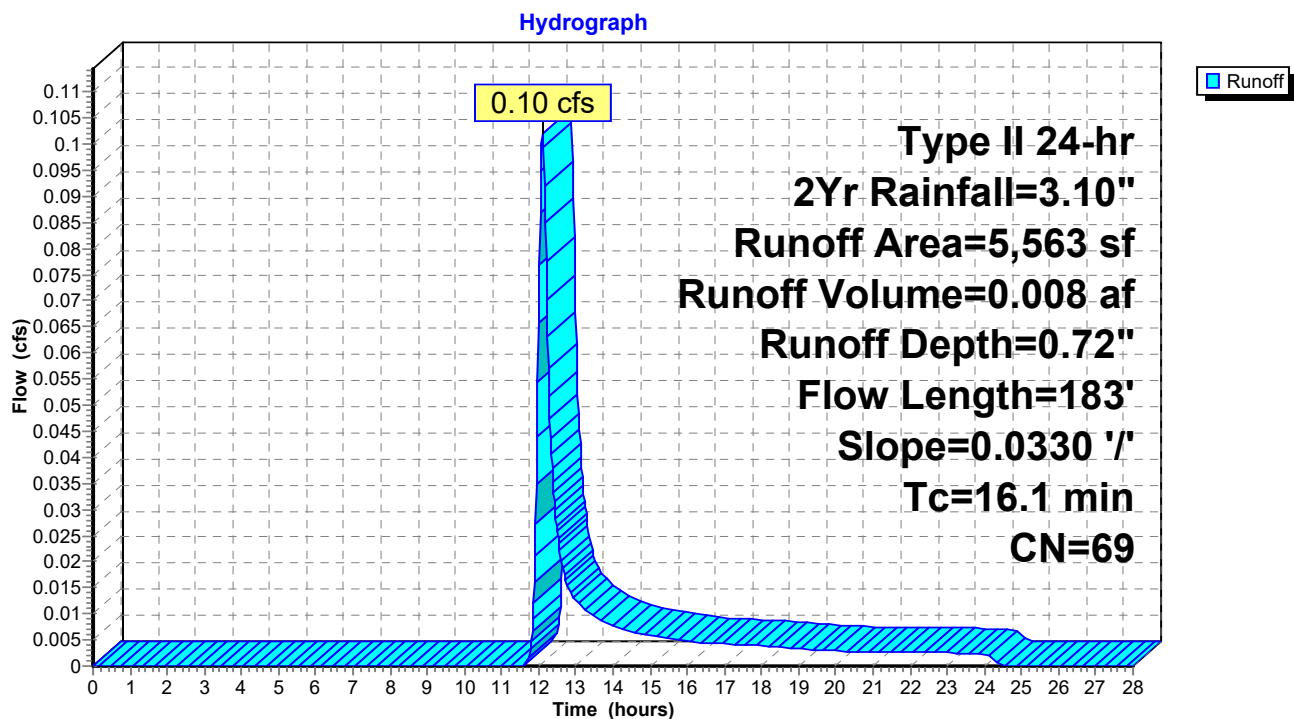
Summary for Subcatchment EX3: Front to ROW

Runoff = 0.10 cfs @ 12.10 hrs, Volume= 0.008 af, Depth= 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2Yr Rainfall=3.10"

Area (sf)	CN	Description
4,415	61	>75% Grass cover, Good, HSG B
1,148	98	Paved parking, HSG B
5,563	69	Weighted Average
4,415		79.36% Pervious Area
1,148		20.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	183	0.0330	0.19		Sheet Flow, Front
					Grass: Short n= 0.150 P2= 2.10"

Subcatchment EX3: Front to ROW

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Type II 24-hr 2Yr Rainfall=3.10"

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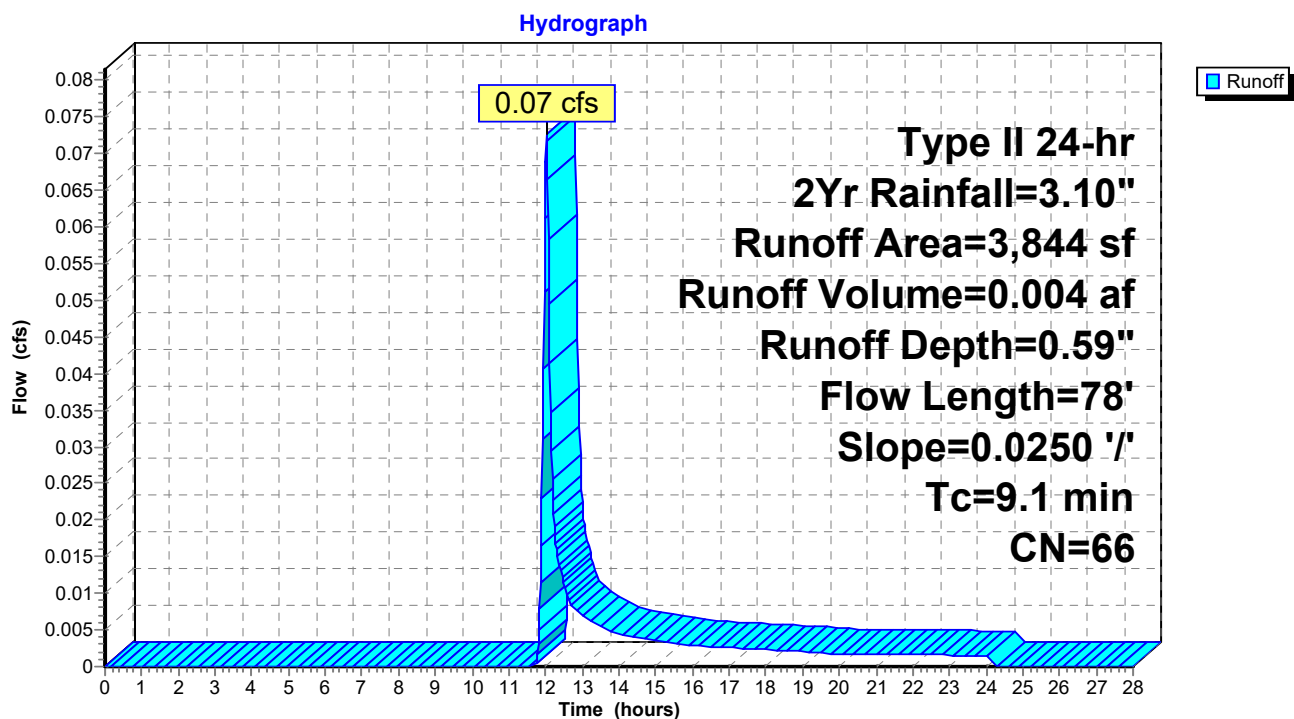
Summary for Subcatchment EX4: ROW runoff

Runoff = 0.07 cfs @ 12.03 hrs, Volume= 0.004 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2Yr Rainfall=3.10"

Area (sf)	CN	Description
2,443	61	>75% Grass cover, Good, HSG B
498	98	Paved parking, HSG B
903	61	>75% Grass cover, Good, HSG B
3,844	66	Weighted Average
3,346		87.04% Pervious Area
498		12.96% Impervious Area

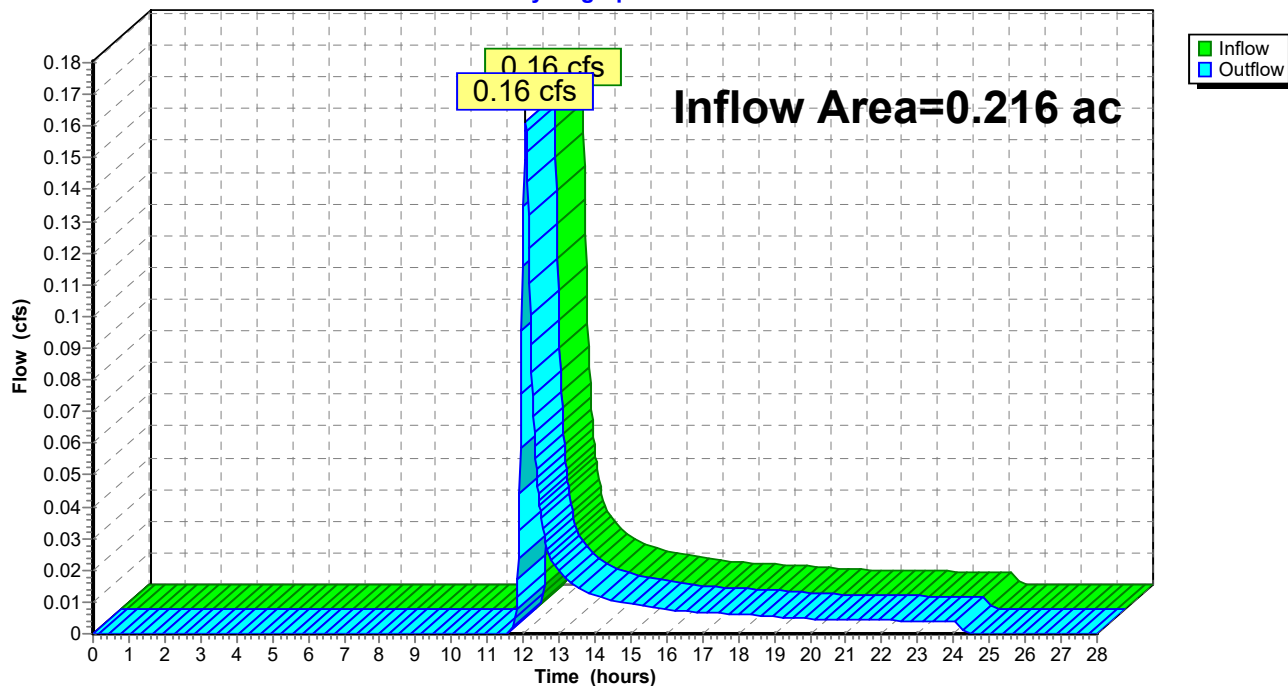
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	78	0.0250	0.14		Sheet Flow, Front
Grass: Short n= 0.150 P2= 2.10"					

Subcatchment EX4: ROW runoff

Summary for Reach 4R: To Street

Inflow Area = 0.216 ac, 17.50% Impervious, Inflow Depth = 0.67" for 2Yr event
Inflow = 0.16 cfs @ 12.06 hrs, Volume= 0.012 af
Outflow = 0.16 cfs @ 12.06 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

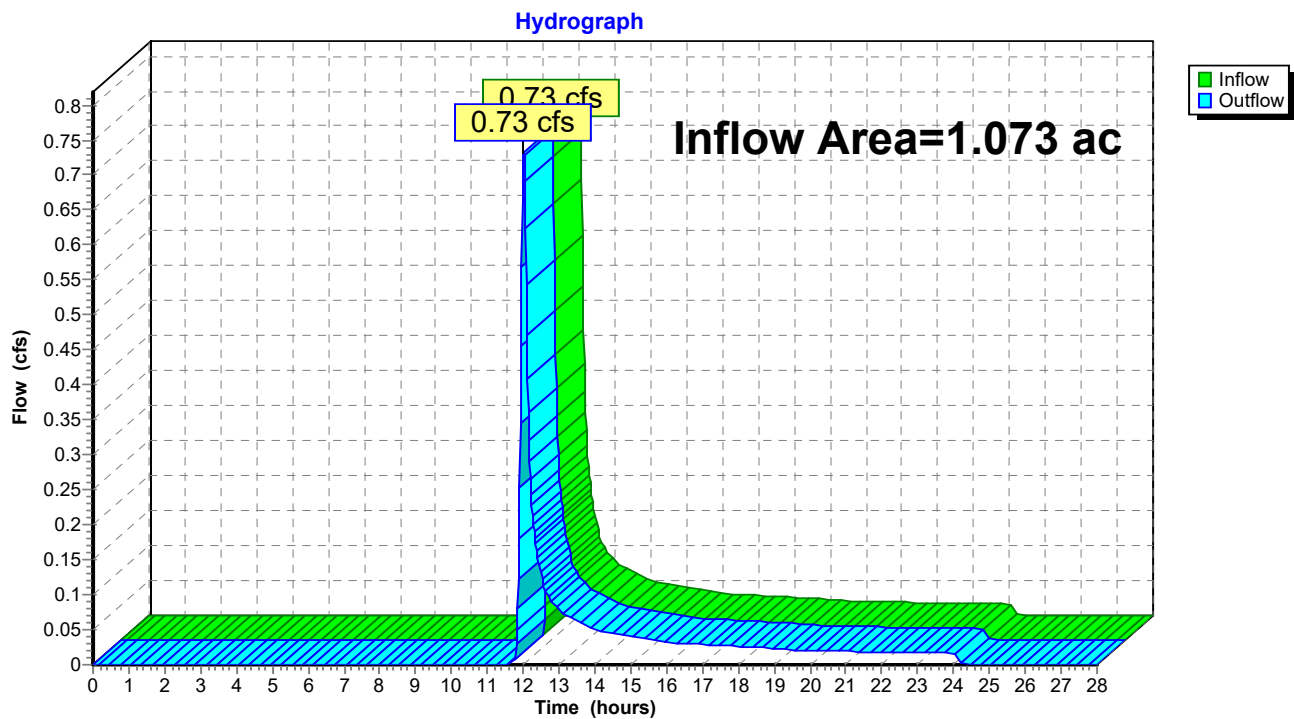
Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 4R: To Street**Hydrograph**

Summary for Reach 5R: Total Offsite

Inflow Area = 1.073 ac, 10.40% Impervious, Inflow Depth = 0.54" for 2Yr event
Inflow = 0.73 cfs @ 12.01 hrs, Volume= 0.048 af
Outflow = 0.73 cfs @ 12.01 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 5R: Total Offsite

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Type II 24-hr 10Yr Rainfall=4.50"

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Time span=0.00-28.00 hrs, dt=0.02 hrs, 1401 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX1: Rear OffsiteRunoff Area=10,854 sf 0.00% Impervious Runoff Depth=1.08"
Flow Length=146' Slope=0.0540 '/' Tc=11.0 min CN=61 Runoff=0.37 cfs 0.022 af**Subcatchment EX2: Middle Yard**Runoff Area=26,474 sf 12.15% Impervious Runoff Depth=1.33"
Flow Length=212' Slope=0.3800 '/' Tc=6.8 min CN=65 Runoff=1.37 cfs 0.067 af**Subcatchment EX3: Front to ROW**Runoff Area=5,563 sf 20.64% Impervious Runoff Depth=1.60"
Flow Length=183' Slope=0.0330 '/' Tc=16.1 min CN=69 Runoff=0.25 cfs 0.017 af**Subcatchment EX4: ROW runoff**Runoff Area=3,844 sf 12.96% Impervious Runoff Depth=1.40"
Flow Length=78' Slope=0.0250 '/' Tc=9.1 min CN=66 Runoff=0.19 cfs 0.010 af**Reach 4R: To Street**Inflow=0.41 cfs 0.027 af
Outflow=0.41 cfs 0.027 af**Reach 5R: Total Offsite**Inflow=2.06 cfs 0.117 af
Outflow=2.06 cfs 0.117 af**Total Runoff Area = 1.073 ac Runoff Volume = 0.117 af Average Runoff Depth = 1.31"**
89.60% Pervious = 0.961 ac 10.40% Impervious = 0.112 ac

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Type II 24-hr 10Yr Rainfall=4.50"

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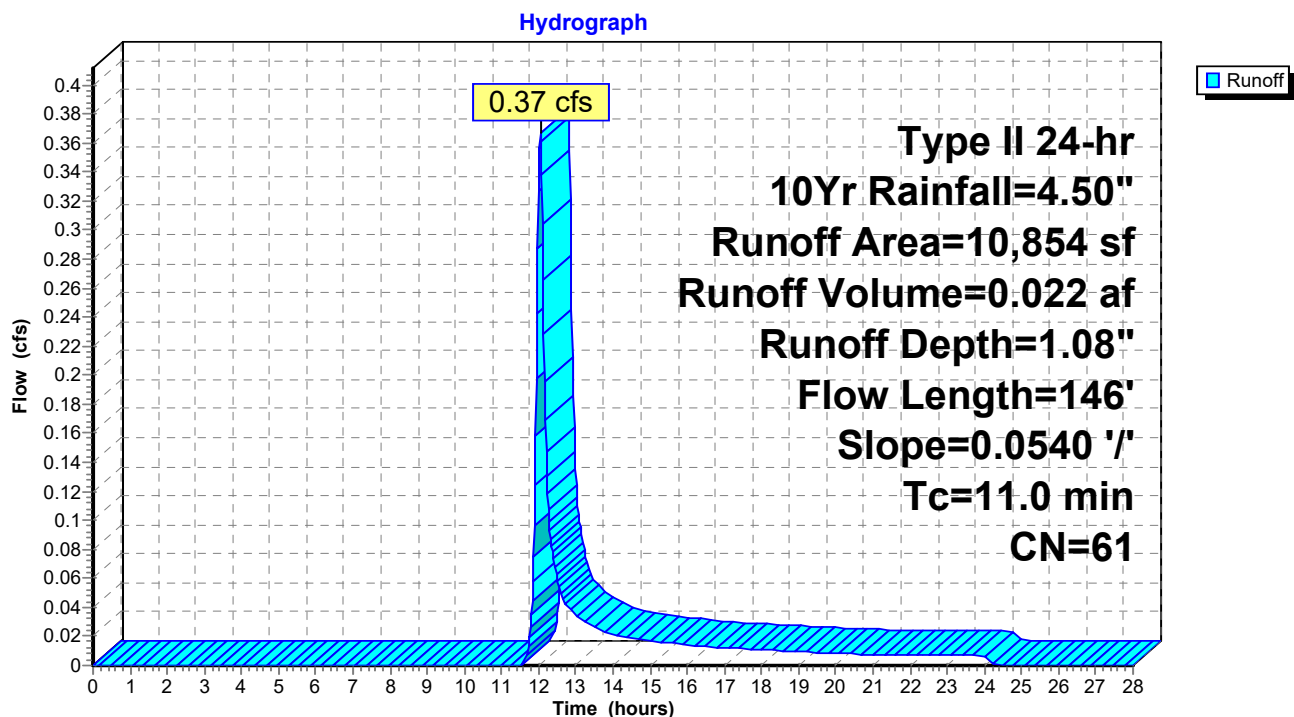
Summary for Subcatchment EX1: Rear Offsite

Runoff = 0.37 cfs @ 12.04 hrs, Volume= 0.022 af, Depth= 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10Yr Rainfall=4.50"

Area (sf)	CN	Description
10,854	61	>75% Grass cover, Good, HSG B
10,854		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	146	0.0540	0.22		Sheet Flow, Rear Yard
					Grass: Short n= 0.150 P2= 2.10"

Subcatchment EX1: Rear Offsite

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Type II 24-hr 10Yr Rainfall=4.50"

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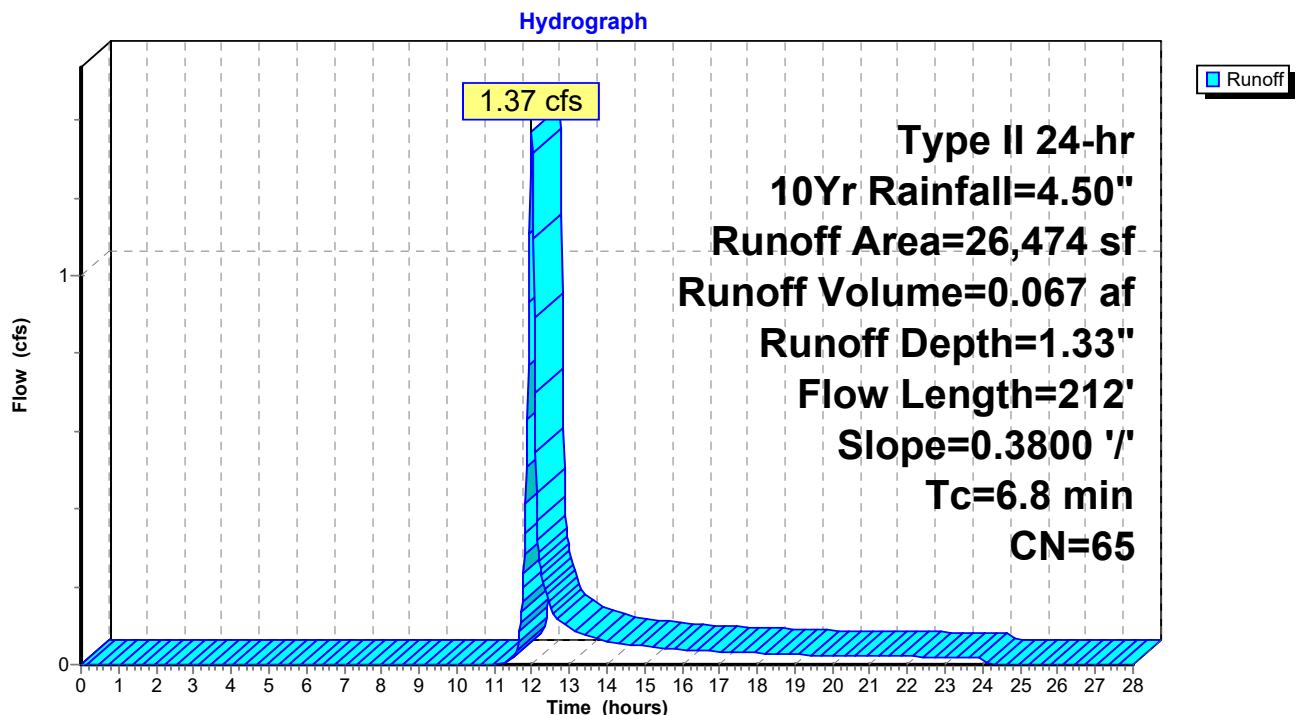
Summary for Subcatchment EX2: Middle Yard

Runoff = 1.37 cfs @ 11.99 hrs, Volume= 0.067 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10Yr Rainfall=4.50"

Area (sf)	CN	Description
23,258	61	>75% Grass cover, Good, HSG B
1,136	98	Roofs, HSG B
2,080	98	Paved parking, HSG B
26,474	65	Weighted Average
23,258		87.85% Pervious Area
3,216		12.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	212	0.3800	0.52		Sheet Flow, Grass: Short n= 0.150 P2= 2.10"

Subcatchment EX2: Middle Yard

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Type II 24-hr 10Yr Rainfall=4.50"

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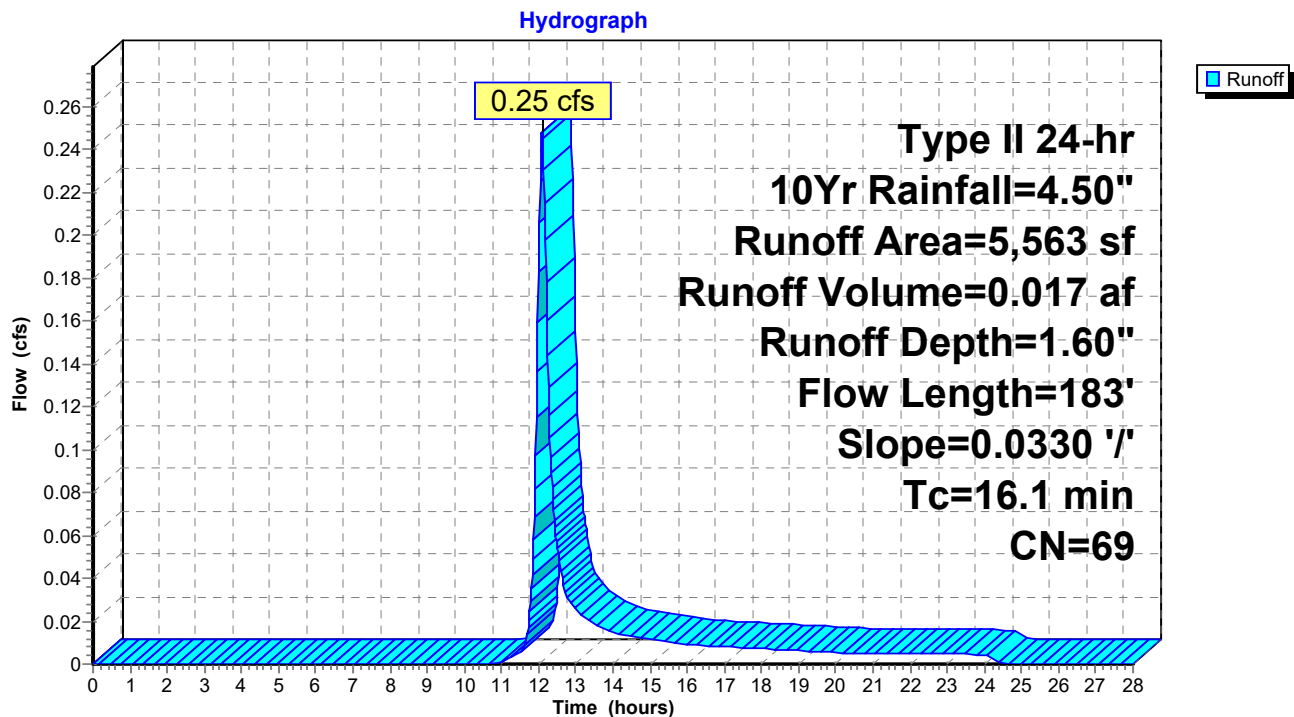
Summary for Subcatchment EX3: Front to ROW

Runoff = 0.25 cfs @ 12.09 hrs, Volume= 0.017 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10Yr Rainfall=4.50"

Area (sf)	CN	Description
4,415	61	>75% Grass cover, Good, HSG B
1,148	98	Paved parking, HSG B
5,563	69	Weighted Average
4,415		79.36% Pervious Area
1,148		20.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	183	0.0330	0.19		Sheet Flow, Front Grass: Short n= 0.150 P2= 2.10"

Subcatchment EX3: Front to ROW

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Type II 24-hr 10Yr Rainfall=4.50"

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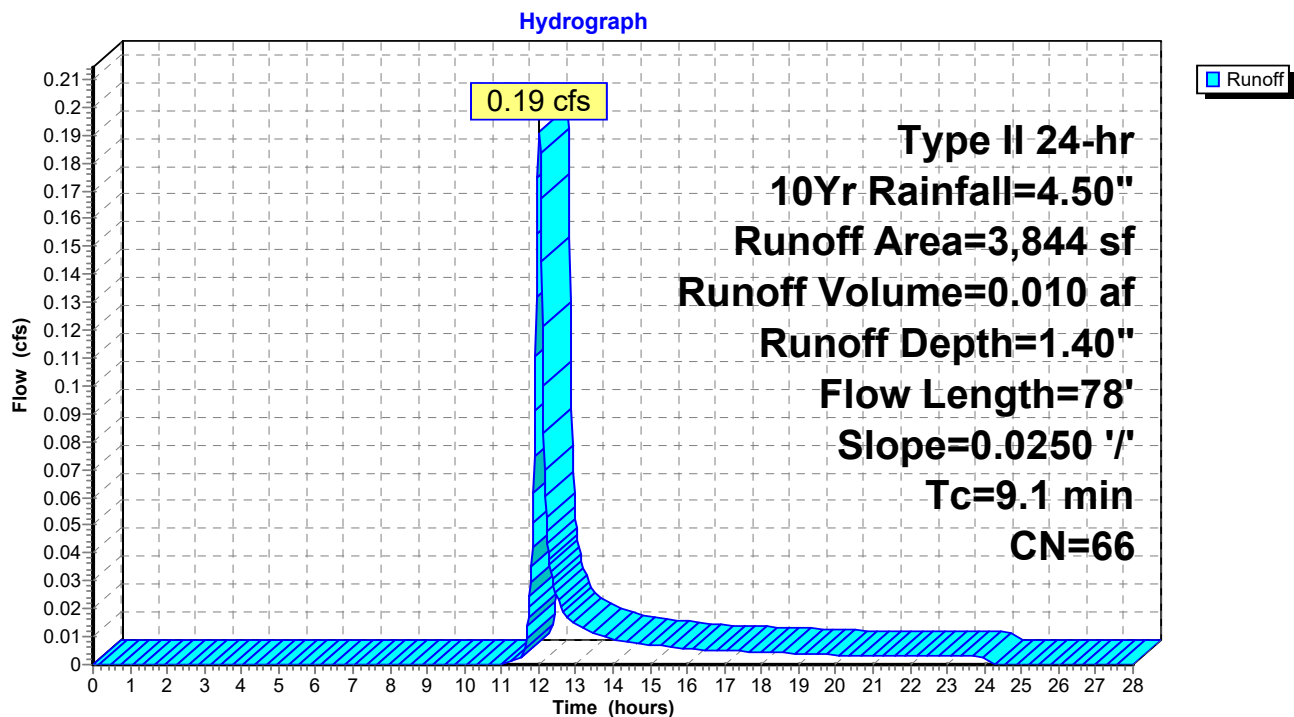
Summary for Subcatchment EX4: ROW runoff

Runoff = 0.19 cfs @ 12.02 hrs, Volume= 0.010 af, Depth= 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10Yr Rainfall=4.50"

Area (sf)	CN	Description
2,443	61	>75% Grass cover, Good, HSG B
498	98	Paved parking, HSG B
903	61	>75% Grass cover, Good, HSG B
3,844	66	Weighted Average
3,346		87.04% Pervious Area
498		12.96% Impervious Area

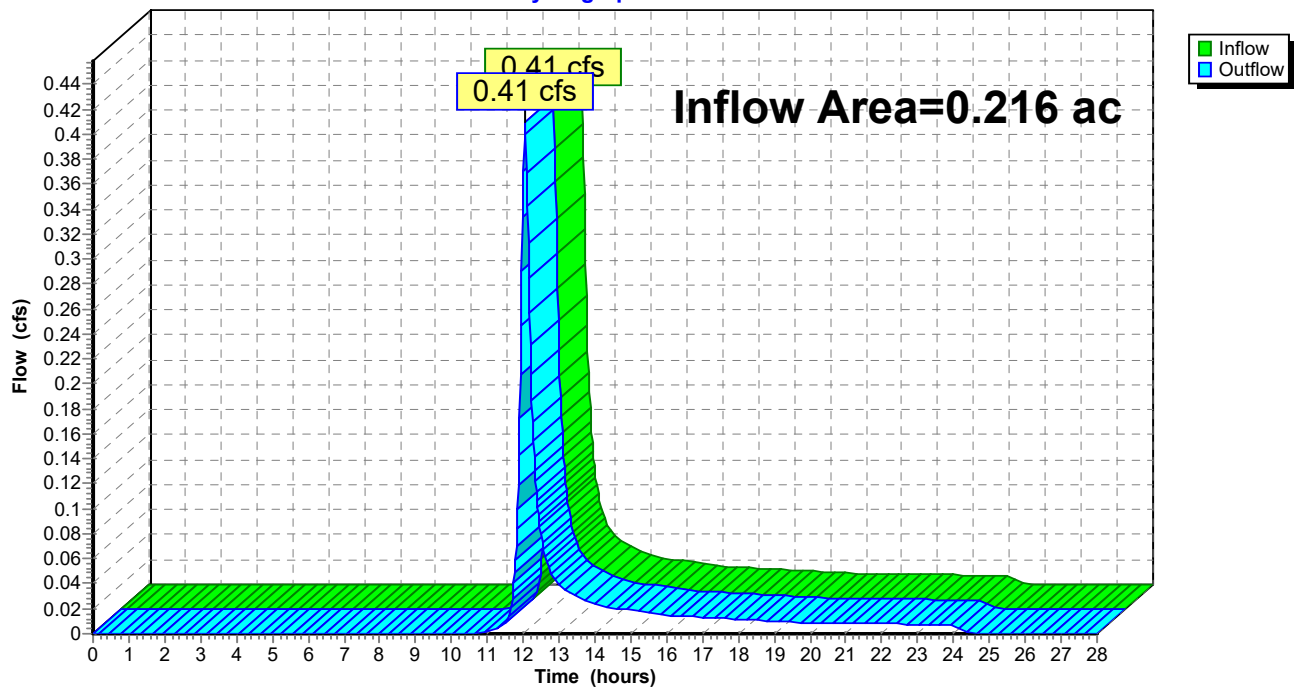
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	78	0.0250	0.14		Sheet Flow, Front
Grass: Short n= 0.150 P2= 2.10"					

Subcatchment EX4: ROW runoff

Summary for Reach 4R: To Street

Inflow Area = 0.216 ac, 17.50% Impervious, Inflow Depth = 1.52" for 10Yr event
Inflow = 0.41 cfs @ 12.05 hrs, Volume= 0.027 af
Outflow = 0.41 cfs @ 12.05 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

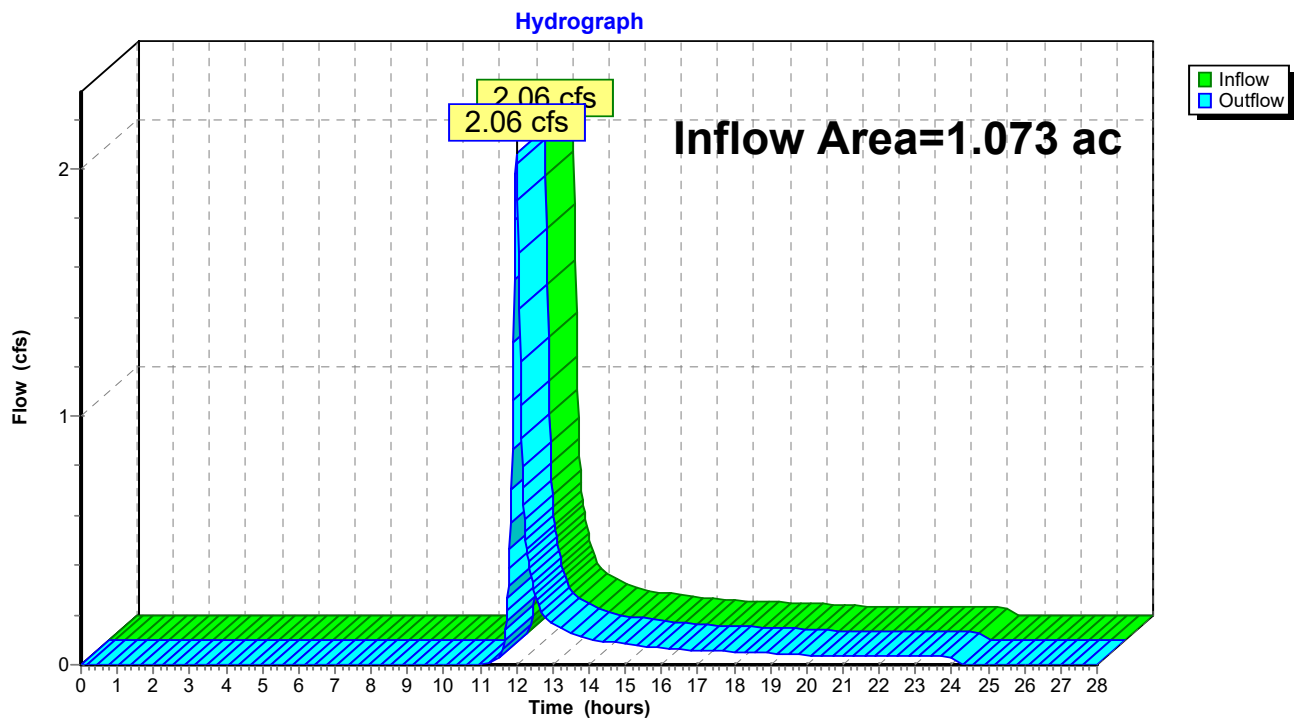
Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 4R: To Street**Hydrograph**

Summary for Reach 5R: Total Offsite

Inflow Area = 1.073 ac, 10.40% Impervious, Inflow Depth = 1.31" for 10Yr event
Inflow = 2.06 cfs @ 12.00 hrs, Volume= 0.117 af
Outflow = 2.06 cfs @ 12.00 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 5R: Total Offsite

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Type II 24-hr 100 Yr Rainfall=6.50"

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Time span=0.00-28.00 hrs, dt=0.02 hrs, 1401 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX1: Rear OffsiteRunoff Area=10,854 sf 0.00% Impervious Runoff Depth=2.35"
Flow Length=146' Slope=0.0540 '/' Tc=11.0 min CN=61 Runoff=0.86 cfs 0.049 af**Subcatchment EX2: Middle Yard**Runoff Area=26,474 sf 12.15% Impervious Runoff Depth=2.72"
Flow Length=212' Slope=0.3800 '/' Tc=6.8 min CN=65 Runoff=2.87 cfs 0.138 af**Subcatchment EX3: Front to ROW**Runoff Area=5,563 sf 20.64% Impervious Runoff Depth=3.11"
Flow Length=183' Slope=0.0330 '/' Tc=16.1 min CN=69 Runoff=0.50 cfs 0.033 af**Subcatchment EX4: ROW runoff**Runoff Area=3,844 sf 12.96% Impervious Runoff Depth=2.82"
Flow Length=78' Slope=0.0250 '/' Tc=9.1 min CN=66 Runoff=0.40 cfs 0.021 af**Reach 4R: To Street**Inflow=0.83 cfs 0.054 af
Outflow=0.83 cfs 0.054 af**Reach 5R: Total Offsite**Inflow=4.40 cfs 0.240 af
Outflow=4.40 cfs 0.240 af**Total Runoff Area = 1.073 ac Runoff Volume = 0.240 af Average Runoff Depth = 2.69"**
89.60% Pervious = 0.961 ac 10.40% Impervious = 0.112 ac

Byfield 23 Central Pre

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Type II 24-hr 100 Yr Rainfall=6.50"

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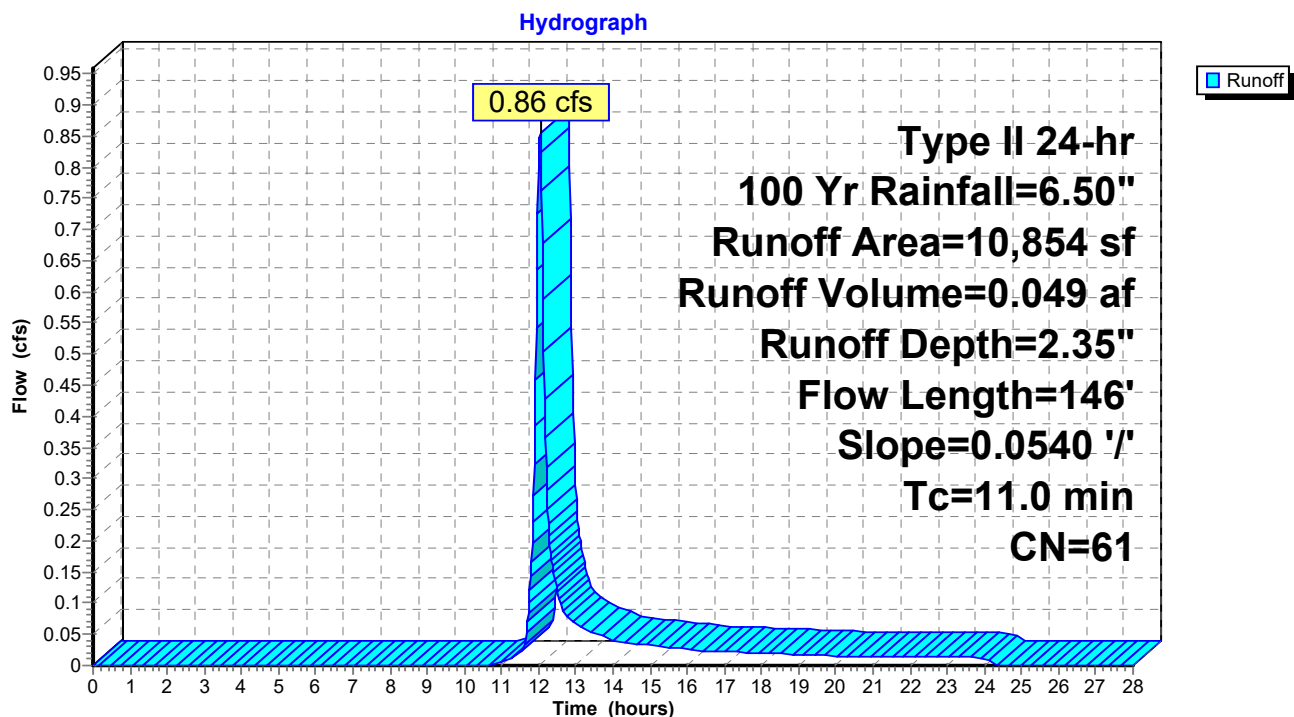
Summary for Subcatchment EX1: Rear Offsite

Runoff = 0.86 cfs @ 12.03 hrs, Volume= 0.049 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
10,854	61	>75% Grass cover, Good, HSG B
10,854		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	146	0.0540	0.22		Sheet Flow, Rear Yard
Grass: Short n= 0.150 P2= 2.10"					

Subcatchment EX1: Rear Offsite

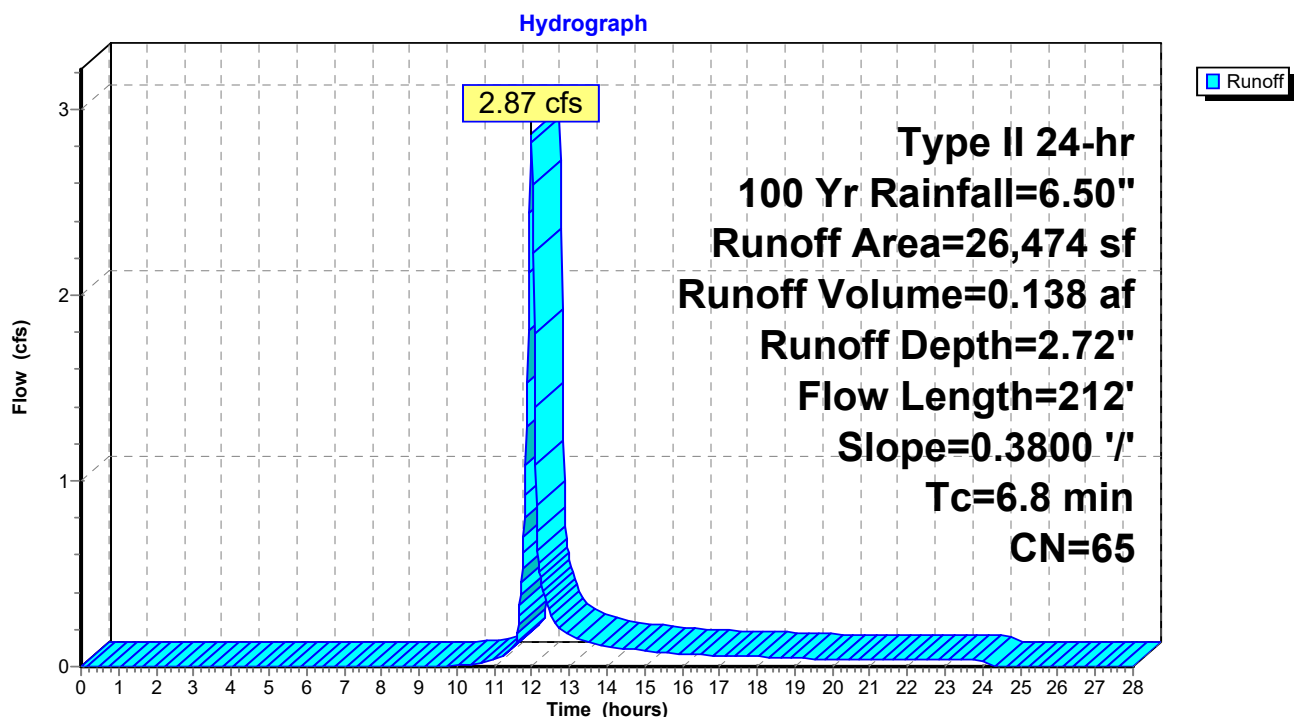
Summary for Subcatchment EX2: Middle Yard

Runoff = 2.87 cfs @ 11.99 hrs, Volume= 0.138 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
23,258	61	>75% Grass cover, Good, HSG B
1,136	98	Roofs, HSG B
2,080	98	Paved parking, HSG B
26,474	65	Weighted Average
23,258		87.85% Pervious Area
3,216		12.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	212	0.3800	0.52		Sheet Flow, Grass: Short n= 0.150 P2= 2.10"

Subcatchment EX2: Middle Yard

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Type II 24-hr 100 Yr Rainfall=6.50"

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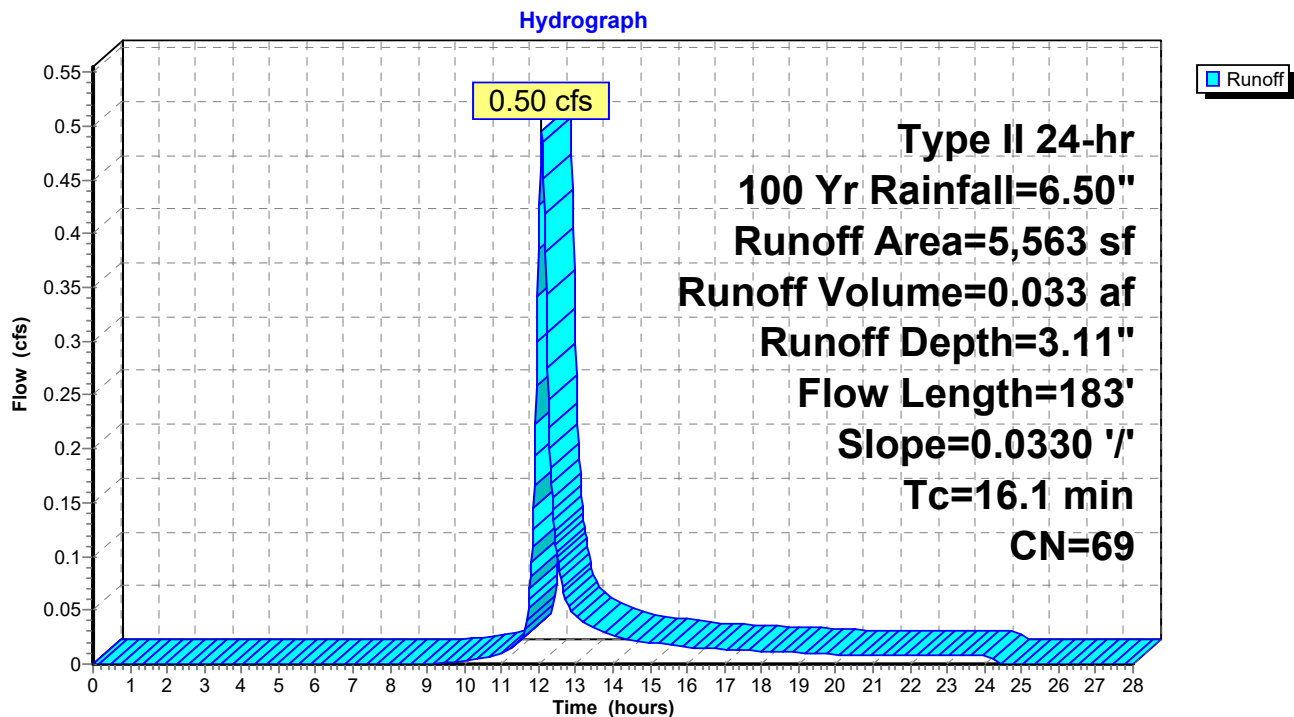
Summary for Subcatchment EX3: Front to ROW

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.033 af, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
4,415	61	>75% Grass cover, Good, HSG B
1,148	98	Paved parking, HSG B
5,563	69	Weighted Average
4,415		79.36% Pervious Area
1,148		20.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	183	0.0330	0.19		Sheet Flow, Front
Grass: Short n= 0.150 P2= 2.10"					

Subcatchment EX3: Front to ROW

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Type II 24-hr 100 Yr Rainfall=6.50"

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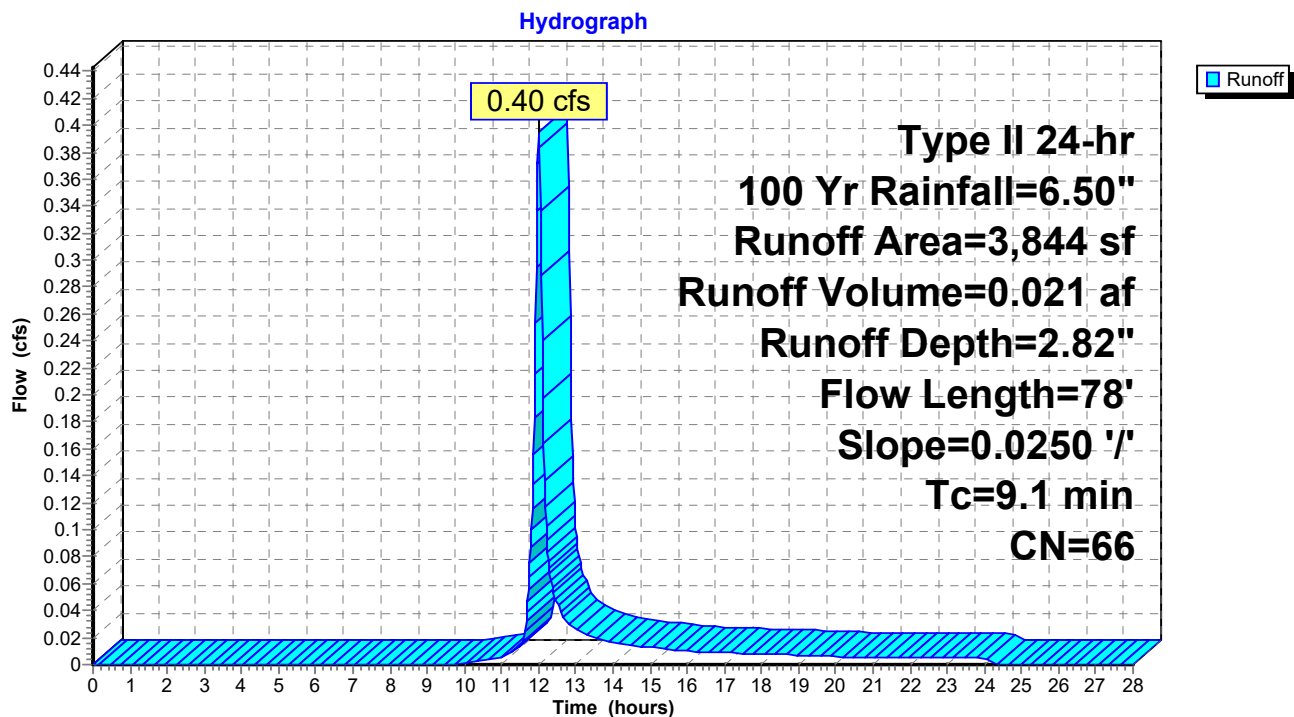
Summary for Subcatchment EX4: ROW runoff

Runoff = 0.40 cfs @ 12.01 hrs, Volume= 0.021 af, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
2,443	61	>75% Grass cover, Good, HSG B
498	98	Paved parking, HSG B
903	61	>75% Grass cover, Good, HSG B
3,844	66	Weighted Average
3,346		87.04% Pervious Area
498		12.96% Impervious Area

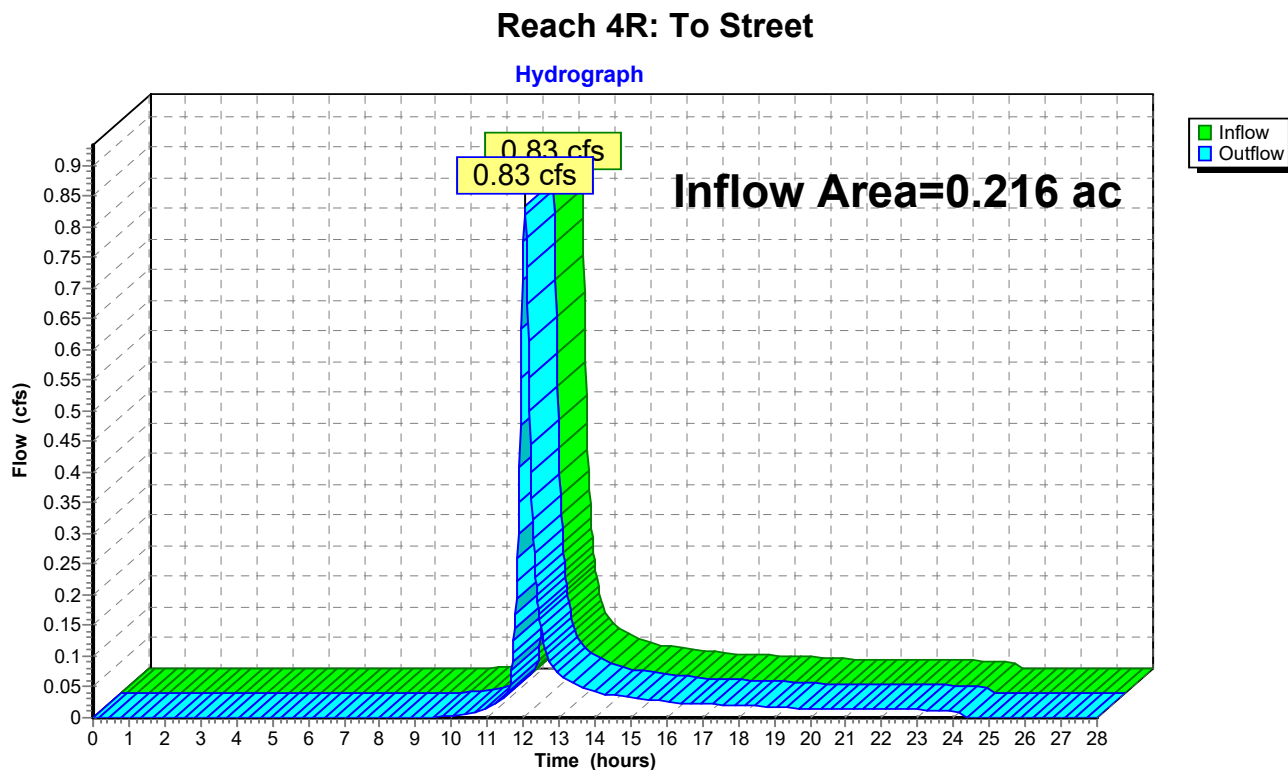
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	78	0.0250	0.14		Sheet Flow, Front
Grass: Short n= 0.150 P2= 2.10"					

Subcatchment EX4: ROW runoff

Summary for Reach 4R: To Street

Inflow Area = 0.216 ac, 17.50% Impervious, Inflow Depth = 2.99" for 100 Yr event
Inflow = 0.83 cfs @ 12.04 hrs, Volume= 0.054 af
Outflow = 0.83 cfs @ 12.04 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

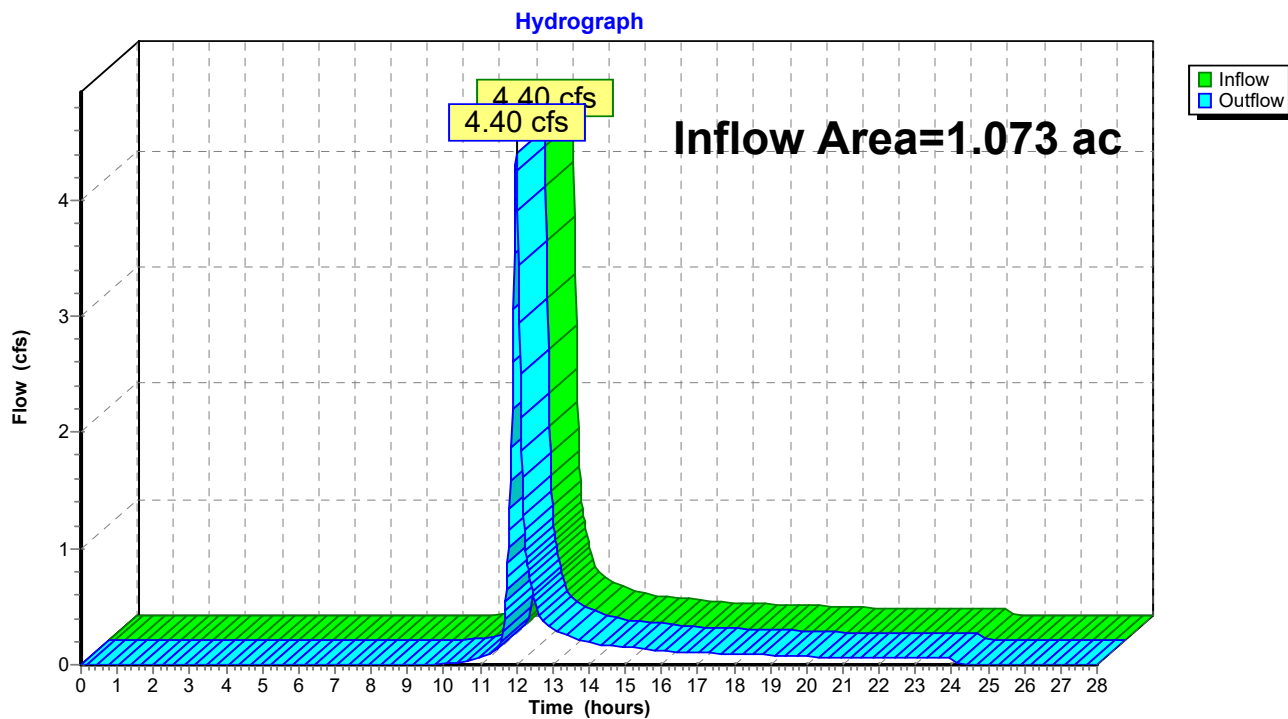
Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

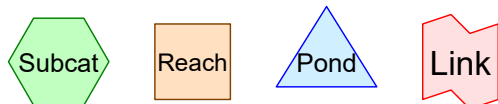
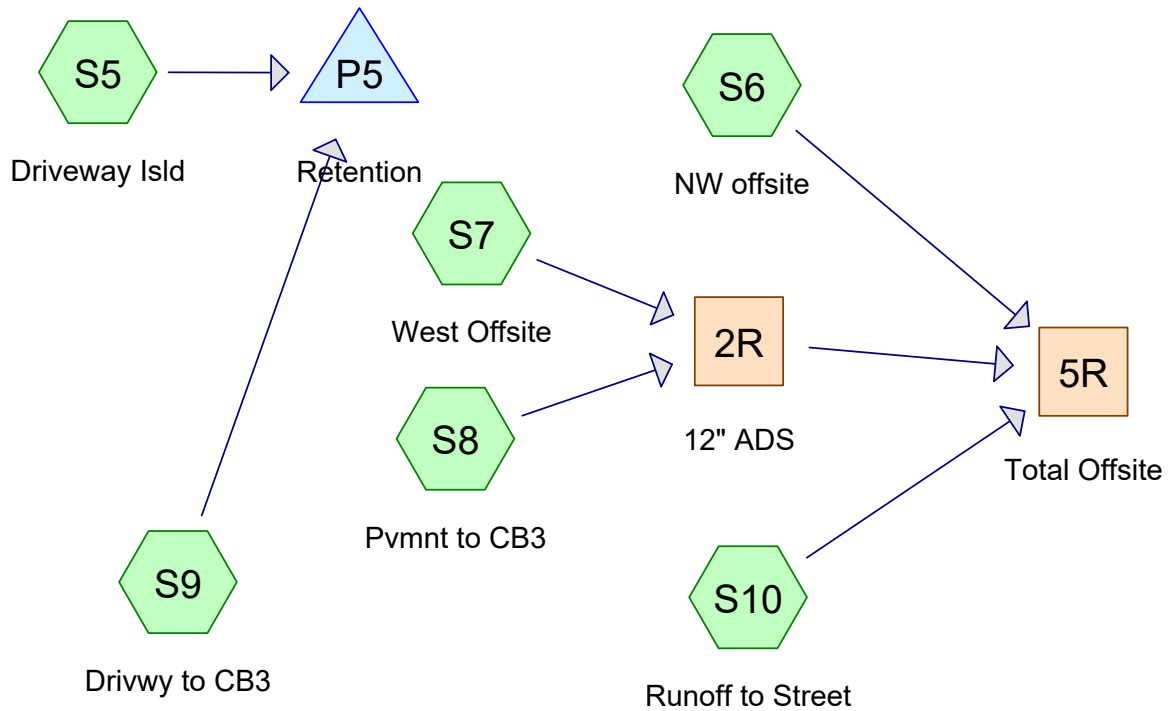
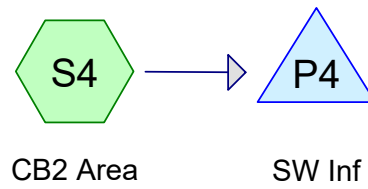
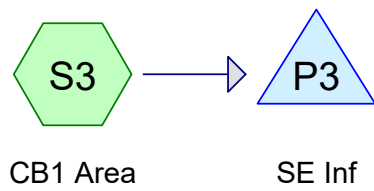
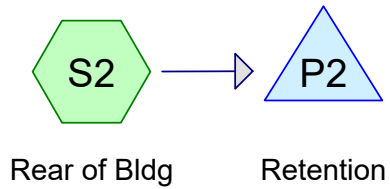
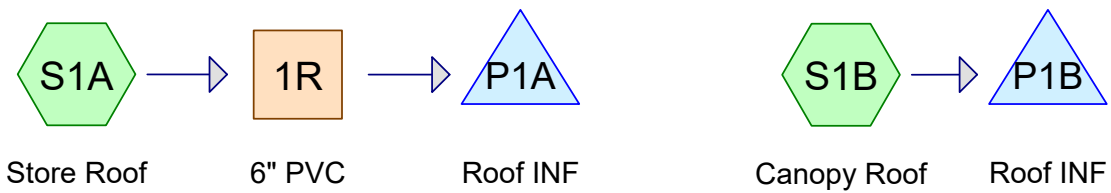


Summary for Reach 5R: Total Offsite

Inflow Area = 1.073 ac, 10.40% Impervious, Inflow Depth = 2.69" for 100 Yr event
Inflow = 4.40 cfs @ 12.00 hrs, Volume= 0.240 af
Outflow = 4.40 cfs @ 12.00 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 5R: Total Offsite



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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.094	79	<50% Grass cover, Poor, HSG B (S10, S2, S3, S4, S6, S7, S9)
0.701	98	Paved parking, HSG B (S10, S2, S3, S4, S8, S9)
0.193	98	Roofs, HSG B (S1A, S1B)
0.054	98	Water Surface, 0% imp, HSG B (S2)
0.030	98	Water Surface, HSG B (S5, S9)
1.073	96	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.073	HSG B	S10, S1A, S1B, S2, S3, S4, S5, S6, S7, S8, S9
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.073		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.094	0.000	0.000	0.000	0.094	<50% Grass cover, Poor	S10, S2, S3, S4, S6, S7, S9
0.000	0.701	0.000	0.000	0.000	0.701	Paved parking	S10, S2, S3, S4, S8, S9
0.000	0.193	0.000	0.000	0.000	0.193	Roofs	S1A, S1B
0.000	0.030	0.000	0.000	0.000	0.030	Water Surface	S5, S9
0.000	0.054	0.000	0.000	0.000	0.054	Water Surface, 0% imp	S2
0.000	1.073	0.000	0.000	0.000	1.073	TOTAL AREA	

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Time span=0.00-28.00 hrs, dt=0.02 hrs, 1401 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Runoff to Street	Runoff Area=794 sf 89.04% Impervious Runoff Depth=2.65" Tc=6.0 min CN=96 Runoff=0.08 cfs 0.004 af
SubcatchmentS1A: Store Roof	Runoff Area=4,845 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.49 cfs 0.027 af
SubcatchmentS1B: Canopy Roof	Runoff Area=3,568 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.36 cfs 0.020 af
SubcatchmentS2: Rear of Bldg	Runoff Area=11,460 sf 77.23% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=1.15 cfs 0.063 af
SubcatchmentS3: CB1 Area	Runoff Area=10,158 sf 89.96% Impervious Runoff Depth=2.65" Tc=6.0 min CN=96 Runoff=0.99 cfs 0.052 af
SubcatchmentS4: CB2 Area	Runoff Area=9,914 sf 98.71% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.99 cfs 0.054 af
SubcatchmentS5: Driveway Islld	Runoff Area=440 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.04 cfs 0.002 af
SubcatchmentS6: NW offsite	Runoff Area=738 sf 0.00% Impervious Runoff Depth=1.26" Tc=6.0 min CN=79 Runoff=0.04 cfs 0.002 af
SubcatchmentS7: West Offsite	Runoff Area=931 sf 0.00% Impervious Runoff Depth=1.26" Tc=6.0 min CN=79 Runoff=0.05 cfs 0.002 af
SubcatchmentS8: Pvmnt to CB3	Runoff Area=1,457 sf 100.00% Impervious Runoff Depth=2.87" Tc=6.0 min CN=98 Runoff=0.15 cfs 0.008 af
SubcatchmentS9: Drivwy to CB3	Runoff Area=2,435 sf 60.94% Impervious Runoff Depth=2.16" Tc=6.0 min CN=91 Runoff=0.21 cfs 0.010 af
Reach 1R: 6" PVC	Avg. Flow Depth=0.24' Max Vel=5.17 fps Inflow=0.49 cfs 0.027 af 6.0" Round Pipe n=0.010 L=115.0' S=0.0200 '/' Capacity=1.03 cfs Outflow=0.48 cfs 0.027 af
Reach 2R: 12" ADS	Avg. Flow Depth=0.13' Max Vel=3.34 fps Inflow=0.19 cfs 0.010 af 12.0" Round Pipe n=0.013 L=75.0' S=0.0249 '/' Capacity=5.63 cfs Outflow=0.19 cfs 0.010 af
Reach 5R: Total Offsite	Inflow=0.31 cfs 0.016 af Outflow=0.31 cfs 0.016 af
Pond P1A: Roof INF	Peak Elev=58.40' Storage=567 cf Inflow=0.48 cfs 0.027 af Outflow=0.02 cfs 0.027 af
Pond P1B: Roof INF	Peak Elev=58.93' Storage=349 cf Inflow=0.36 cfs 0.020 af Outflow=0.02 cfs 0.020 af

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Type II 24-hr 2 Yr Rainfall=3.10"

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Pond P2: RetentionPeak Elev=58.95' Storage=1,386 cf Inflow=1.15 cfs 0.063 af
Outflow=0.04 cfs 0.059 af**Pond P3: SE Inf**Peak Elev=57.67' Storage=977 cf Inflow=0.99 cfs 0.052 af
Outflow=0.07 cfs 0.052 af**Pond P4: SW Inf**Peak Elev=57.01' Storage=962 cf Inflow=0.99 cfs 0.054 af
Outflow=0.07 cfs 0.054 af**Pond P5: Retention**Peak Elev=57.38' Storage=235 cf Inflow=0.25 cfs 0.012 af
Outflow=0.02 cfs 0.012 af**Total Runoff Area = 1.073 ac Runoff Volume = 0.243 af Average Runoff Depth = 2.72"**
13.83% Pervious = 0.148 ac 86.17% Impervious = 0.925 ac

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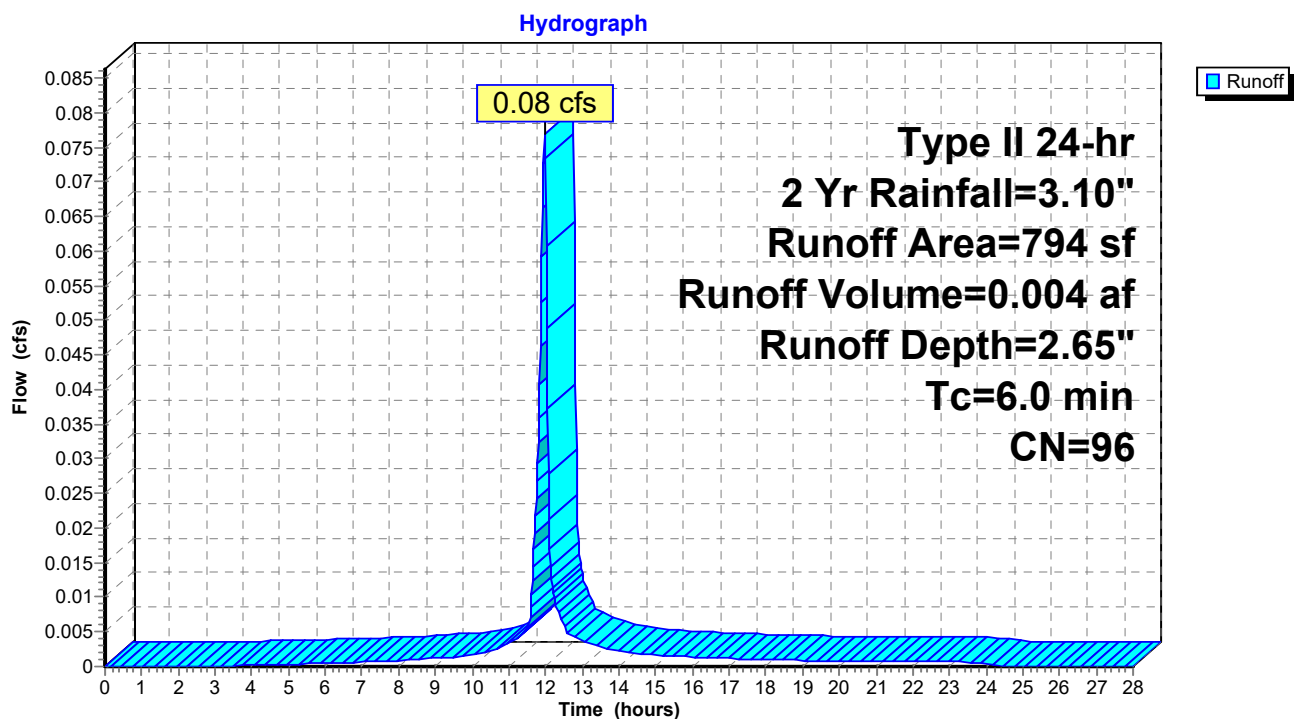
Summary for Subcatchment S10: Runoff to Street

Runoff = 0.08 cfs @ 11.97 hrs, Volume= 0.004 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
707	98	Paved parking, HSG B
87	79	<50% Grass cover, Poor, HSG B
794	96	Weighted Average
87		10.96% Pervious Area
707		89.04% Impervious Area

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

Subcatchment S10: Runoff to Street

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Type II 24-hr 2 Yr Rainfall=3.10"

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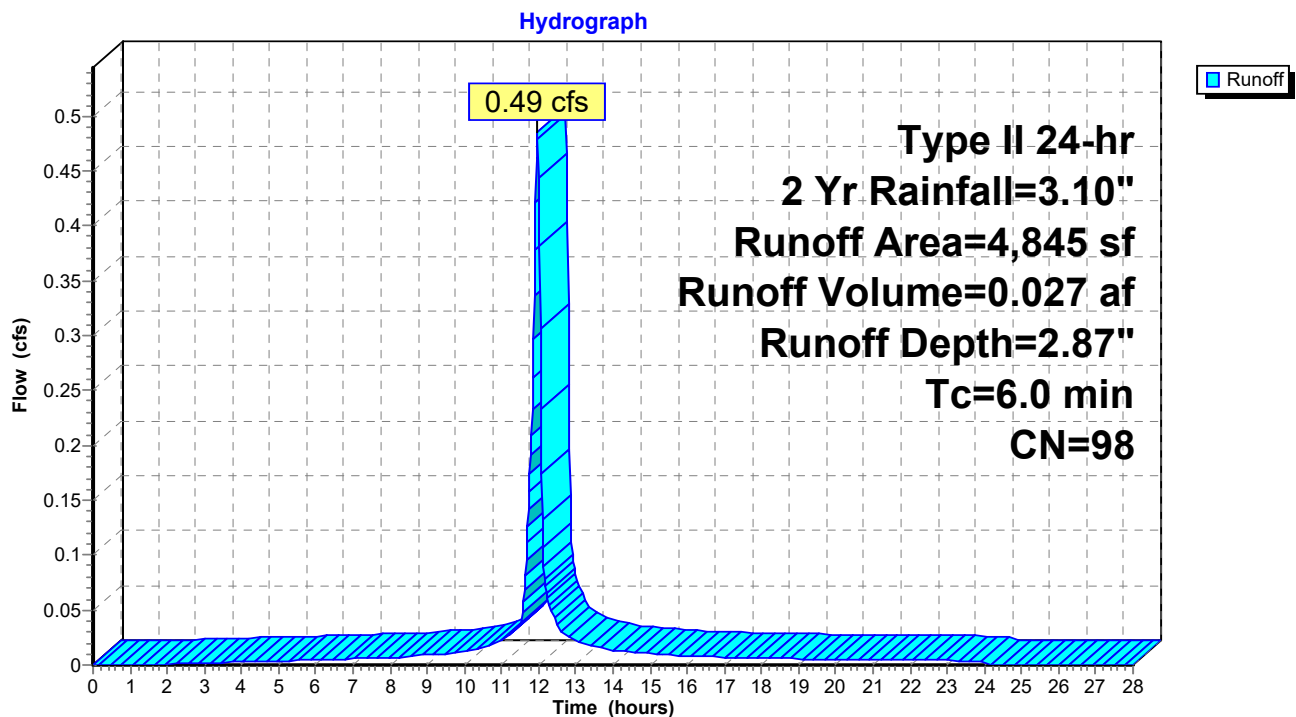
Summary for Subcatchment S1A: Store Roof

Runoff = 0.49 cfs @ 11.97 hrs, Volume= 0.027 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
4,845	98	Roofs, HSG B
4,845		100.00% Impervious Area

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

Subcatchment S1A: Store Roof

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Type II 24-hr 2 Yr Rainfall=3.10"

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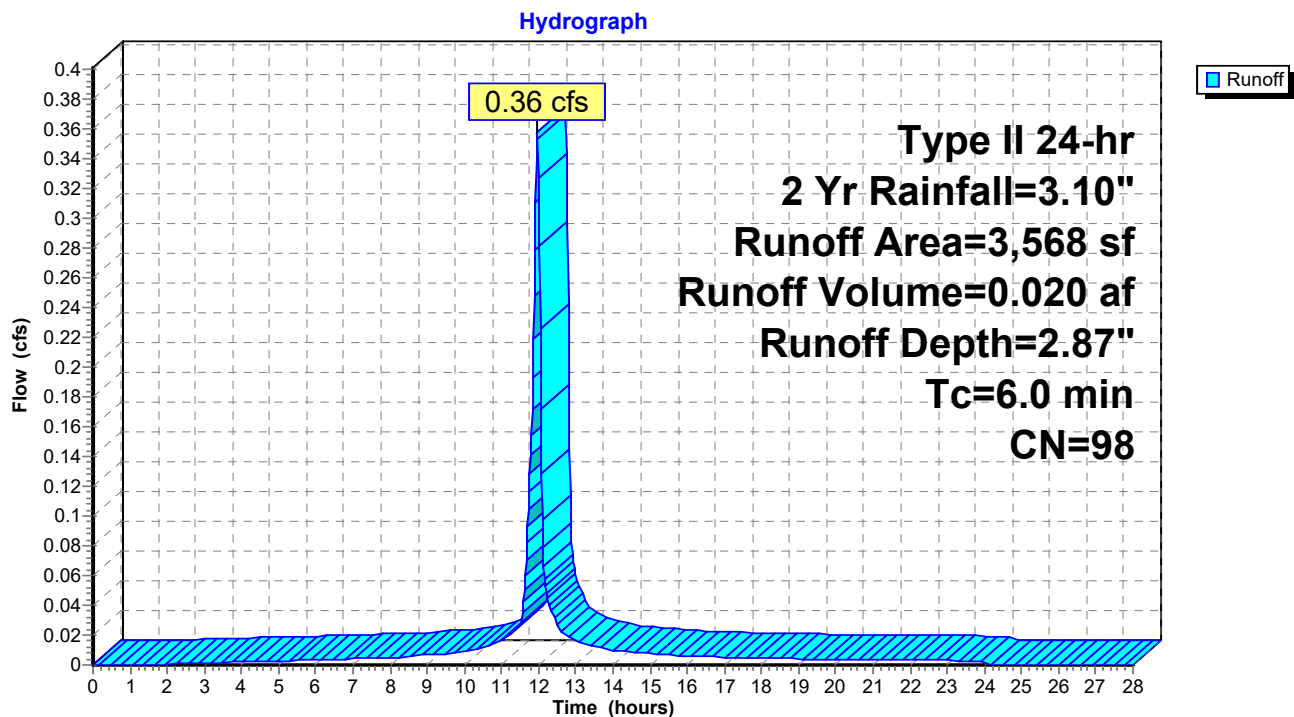
Summary for Subcatchment S1B: Canopy Roof

Runoff = 0.36 cfs @ 11.97 hrs, Volume= 0.020 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
3,568	98	Roofs, HSG B
3,568		100.00% Impervious Area

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

Subcatchment S1B: Canopy Roof

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Type II 24-hr 2 Yr Rainfall=3.10"

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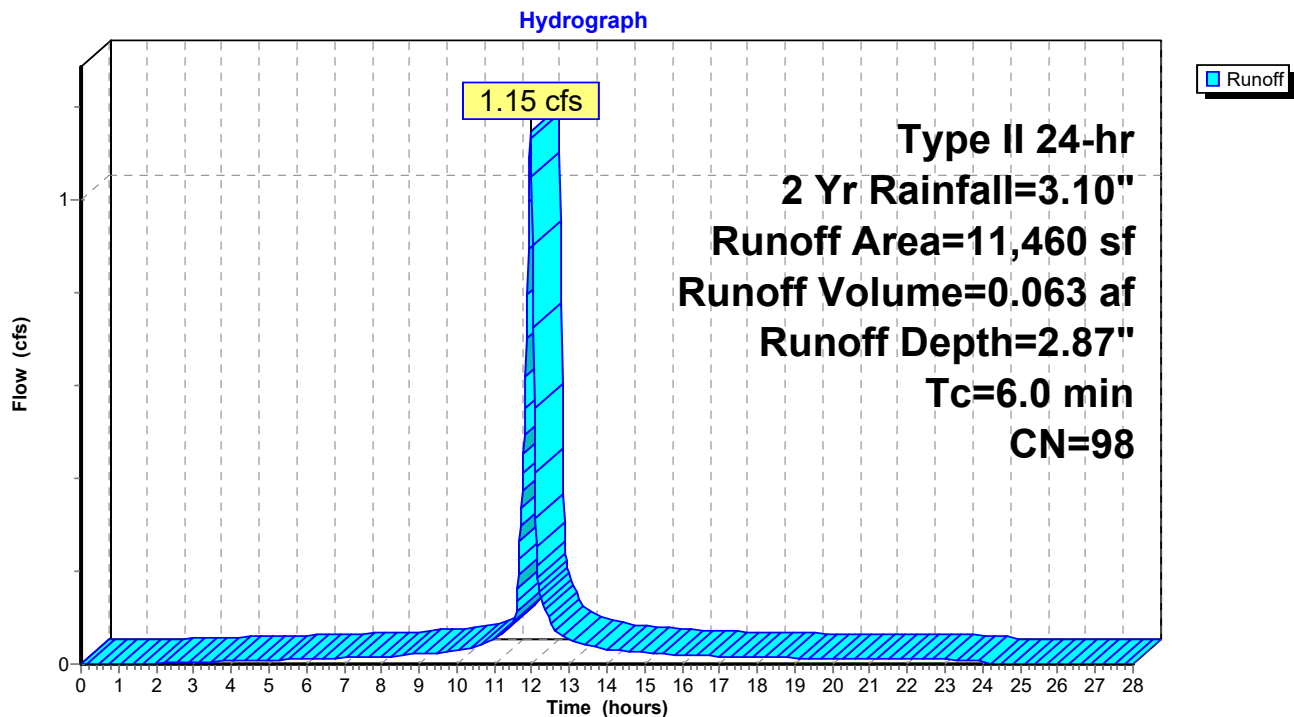
Summary for Subcatchment S2: Rear of Bldg

Runoff = 1.15 cfs @ 11.97 hrs, Volume= 0.063 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
2,370	98	Water Surface, 0% imp, HSG B
239	79	<50% Grass cover, Poor, HSG B
8,851	98	Paved parking, HSG B
11,460	98	Weighted Average
2,609		22.77% Pervious Area
8,851		77.23% Impervious Area

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

Subcatchment S2: Rear of Bldg

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Type II 24-hr 2 Yr Rainfall=3.10"

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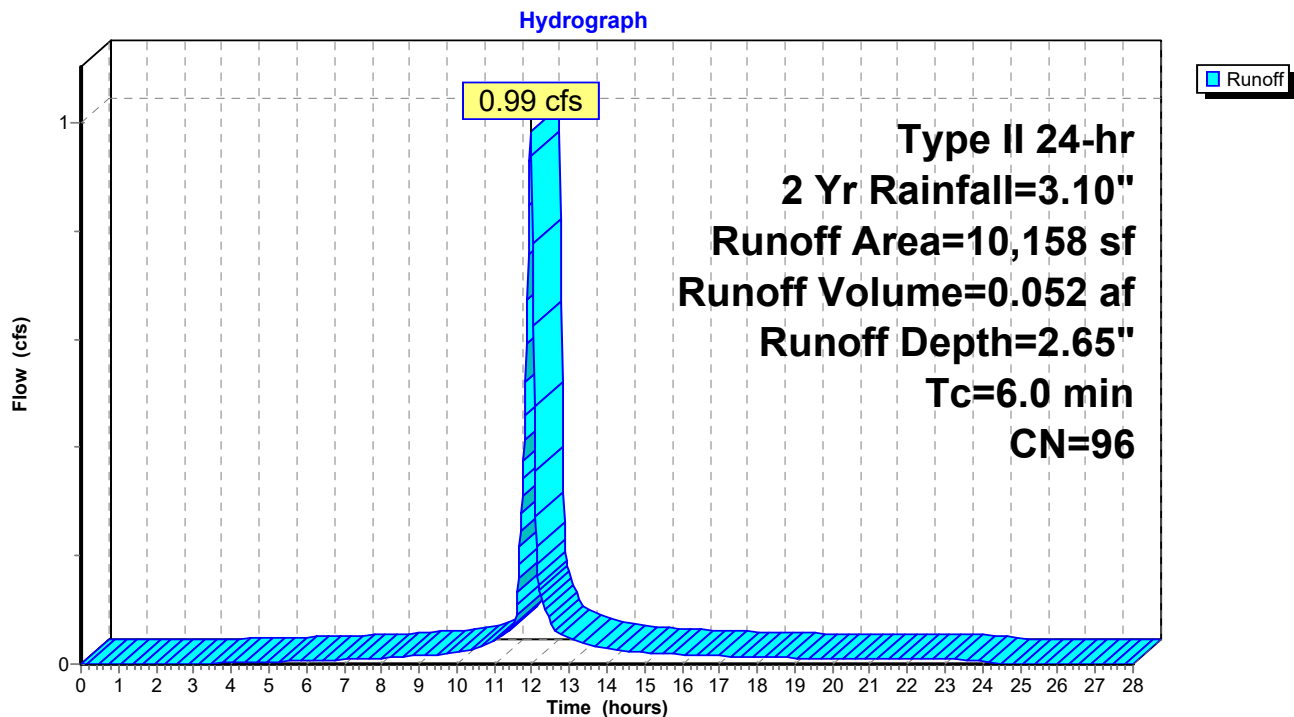
Summary for Subcatchment S3: CB1 Area

Runoff = 0.99 cfs @ 11.97 hrs, Volume= 0.052 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
1,020	79	<50% Grass cover, Poor, HSG B
9,091	98	Paved parking, HSG B
47	98	Paved parking, HSG B
10,158	96	Weighted Average
1,020		10.04% Pervious Area
9,138		89.96% Impervious Area

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

Subcatchment S3: CB1 Area

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Type II 24-hr 2 Yr Rainfall=3.10"

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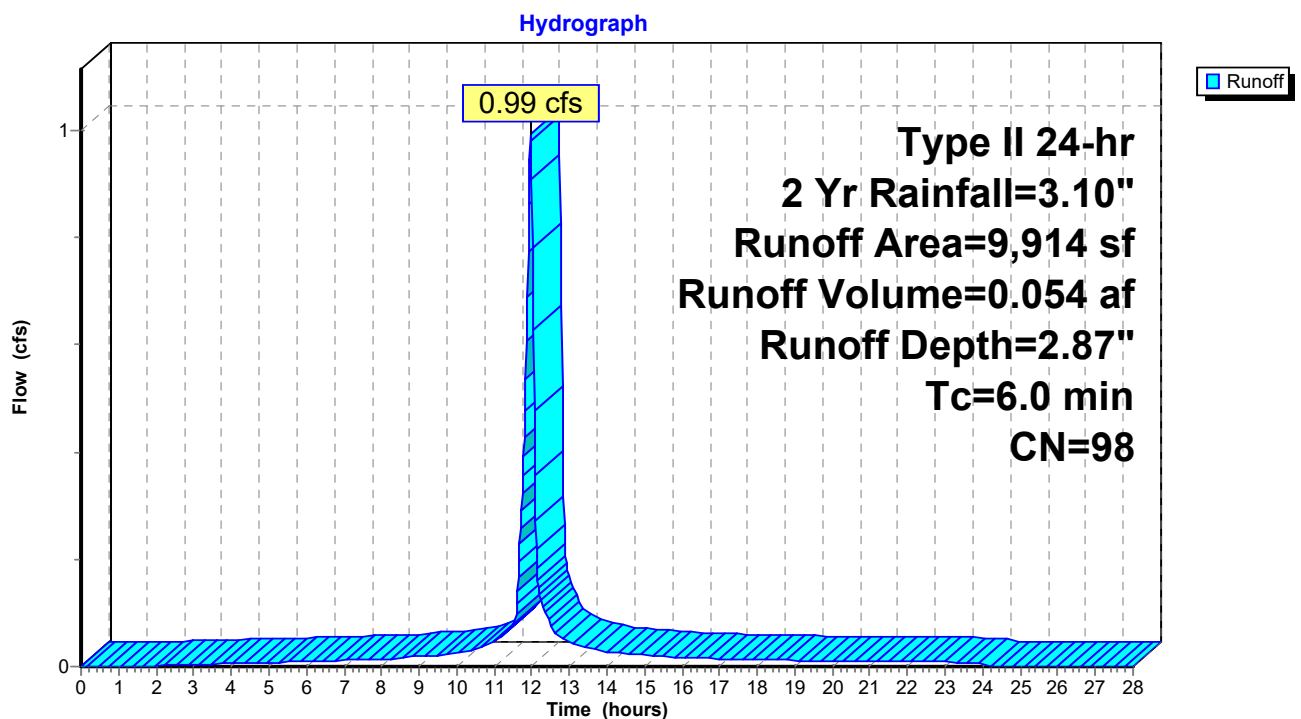
Summary for Subcatchment S4: CB2 Area

Runoff = 0.99 cfs @ 11.97 hrs, Volume= 0.054 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
128	79	<50% Grass cover, Poor, HSG B
9,786	98	Paved parking, HSG B
9,914	98	Weighted Average
128		1.29% Pervious Area
9,786		98.71% Impervious Area

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

Subcatchment S4: CB2 Area

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Type II 24-hr 2 Yr Rainfall=3.10"

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Summary for Subcatchment S5: Driveway Isld

Runoff = 0.04 cfs @ 11.97 hrs, Volume= 0.002 af, Depth= 2.87"

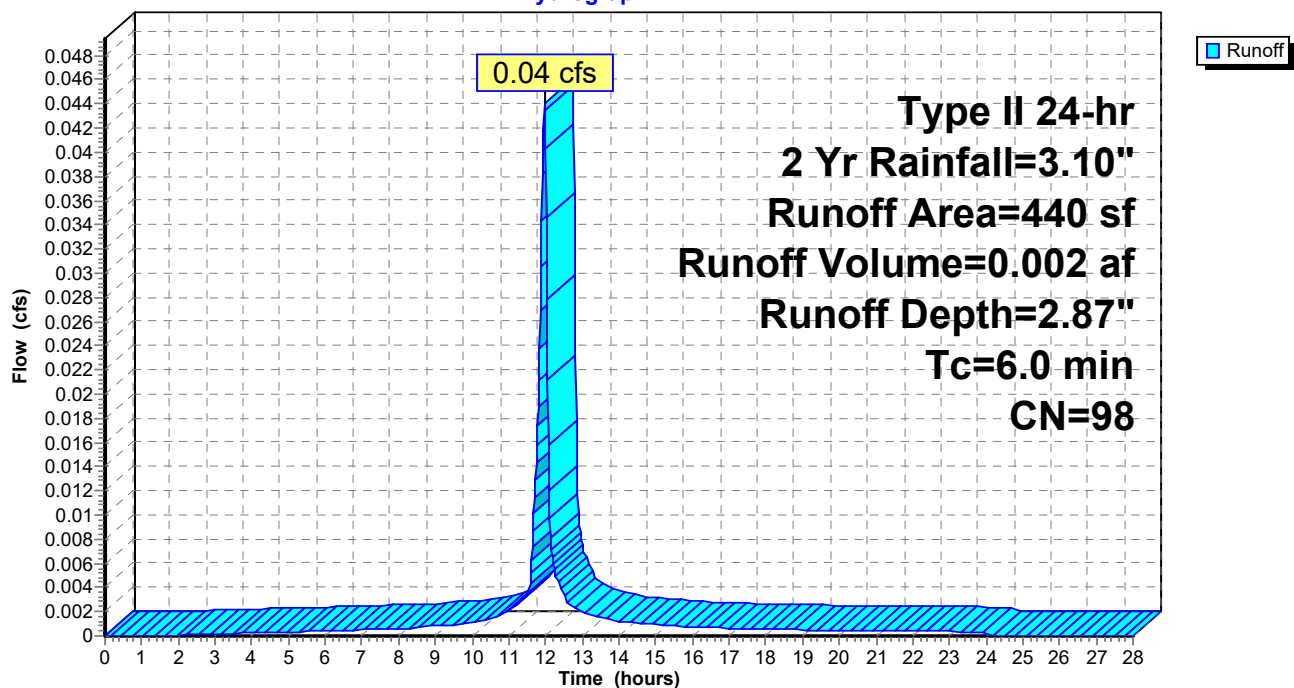
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
440	98	Water Surface, HSG B
440		100.00% Impervious Area

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

Subcatchment S5: Driveway Isld

Hydrograph



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Type II 24-hr 2 Yr Rainfall=3.10"

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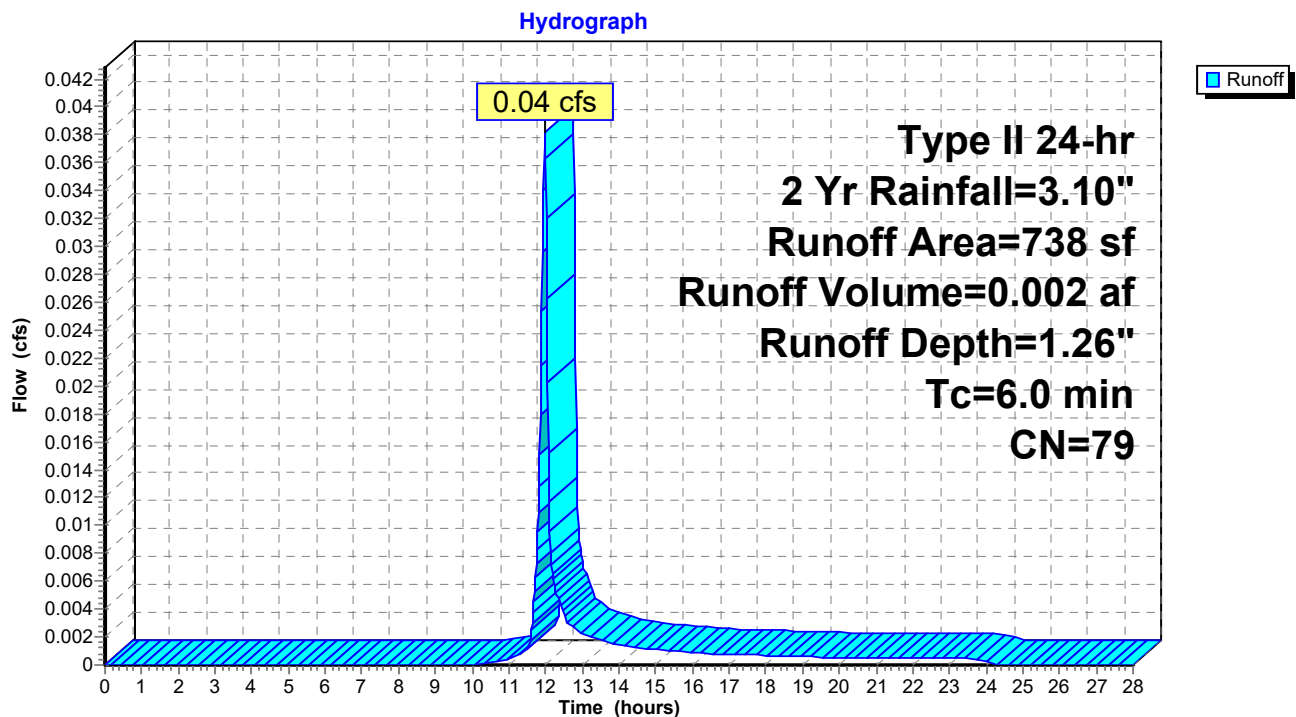
Summary for Subcatchment S6: NW offsite

Runoff = 0.04 cfs @ 11.98 hrs, Volume= 0.002 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
738	79	<50% Grass cover, Poor, HSG B
738		100.00% Pervious Area

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

Subcatchment S6: NW offsite

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Type II 24-hr 2 Yr Rainfall=3.10"

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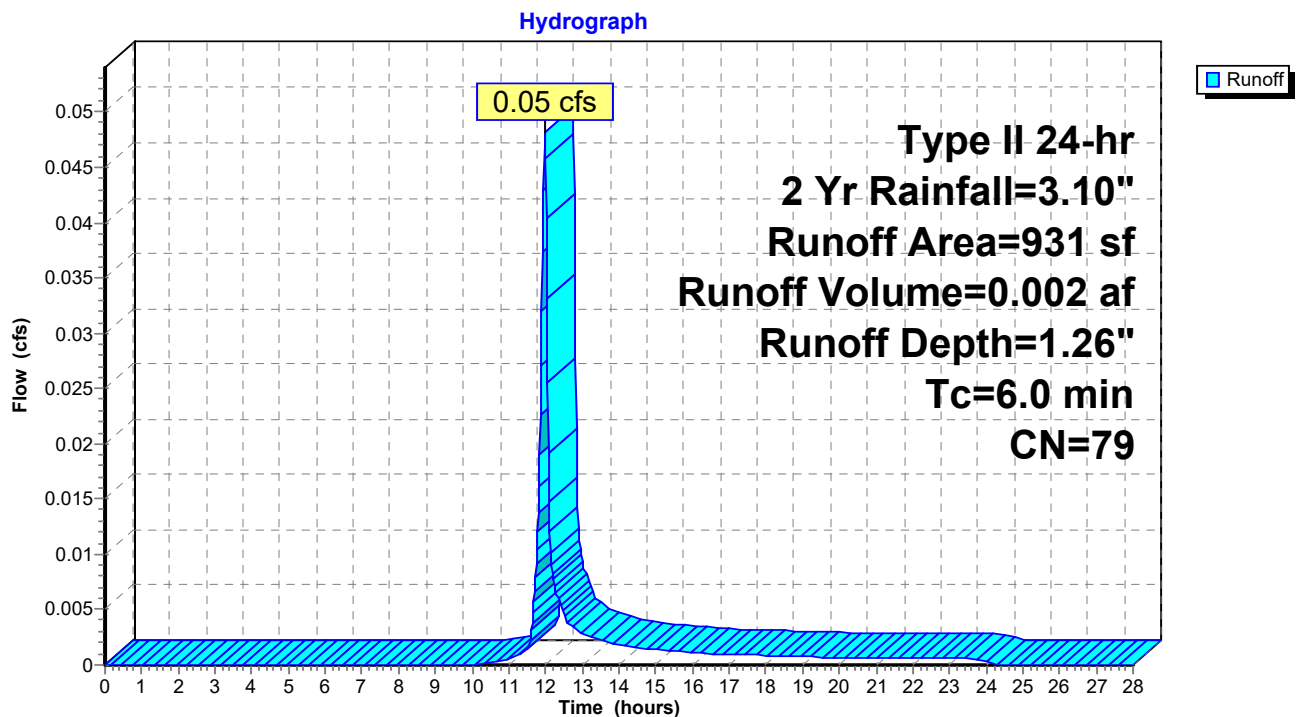
Summary for Subcatchment S7: West Offsite

Runoff = 0.05 cfs @ 11.98 hrs, Volume= 0.002 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
931	79	<50% Grass cover, Poor, HSG B
931		100.00% Pervious Area

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

Subcatchment S7: West Offsite

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Type II 24-hr 2 Yr Rainfall=3.10"

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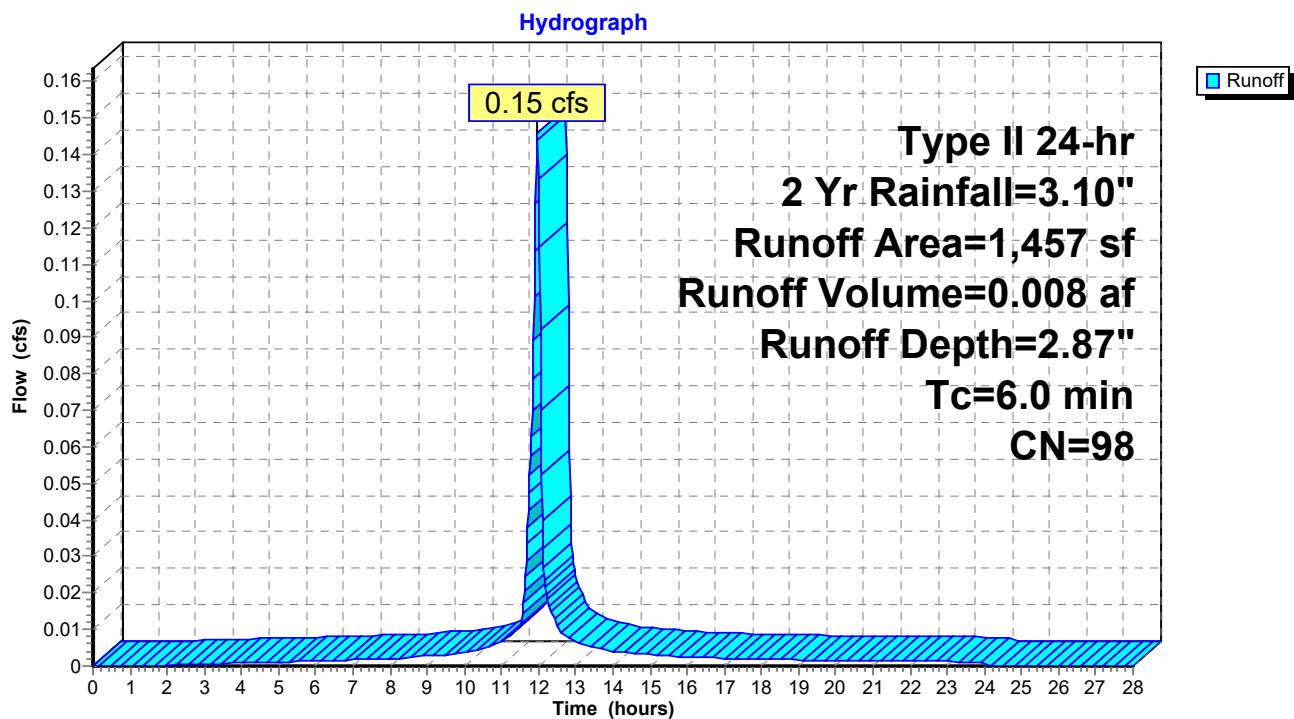
Summary for Subcatchment S8: Pvmnt to CB3

Runoff = 0.15 cfs @ 11.97 hrs, Volume= 0.008 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
849	98	Paved parking, HSG B
608	98	Paved parking, HSG B
1,457	98	Weighted Average
1,457		100.00% Impervious Area

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

Subcatchment S8: Pvmnt to CB3

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Type II 24-hr 2 Yr Rainfall=3.10"

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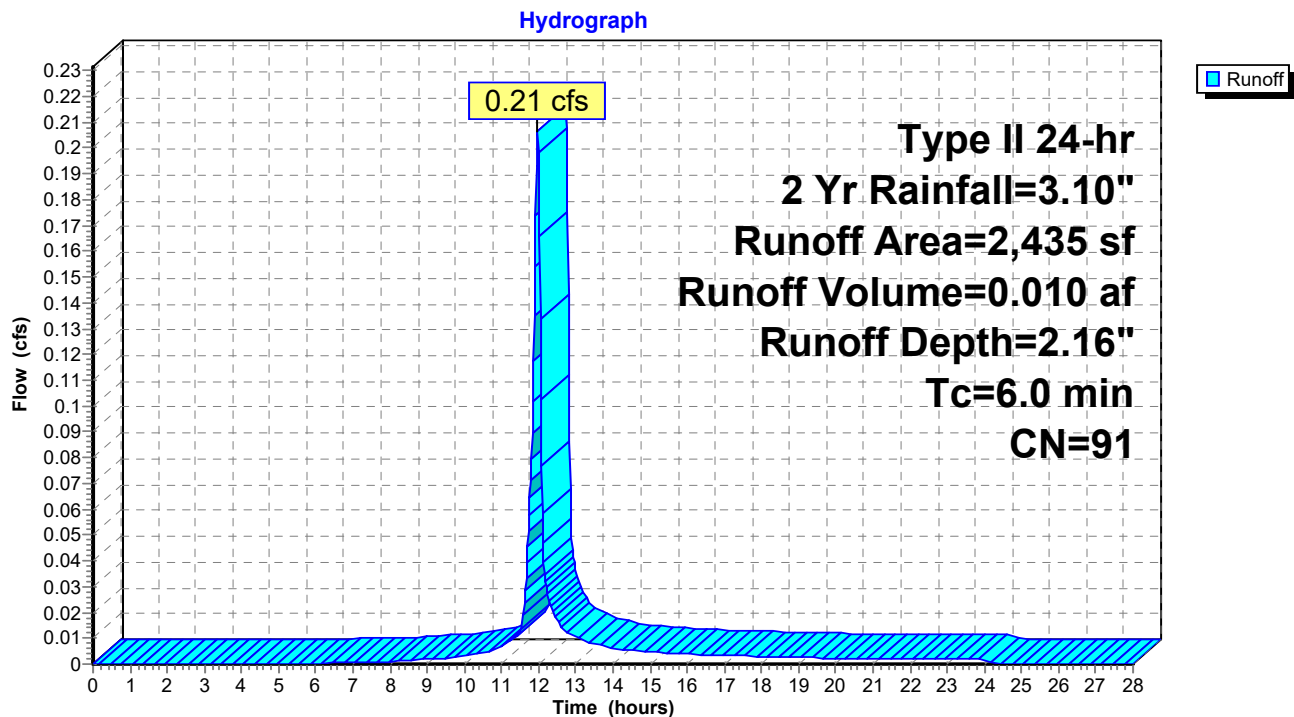
Summary for Subcatchment S9: Drivwy to CB3

Runoff = 0.21 cfs @ 11.97 hrs, Volume= 0.010 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 2 Yr Rainfall=3.10"

Area (sf)	CN	Description
617	98	Paved parking, HSG B
951	79	<50% Grass cover, Poor, HSG B
867	98	Water Surface, HSG B
2,435	91	Weighted Average
951		39.06% Pervious Area
1,484		60.94% Impervious Area

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

Subcatchment S9: Drivwy to CB3

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Type II 24-hr 2 Yr Rainfall=3.10"

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Summary for Reach 1R: 6" PVC

Inflow Area = 0.111 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2 Yr event
Inflow = 0.49 cfs @ 11.97 hrs, Volume= 0.027 af
Outflow = 0.48 cfs @ 11.98 hrs, Volume= 0.027 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Max. Velocity= 5.17 fps, Min. Travel Time= 0.4 min

Avg. Velocity= 1.54 fps, Avg. Travel Time= 1.2 min

Peak Storage= 11 cf @ 11.97 hrs

Average Depth at Peak Storage= 0.24'

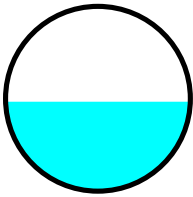
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.03 cfs

6.0" Round Pipe

n= 0.010 PVC, smooth interior

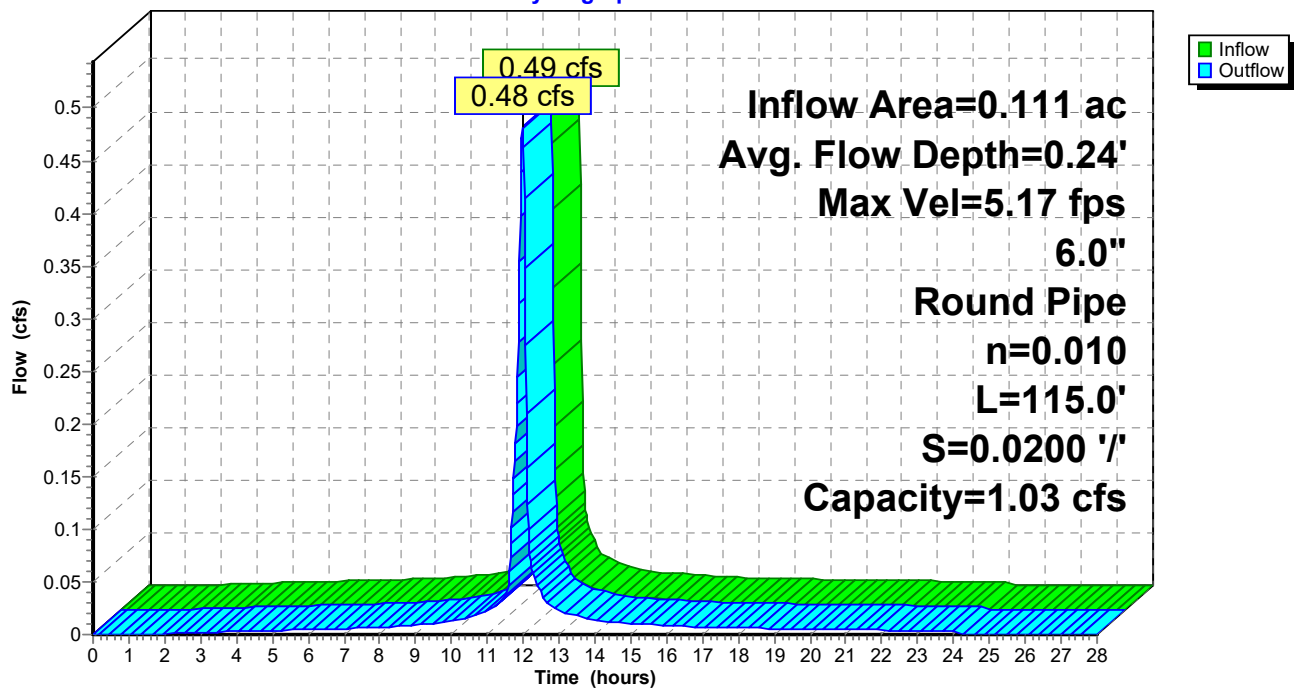
Length= 115.0' Slope= 0.0200 '/'

Inlet Invert= 61.00', Outlet Invert= 58.70'



Reach 1R: 6" PVC

Hydrograph



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Type II 24-hr 2 Yr Rainfall=3.10"

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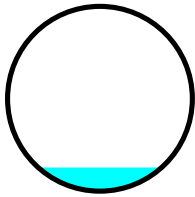
Summary for Reach 2R: 12" ADS

Inflow Area = 0.055 ac, 61.01% Impervious, Inflow Depth = 2.24" for 2 Yr event
Inflow = 0.19 cfs @ 11.97 hrs, Volume= 0.010 af
Outflow = 0.19 cfs @ 11.98 hrs, Volume= 0.010 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.34 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 0.97 fps, Avg. Travel Time= 1.3 min

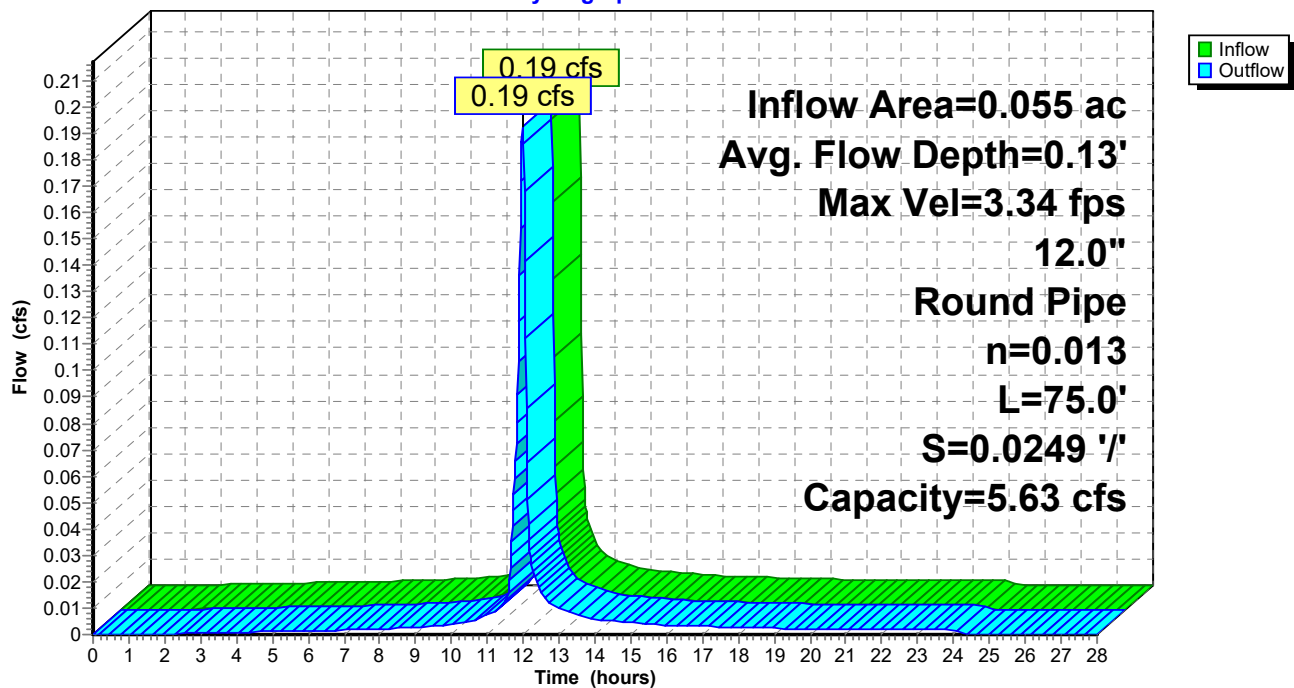
Peak Storage= 4 cf @ 11.97 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.63 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 75.0' Slope= 0.0249 '/'
Inlet Invert= 54.95', Outlet Invert= 53.08'



Reach 2R: 12" ADS

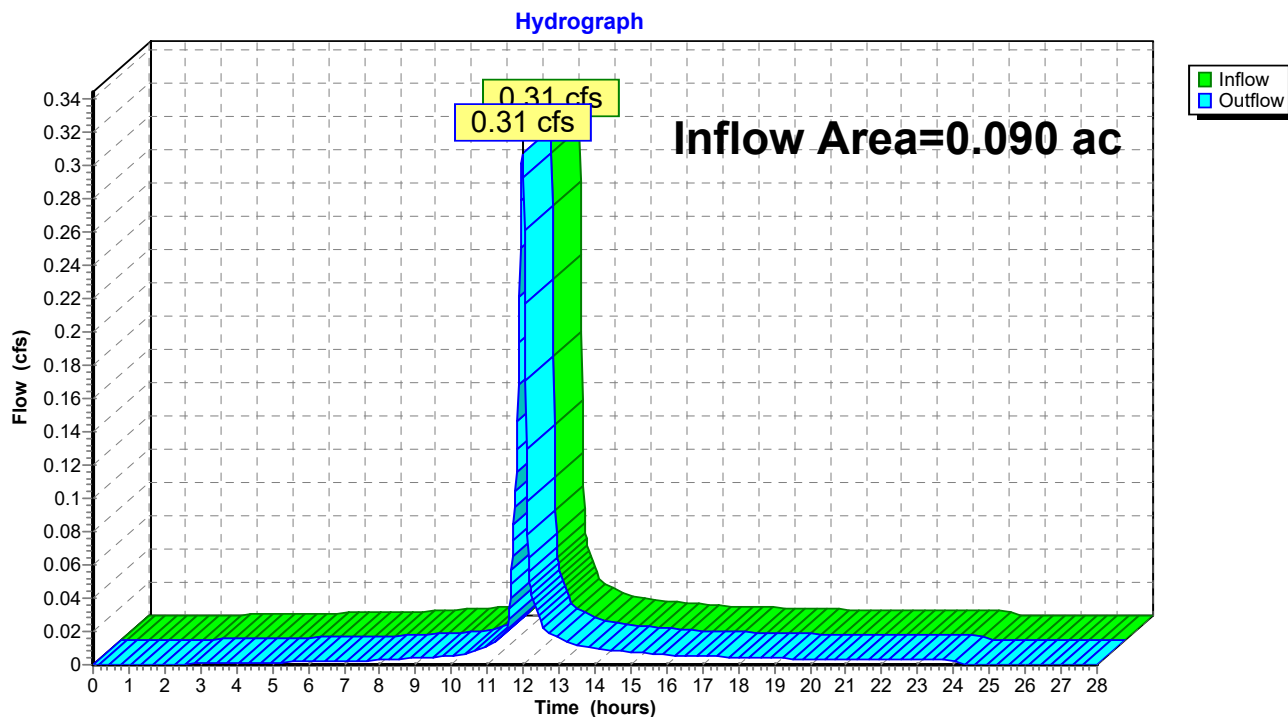
Hydrograph



Summary for Reach 5R: Total Offsite

Inflow Area = 0.090 ac, 55.20% Impervious, Inflow Depth = 2.14" for 2 Yr event
Inflow = 0.31 cfs @ 11.98 hrs, Volume= 0.016 af
Outflow = 0.31 cfs @ 11.98 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 5R: Total Offsite

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Type II 24-hr 2 Yr Rainfall=3.10"

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Summary for Pond P1A: Roof INF

Inflow Area = 0.111 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2 Yr event
 Inflow = 0.48 cfs @ 11.98 hrs, Volume= 0.027 af
 Outflow = 0.02 cfs @ 11.68 hrs, Volume= 0.027 af, Atten= 96%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 11.68 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 58.40' @ 13.19 hrs Surf.Area= 588 sf Storage= 567 cf

Plug-Flow detention time= 239.7 min calculated for 0.027 af (100% of inflow)
 Center-of-Mass det. time= 239.6 min (994.0 - 754.4)

Volume	Invert	Avail.Storage	Storage Description
#1	57.30'	1,423 cf	ISI Rainstore3 12 x 38 Inside= 39.4"W x 47.2"H => 12.14 sf x 3.28'L = 39.8 cf Outside= 39.4"W x 47.2"H => 12.92 sf x 3.28'L = 42.4 cf 1,610 cf Overall x 94.0% Voids
#2	56.80'	376 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 940 cf Overall x 40.0% Voids
		1,799 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.80	451	0	0
57.29	451	221	221
57.30	179	3	224
61.30	179	716	940

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.80'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.02 cfs @ 11.68 hrs HW=57.30' (Free Discharge)

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

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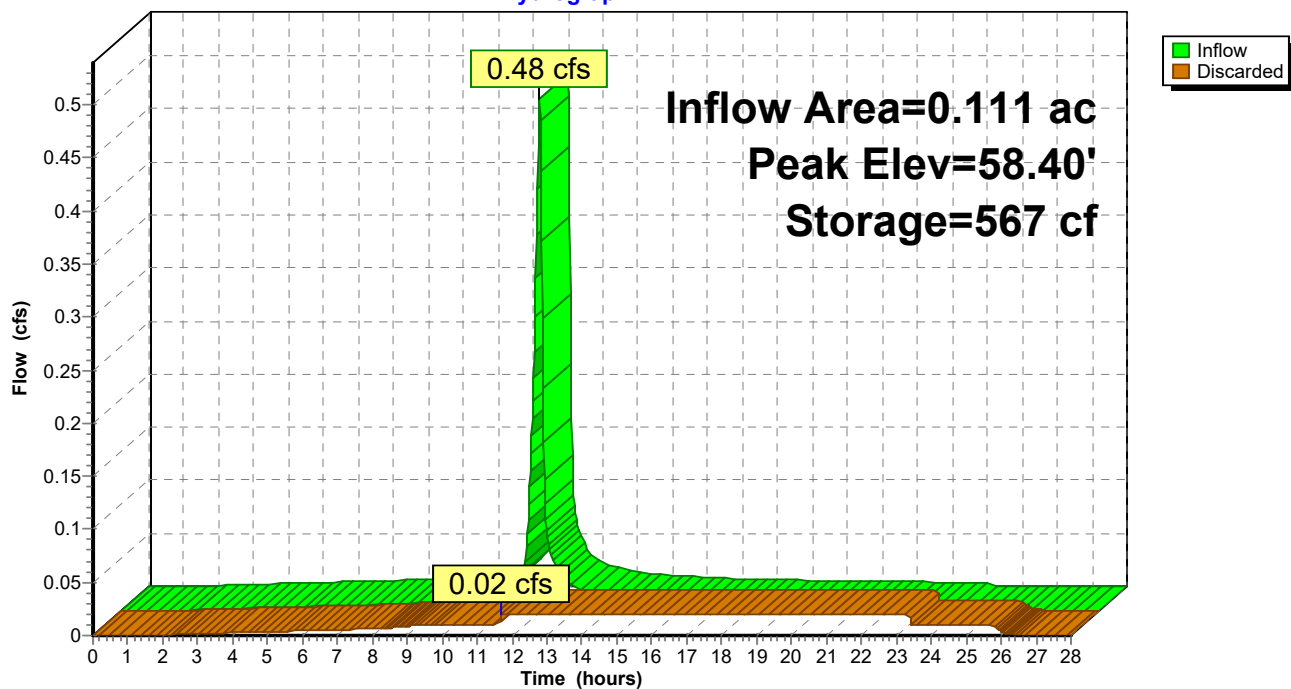
Type II 24-hr 2 Yr Rainfall=3.10"

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Pond P1A: Roof INF

Hydrograph



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Summary for Pond P1B: Roof INF

Inflow Area = 0.082 ac, 100.00% Impervious, Inflow Depth = 2.87" for 2 Yr event
 Inflow = 0.36 cfs @ 11.97 hrs, Volume= 0.020 af
 Outflow = 0.02 cfs @ 11.42 hrs, Volume= 0.020 af, Atten= 94%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 11.42 hrs, Volume= 0.020 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 58.93' @ 12.59 hrs Surf.Area= 651 sf Storage= 349 cf

Plug-Flow detention time= 110.0 min calculated for 0.020 af (100% of inflow)
 Center-of-Mass det. time= 110.0 min (863.2 - 753.2)

Volume	Invert	Avail.Storage	Storage Description
#1	58.30'	843 cf	ISI Rainstore3 6 x 45 Inside= 39.4"W x 23.6"H => 6.07 sf x 3.28'L = 19.9 cf Outside= 39.4"W x 23.6"H => 6.46 sf x 3.28'L = 21.2 cf 953 cf Overall x 94.0% Voids
#2	58.20'	182 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 454 cf Overall x 40.0% Voids
		1,024 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.20	487	0	0
58.44	487	117	117
58.45	167	3	120
60.45	167	334	454

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.20'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.02 cfs @ 11.42 hrs HW=58.30' (Free Discharge)

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

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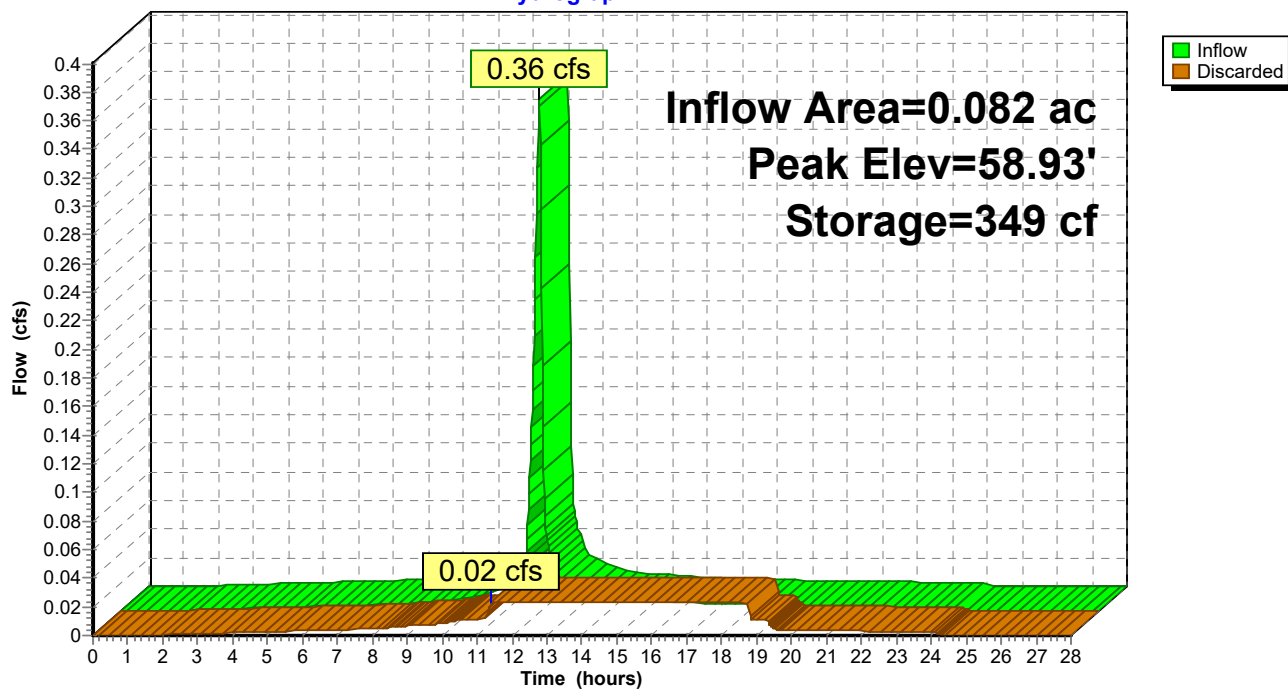
Type II 24-hr 2 Yr Rainfall=3.10"

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Pond P1B: Roof INF

Hydrograph



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Summary for Pond P2: Retention

Inflow Area = 0.263 ac, 77.23% Impervious, Inflow Depth = 2.87" for 2 Yr event
 Inflow = 1.15 cfs @ 11.97 hrs, Volume= 0.063 af
 Outflow = 0.04 cfs @ 13.66 hrs, Volume= 0.059 af, Atten= 97%, Lag= 101.5 min
 Discarded = 0.04 cfs @ 13.66 hrs, Volume= 0.059 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 58.95' @ 13.66 hrs Surf.Area= 1,583 sf Storage= 1,386 cf

Plug-Flow detention time= 327.7 min calculated for 0.059 af (95% of inflow)
 Center-of-Mass det. time= 295.6 min (1,048.8 - 753.2)

Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	3,681 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

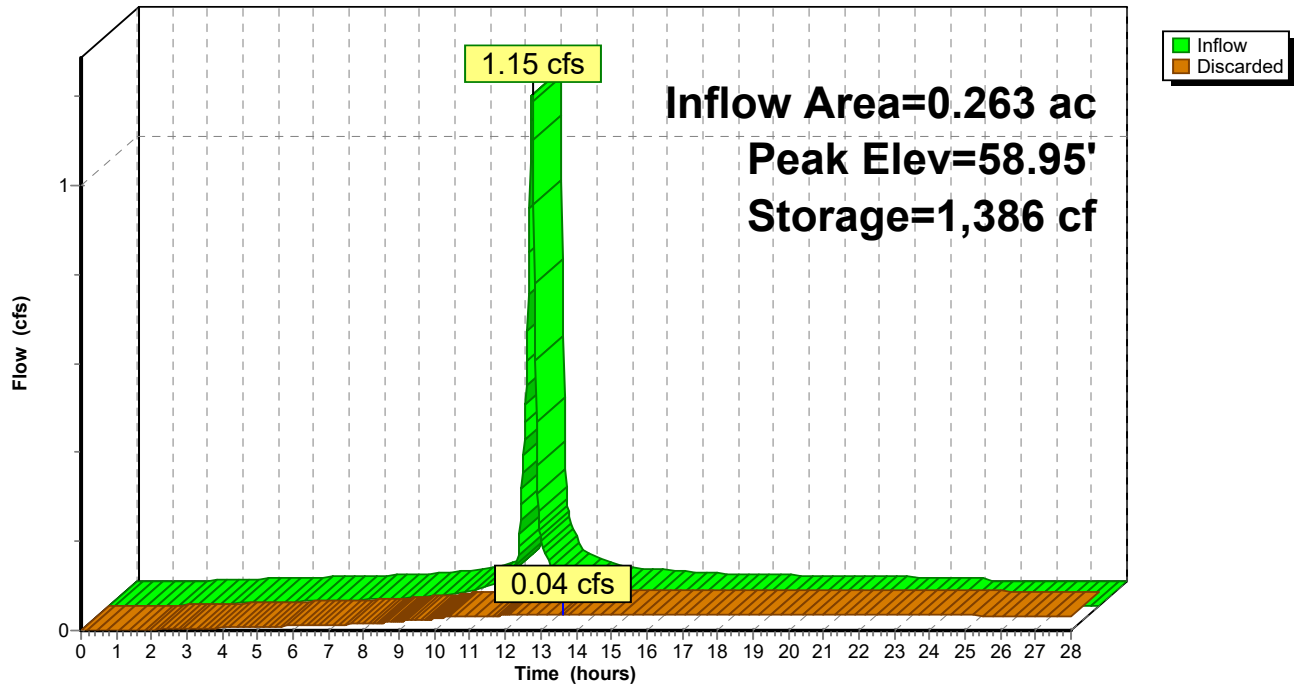
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	1,329	0	0
59.00	1,596	1,463	1,463
60.00	1,873	1,735	3,197
60.25	1,998	484	3,681

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.00'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.04 cfs @ 13.66 hrs HW=58.95' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P2: Retention

Hydrograph



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Type II 24-hr 2 Yr Rainfall=3.10"

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Summary for Pond P3: SE Inf

Inflow Area = 0.233 ac, 89.96% Impervious, Inflow Depth = 2.65" for 2 Yr event
 Inflow = 0.99 cfs @ 11.97 hrs, Volume= 0.052 af
 Outflow = 0.07 cfs @ 11.74 hrs, Volume= 0.052 af, Atten= 93%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 11.74 hrs, Volume= 0.052 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 57.67' @ 12.57 hrs Surf.Area= 1,801 sf Storage= 977 cf

Plug-Flow detention time= 115.5 min calculated for 0.051 af (100% of inflow)
 Center-of-Mass det. time= 115.4 min (886.9 - 771.5)

Volume	Invert	Avail.Storage	Storage Description
#1	57.10'	2,621 cf	ISI Rainstore3 6 x 140 Inside= 39.4"W x 23.6"H => 6.07 sf x 3.28'L = 19.9 cf Outside= 39.4"W x 23.6"H => 6.46 sf x 3.28'L = 21.2 cf 2,966 cf Overall x 94.0% Voids
#2	56.80'	389 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 973 cf Overall x 40.0% Voids
		3,010 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.80	1,301	0	0
57.09	1,301	377	377
57.10	294	8	385
59.10	294	588	973

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.80'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.07 cfs @ 11.74 hrs HW=57.11' (Free Discharge)

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

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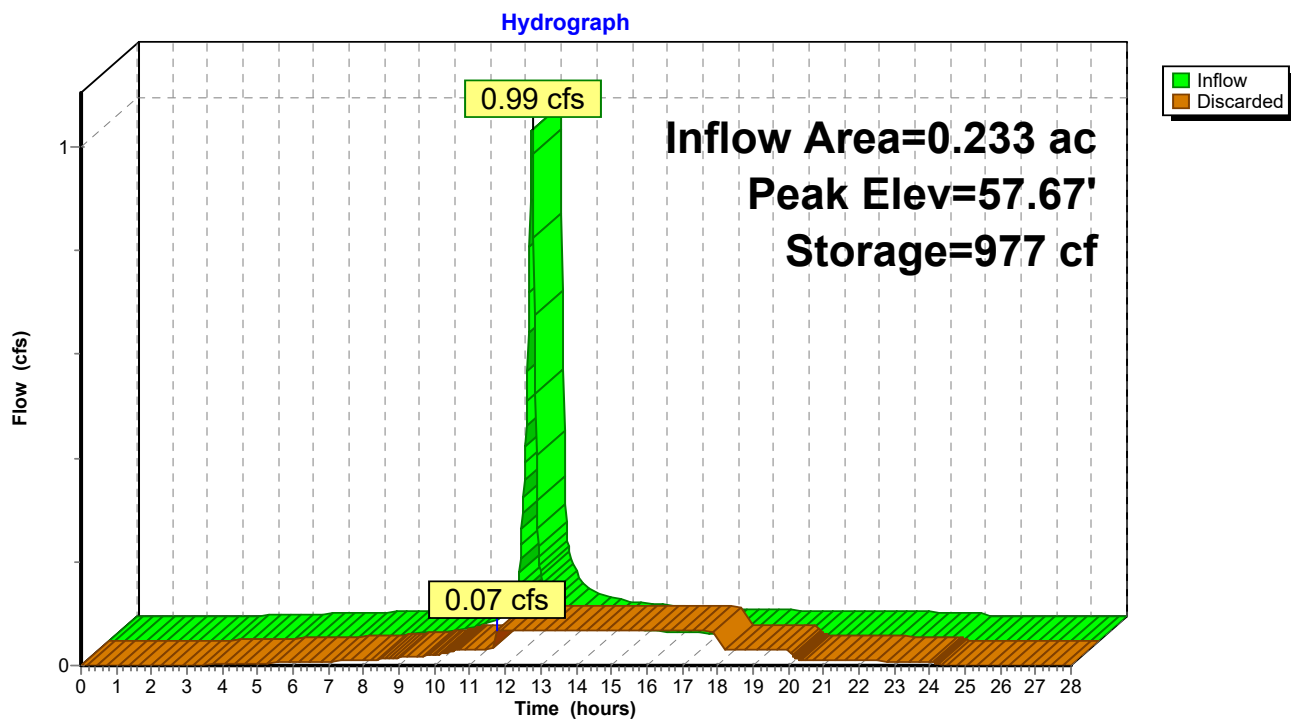
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Pond P3: SE Inf



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Type II 24-hr 2 Yr Rainfall=3.10"

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Summary for Pond P4: SW Inf

Inflow Area = 0.228 ac, 98.71% Impervious, Inflow Depth = 2.87" for 2 Yr event
 Inflow = 0.99 cfs @ 11.97 hrs, Volume= 0.054 af
 Outflow = 0.07 cfs @ 11.60 hrs, Volume= 0.054 af, Atten= 93%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 11.60 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 57.01' @ 12.53 hrs Surf.Area= 1,972 sf Storage= 962 cf

Plug-Flow detention time= 95.9 min calculated for 0.054 af (100% of inflow)
 Center-of-Mass det. time= 95.9 min (849.0 - 753.2)

Volume	Invert	Avail.Storage	Storage Description
#1	56.45'	2,808 cf	ISI Rainstore3 6 x 150 Inside= 39.4"W x 23.6"H => 6.07 sf x 3.28'L = 19.9 cf Outside= 39.4"W x 23.6"H => 6.46 sf x 3.28'L = 21.2 cf 3,178 cf Overall x 94.0% Voids
#2	56.30'	369 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 923 cf Overall x 40.0% Voids
		3,177 cf	Total Available Storage

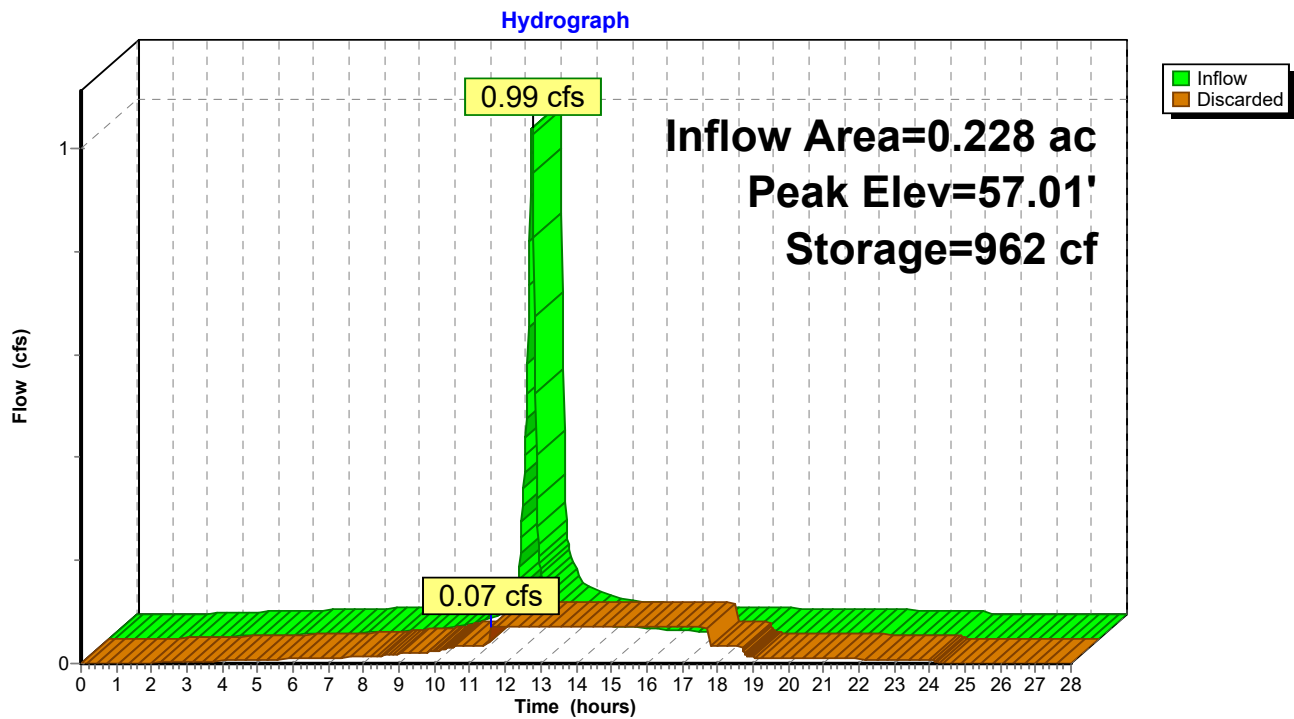
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.30	1,426	0	0
56.44	1,426	200	200
56.45	357	9	209
58.45	357	714	923

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.30'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.07 cfs @ 11.60 hrs HW=56.45' (Free Discharge)

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

Pond P4: SW Inf



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Type II 24-hr 2 Yr Rainfall=3.10"

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Summary for Pond P5: Retention

Inflow Area = 0.066 ac, 66.92% Impervious, Inflow Depth = 2.27" for 2 Yr event
 Inflow = 0.25 cfs @ 11.97 hrs, Volume= 0.012 af
 Outflow = 0.02 cfs @ 12.63 hrs, Volume= 0.012 af, Atten= 94%, Lag= 39.5 min
 Discarded = 0.02 cfs @ 12.63 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 57.38' @ 12.63 hrs Surf.Area= 688 sf Storage= 235 cf

Plug-Flow detention time= 121.1 min calculated for 0.012 af (100% of inflow)
 Center-of-Mass det. time= 121.0 min (912.4 - 791.4)

Volume	Invert	Avail.Storage	Storage Description
#1	57.00'	1,230 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

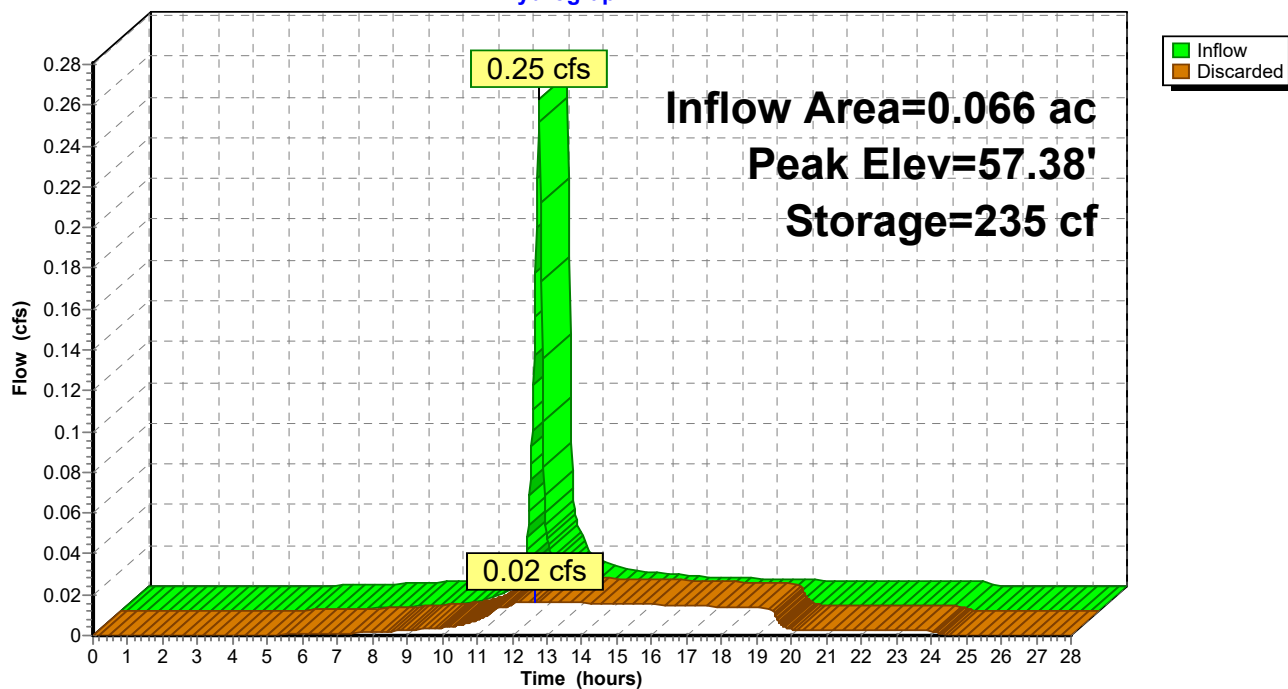
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
57.00	557	0	0
58.00	905	731	731
58.50	1,092	499	1,230

Device	Routing	Invert	Outlet Devices
#1	Discarded	57.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 12.63 hrs HW=57.38' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P5: Retention

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Time span=0.00-28.00 hrs, dt=0.02 hrs, 1401 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Runoff to Street	Runoff Area=794 sf 89.04% Impervious Runoff Depth=4.04" Tc=6.0 min CN=96 Runoff=0.11 cfs 0.006 af
SubcatchmentS1A: Store Roof	Runoff Area=4,845 sf 100.00% Impervious Runoff Depth=4.26" Tc=6.0 min CN=98 Runoff=0.71 cfs 0.040 af
SubcatchmentS1B: Canopy Roof	Runoff Area=3,568 sf 100.00% Impervious Runoff Depth=4.26" Tc=6.0 min CN=98 Runoff=0.52 cfs 0.029 af
SubcatchmentS2: Rear of Bldg	Runoff Area=11,460 sf 77.23% Impervious Runoff Depth=4.26" Tc=6.0 min CN=98 Runoff=1.68 cfs 0.093 af
SubcatchmentS3: CB1 Area	Runoff Area=10,158 sf 89.96% Impervious Runoff Depth=4.04" Tc=6.0 min CN=96 Runoff=1.46 cfs 0.078 af
SubcatchmentS4: CB2 Area	Runoff Area=9,914 sf 98.71% Impervious Runoff Depth=4.26" Tc=6.0 min CN=98 Runoff=1.45 cfs 0.081 af
SubcatchmentS5: Driveway Islld	Runoff Area=440 sf 100.00% Impervious Runoff Depth=4.26" Tc=6.0 min CN=98 Runoff=0.06 cfs 0.004 af
SubcatchmentS6: NW offsite	Runoff Area=738 sf 0.00% Impervious Runoff Depth=2.38" Tc=6.0 min CN=79 Runoff=0.07 cfs 0.003 af
SubcatchmentS7: West Offsite	Runoff Area=931 sf 0.00% Impervious Runoff Depth=2.38" Tc=6.0 min CN=79 Runoff=0.09 cfs 0.004 af
SubcatchmentS8: Pvmnt to CB3	Runoff Area=1,457 sf 100.00% Impervious Runoff Depth=4.26" Tc=6.0 min CN=98 Runoff=0.21 cfs 0.012 af
SubcatchmentS9: Drivwy to CB3	Runoff Area=2,435 sf 60.94% Impervious Runoff Depth=3.50" Tc=6.0 min CN=91 Runoff=0.32 cfs 0.016 af
Reach 1R: 6" PVC	Avg. Flow Depth=0.30' Max Vel=5.65 fps Inflow=0.71 cfs 0.040 af 6.0" Round Pipe n=0.010 L=115.0' S=0.0200 '/' Capacity=1.03 cfs Outflow=0.70 cfs 0.040 af
Reach 2R: 12" ADS	Avg. Flow Depth=0.16' Max Vel=3.81 fps Inflow=0.30 cfs 0.016 af 12.0" Round Pipe n=0.013 L=75.0' S=0.0249 '/' Capacity=5.63 cfs Outflow=0.30 cfs 0.016 af
Reach 5R: Total Offsite	Inflow=0.49 cfs 0.026 af Outflow=0.49 cfs 0.026 af
Pond P1A: Roof INF	Peak Elev=59.23' Storage=926 cf Inflow=0.70 cfs 0.040 af Outflow=0.02 cfs 0.034 af
Pond P1B: Roof INF	Peak Elev=59.37' Storage=567 cf Inflow=0.52 cfs 0.029 af Outflow=0.02 cfs 0.029 af

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Type II 24-hr 10 Yr Rainfall=4.50"

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Pond P2: RetentionPeak Elev=59.47' Storage=2,247 cf Inflow=1.68 cfs 0.093 af
Outflow=0.04 cfs 0.069 af**Pond P3: SE Inf**Peak Elev=58.12' Storage=1,633 cf Inflow=1.46 cfs 0.078 af
Outflow=0.07 cfs 0.078 af**Pond P4: SW Inf**Peak Elev=57.38' Storage=1,546 cf Inflow=1.45 cfs 0.081 af
Outflow=0.07 cfs 0.081 af**Pond P5: Retention**Peak Elev=57.62' Storage=410 cf Inflow=0.39 cfs 0.020 af
Outflow=0.02 cfs 0.020 af**Total Runoff Area = 1.073 ac Runoff Volume = 0.367 af Average Runoff Depth = 4.10"**
13.83% Pervious = 0.148 ac 86.17% Impervious = 0.925 ac

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Type II 24-hr 10 Yr Rainfall=4.50"

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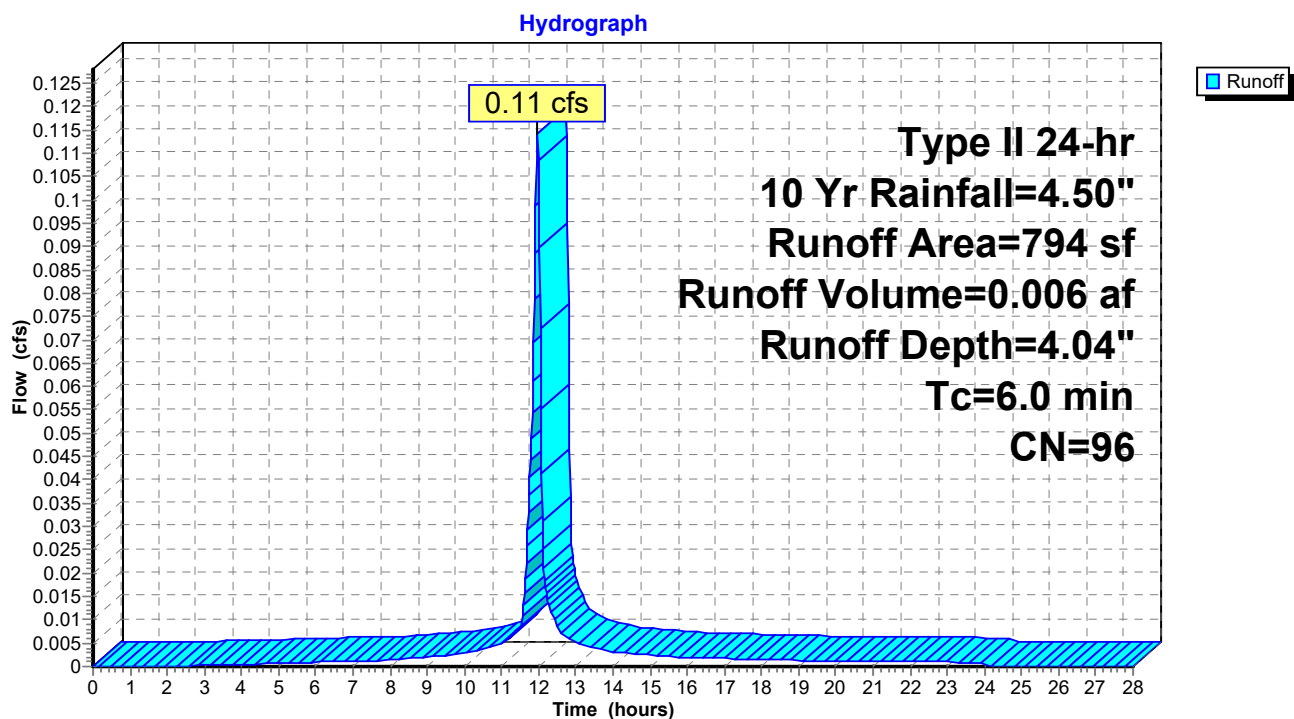
Summary for Subcatchment S10: Runoff to Street

Runoff = 0.11 cfs @ 11.97 hrs, Volume= 0.006 af, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
707	98	Paved parking, HSG B
87	79	<50% Grass cover, Poor, HSG B
794	96	Weighted Average
87		10.96% Pervious Area
707		89.04% Impervious Area

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

Subcatchment S10: Runoff to Street

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Type II 24-hr 10 Yr Rainfall=4.50"

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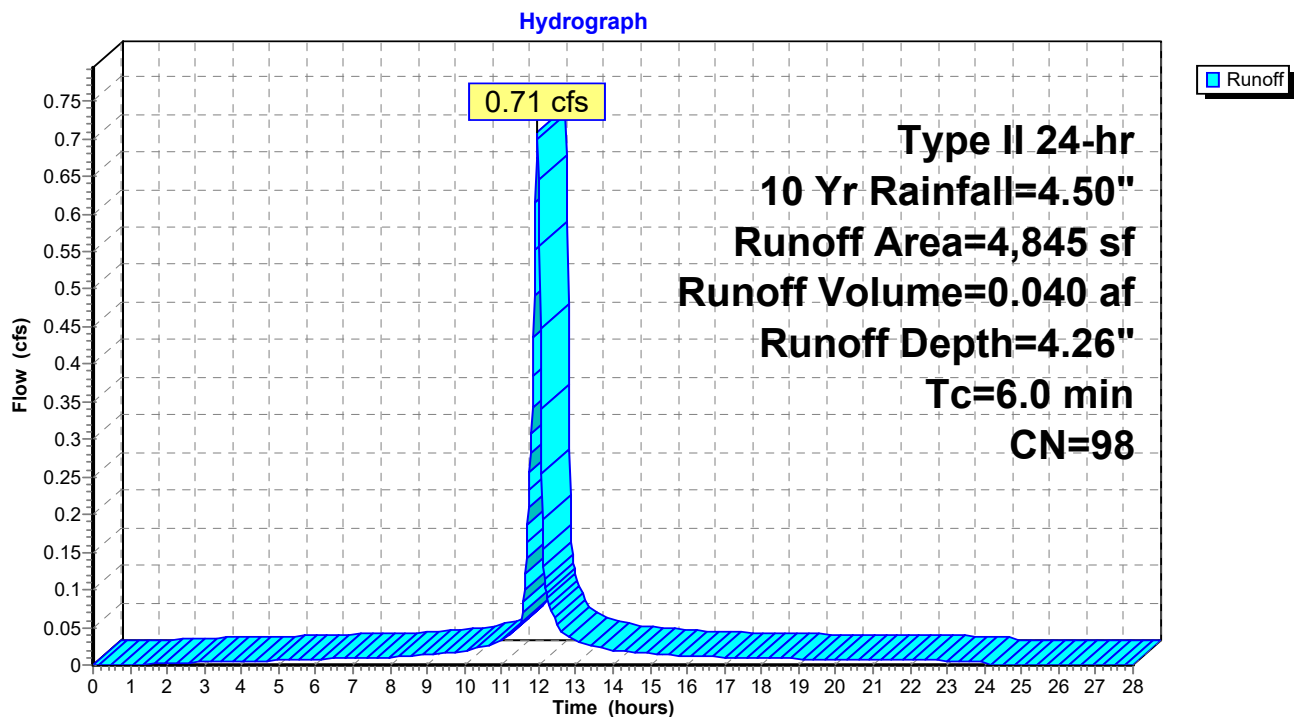
Summary for Subcatchment S1A: Store Roof

Runoff = 0.71 cfs @ 11.97 hrs, Volume= 0.040 af, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
4,845	98	Roofs, HSG B
4,845		100.00% Impervious Area

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

Subcatchment S1A: Store Roof

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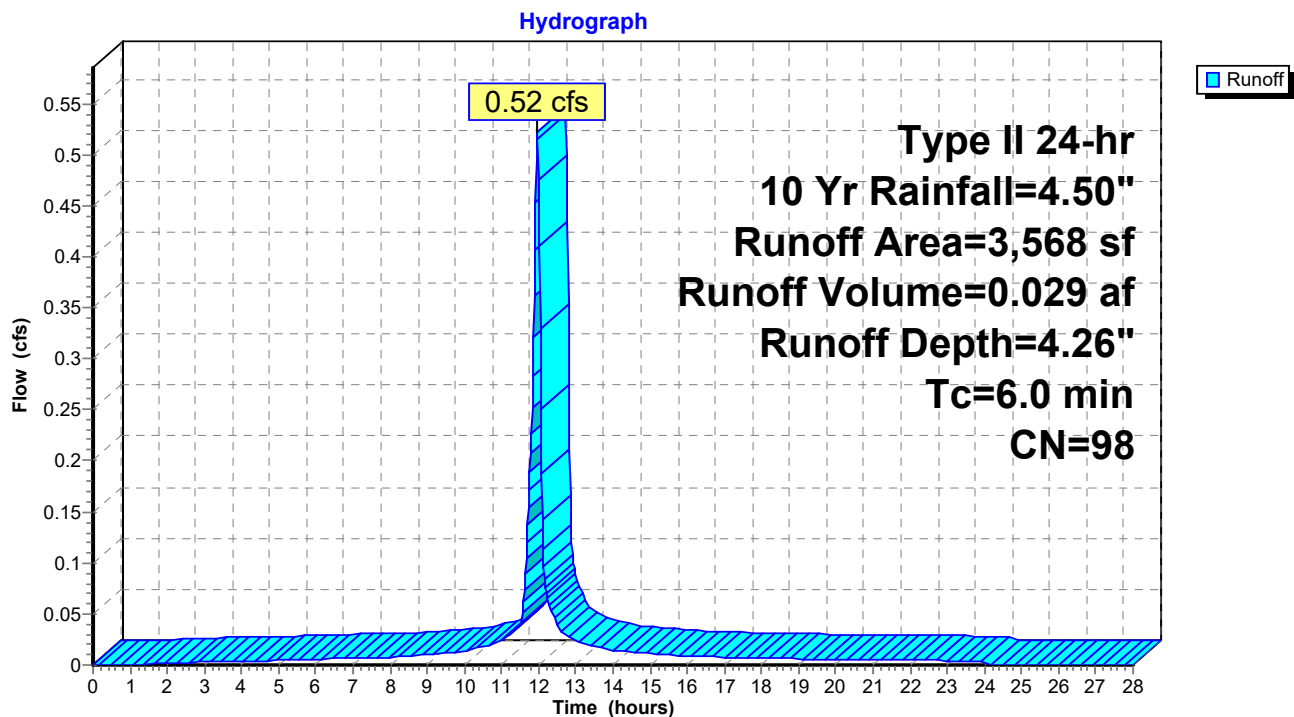
Summary for Subcatchment S1B: Canopy Roof

Runoff = 0.52 cfs @ 11.97 hrs, Volume= 0.029 af, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
3,568	98	Roofs, HSG B
3,568		100.00% Impervious Area

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

Subcatchment S1B: Canopy Roof

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Type II 24-hr 10 Yr Rainfall=4.50"

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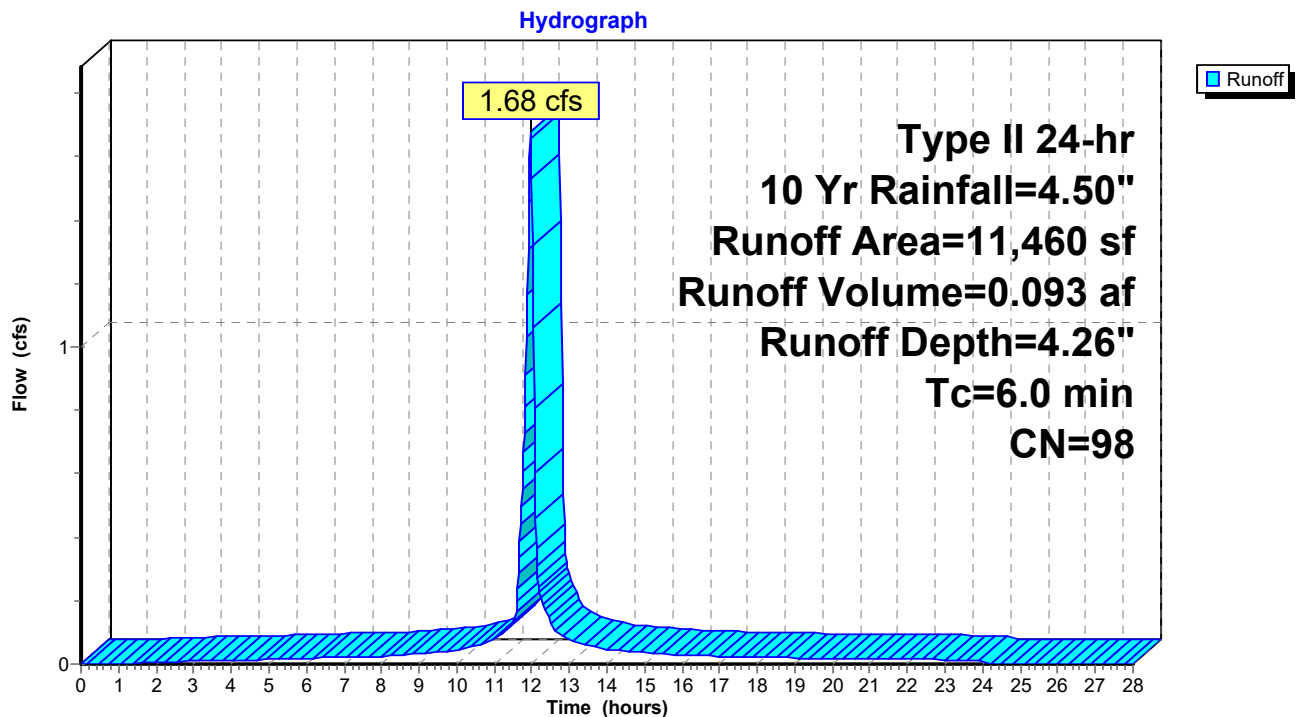
Summary for Subcatchment S2: Rear of Bldg

Runoff = 1.68 cfs @ 11.97 hrs, Volume= 0.093 af, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
2,370	98	Water Surface, 0% imp, HSG B
239	79	<50% Grass cover, Poor, HSG B
8,851	98	Paved parking, HSG B
11,460	98	Weighted Average
2,609		22.77% Pervious Area
8,851		77.23% Impervious Area

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

Subcatchment S2: Rear of Bldg

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Type II 24-hr 10 Yr Rainfall=4.50"

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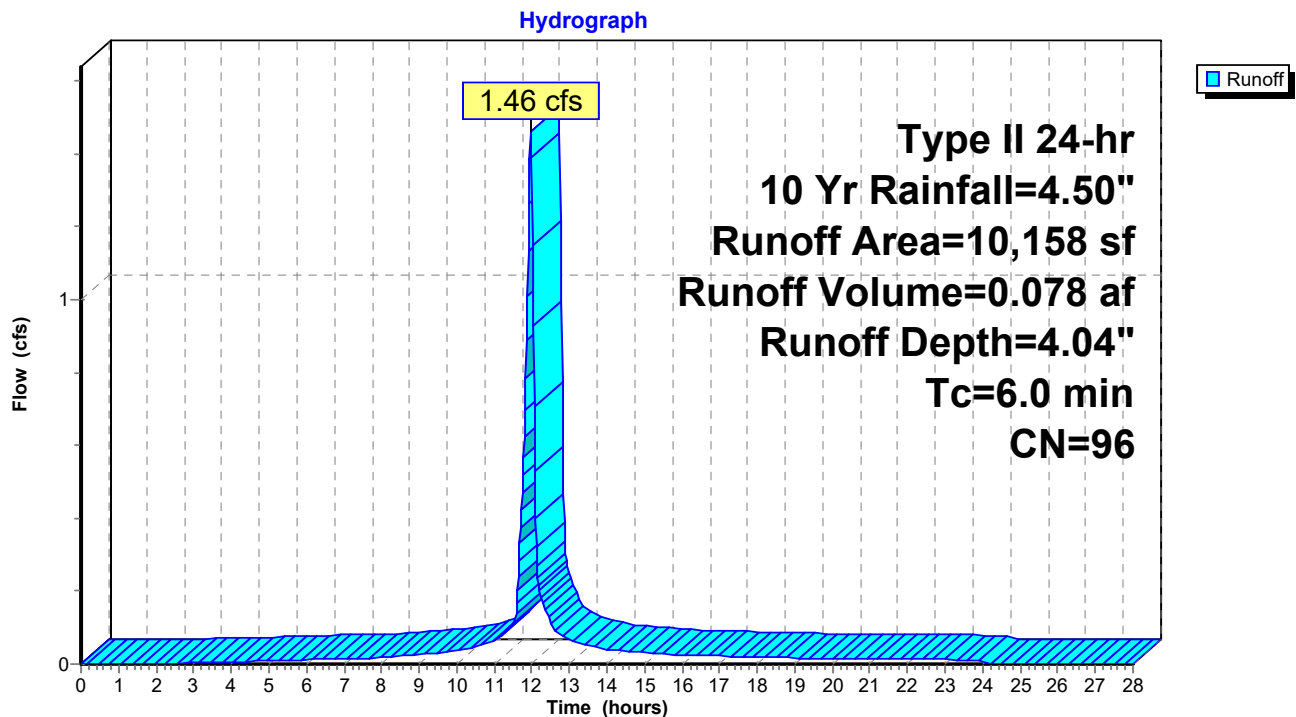
Summary for Subcatchment S3: CB1 Area

Runoff = 1.46 cfs @ 11.97 hrs, Volume= 0.078 af, Depth= 4.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
1,020	79	<50% Grass cover, Poor, HSG B
9,091	98	Paved parking, HSG B
47	98	Paved parking, HSG B
10,158	96	Weighted Average
1,020		10.04% Pervious Area
9,138		89.96% Impervious Area

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

Subcatchment S3: CB1 Area

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Type II 24-hr 10 Yr Rainfall=4.50"

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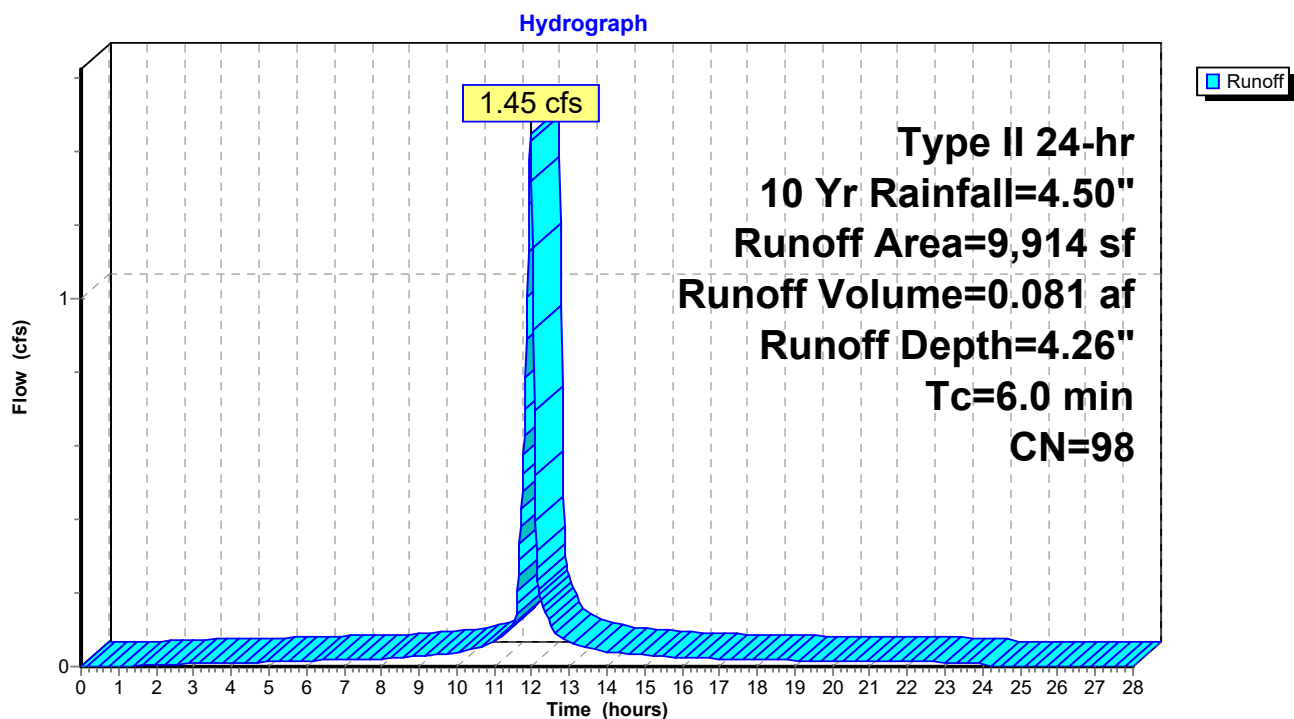
Summary for Subcatchment S4: CB2 Area

Runoff = 1.45 cfs @ 11.97 hrs, Volume= 0.081 af, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
128	79	<50% Grass cover, Poor, HSG B
9,786	98	Paved parking, HSG B
9,914	98	Weighted Average
128		1.29% Pervious Area
9,786		98.71% Impervious Area

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

Subcatchment S4: CB2 Area

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Type II 24-hr 10 Yr Rainfall=4.50"

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Summary for Subcatchment S5: Driveway Isld

Runoff = 0.06 cfs @ 11.97 hrs, Volume= 0.004 af, Depth= 4.26"

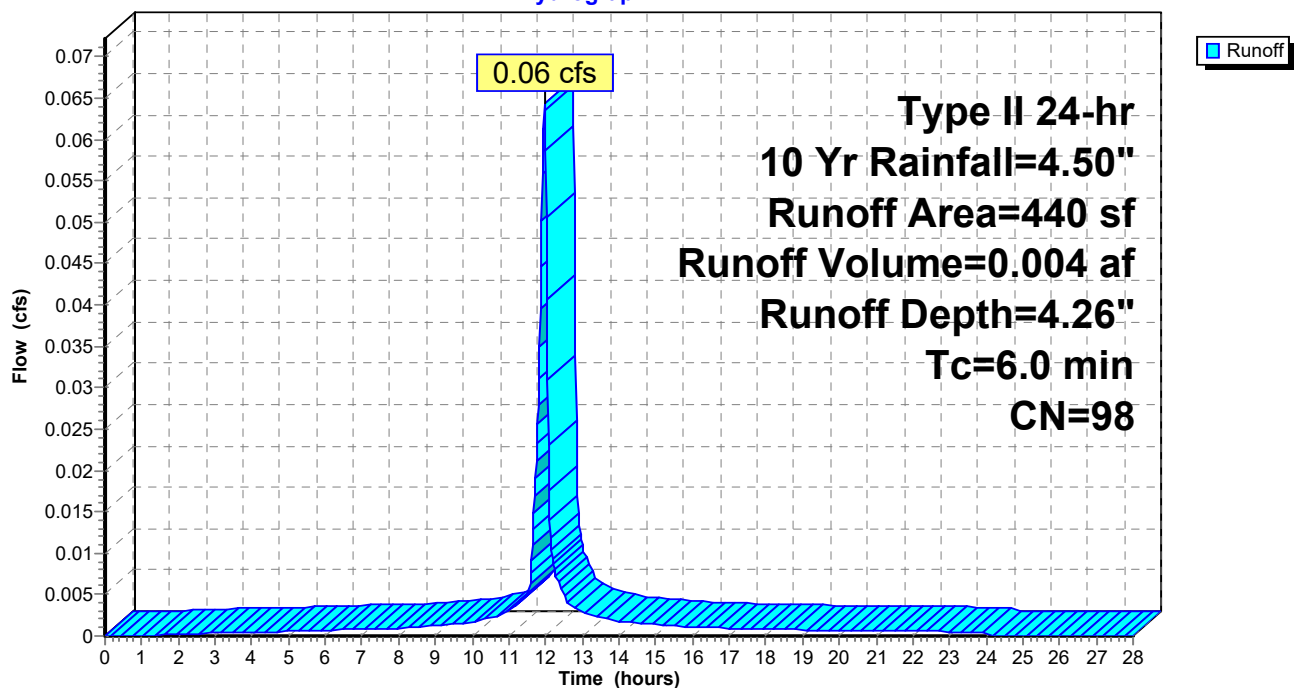
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
440	98	Water Surface, HSG B
440		100.00% Impervious Area

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

Subcatchment S5: Driveway Isld

Hydrograph



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Type II 24-hr 10 Yr Rainfall=4.50"

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Summary for Subcatchment S6: NW offsite

Runoff = 0.07 cfs @ 11.97 hrs, Volume= 0.003 af, Depth= 2.38"

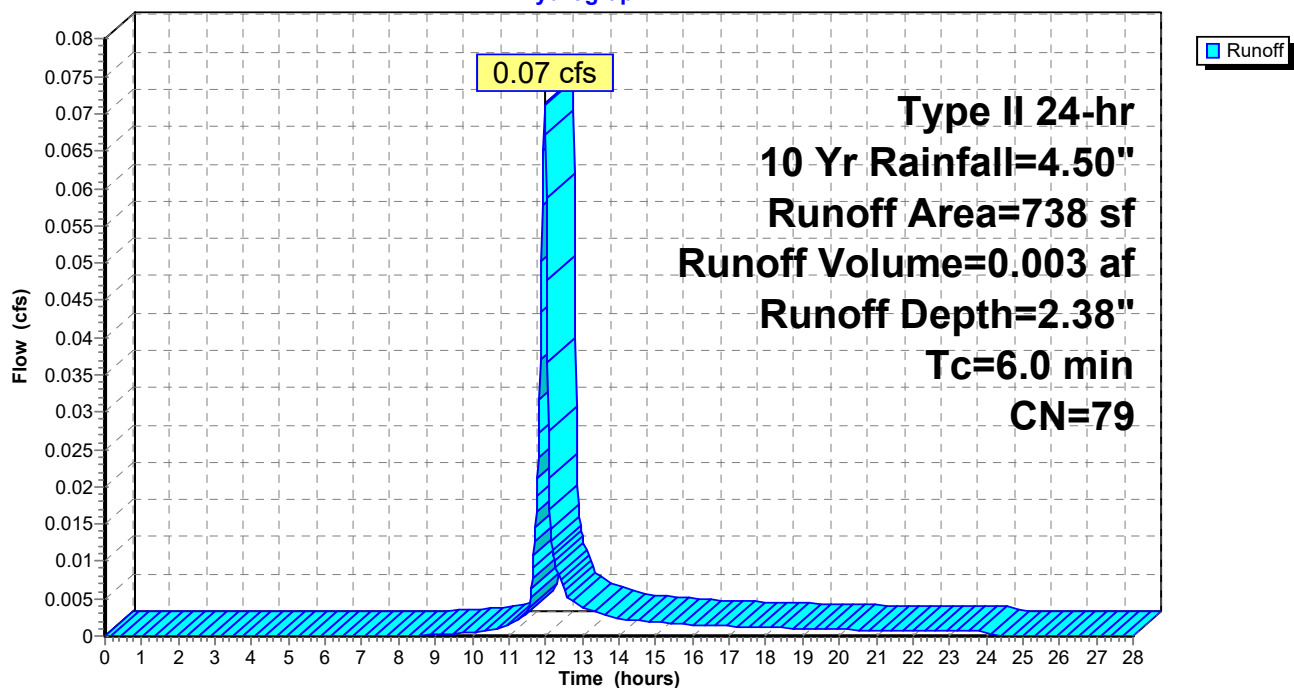
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
738	79	<50% Grass cover, Poor, HSG B
738		100.00% Pervious Area

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

Subcatchment S6: NW offsite

Hydrograph



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Type II 24-hr 10 Yr Rainfall=4.50"

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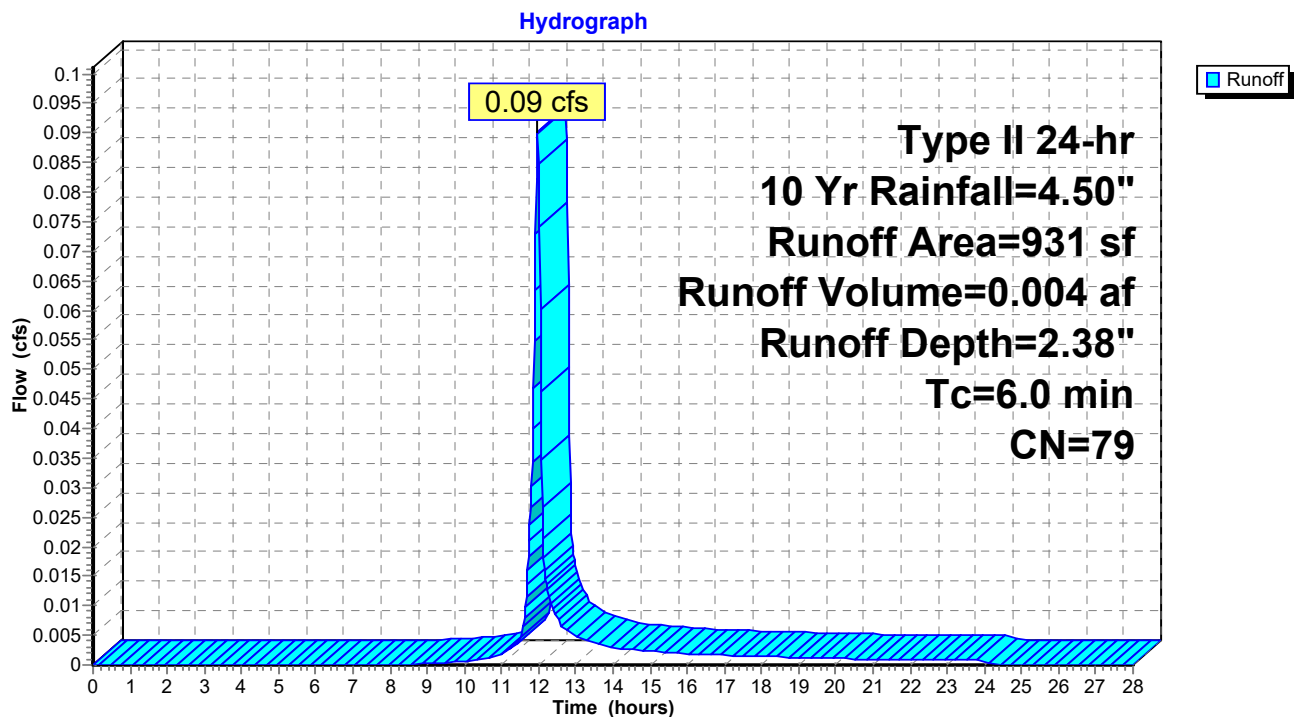
Summary for Subcatchment S7: West Offsite

Runoff = 0.09 cfs @ 11.97 hrs, Volume= 0.004 af, Depth= 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
931	79	<50% Grass cover, Poor, HSG B
931		100.00% Pervious Area

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

Subcatchment S7: West Offsite

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Type II 24-hr 10 Yr Rainfall=4.50"

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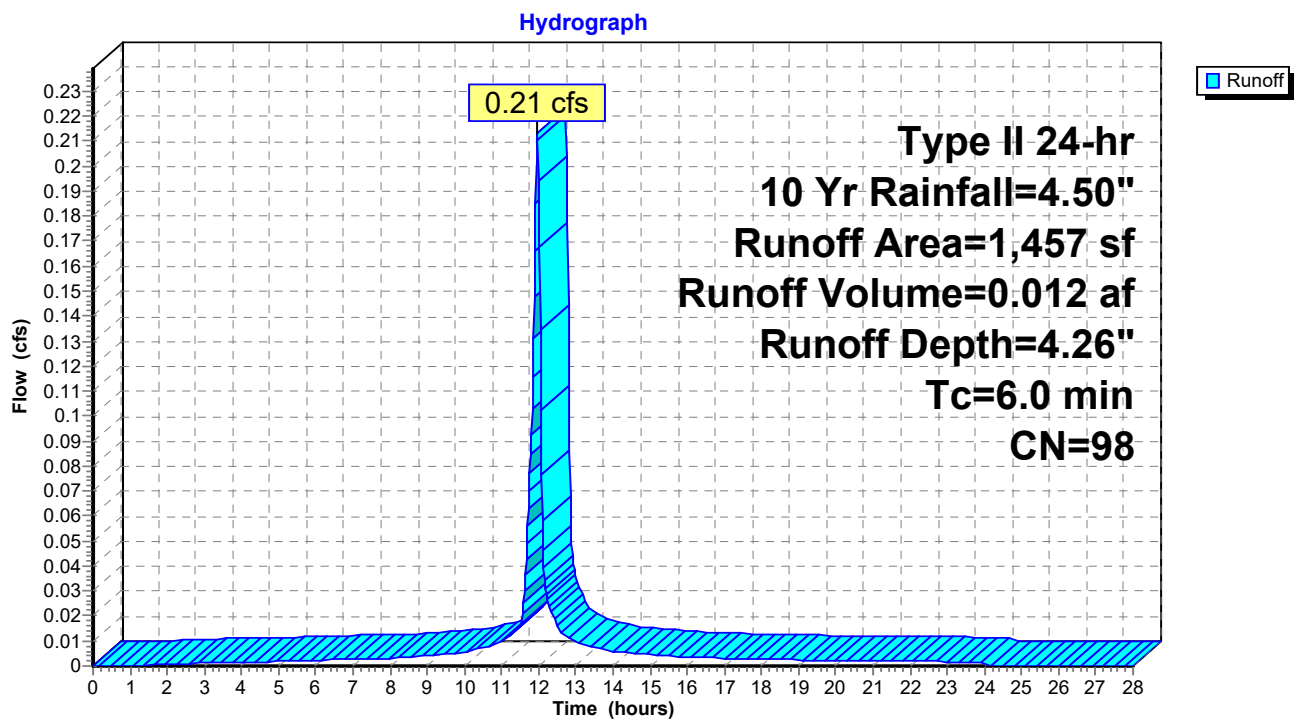
Summary for Subcatchment S8: Pvmnt to CB3

Runoff = 0.21 cfs @ 11.97 hrs, Volume= 0.012 af, Depth= 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
849	98	Paved parking, HSG B
608	98	Paved parking, HSG B
1,457	98	Weighted Average
1,457		100.00% Impervious Area

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

Subcatchment S8: Pvmnt to CB3

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Type II 24-hr 10 Yr Rainfall=4.50"

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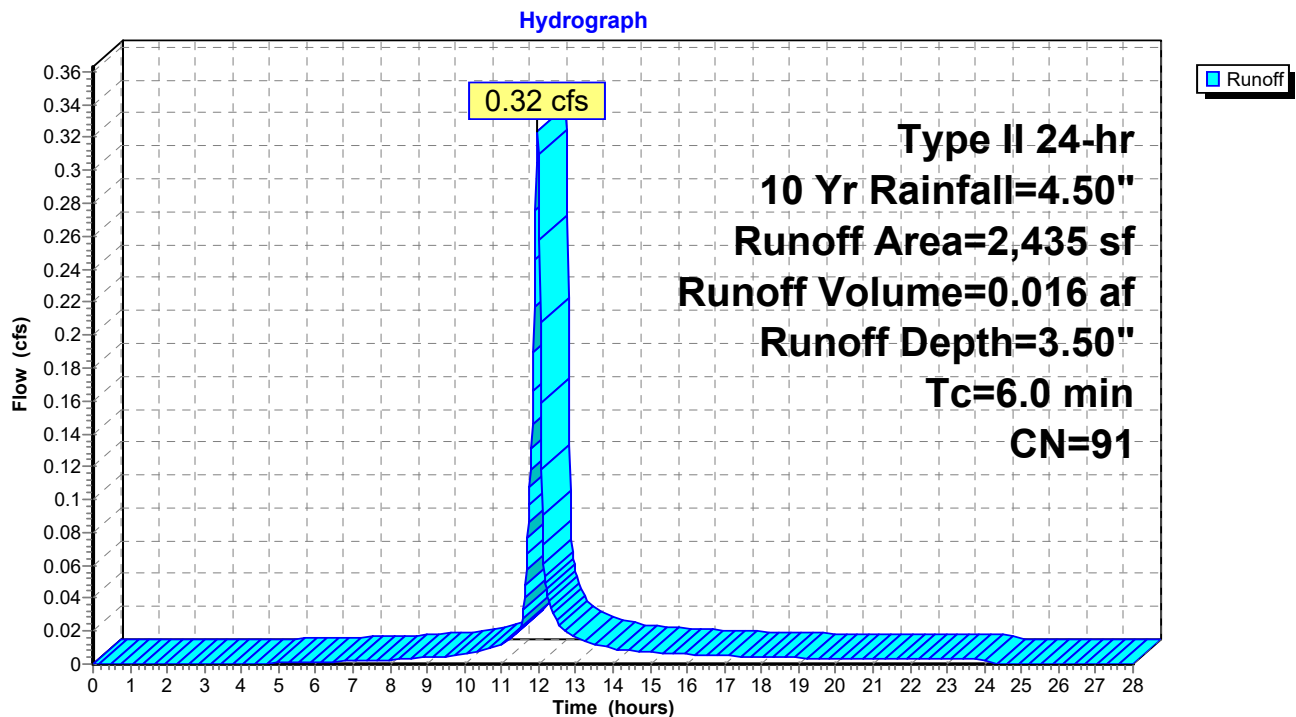
Summary for Subcatchment S9: Drivwy to CB3

Runoff = 0.32 cfs @ 11.97 hrs, Volume= 0.016 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 10 Yr Rainfall=4.50"

Area (sf)	CN	Description
617	98	Paved parking, HSG B
951	79	<50% Grass cover, Poor, HSG B
867	98	Water Surface, HSG B
2,435	91	Weighted Average
951		39.06% Pervious Area
1,484		60.94% Impervious Area

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

Subcatchment S9: Drivwy to CB3

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Type II 24-hr 10 Yr Rainfall=4.50"

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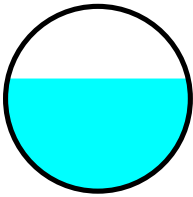
Summary for Reach 1R: 6" PVC

Inflow Area = 0.111 ac, 100.00% Impervious, Inflow Depth = 4.26" for 10 Yr event
Inflow = 0.71 cfs @ 11.97 hrs, Volume= 0.040 af
Outflow = 0.70 cfs @ 11.98 hrs, Volume= 0.040 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Max. Velocity= 5.65 fps, Min. Travel Time= 0.3 min
Avg. Velocity= 1.73 fps, Avg. Travel Time= 1.1 min

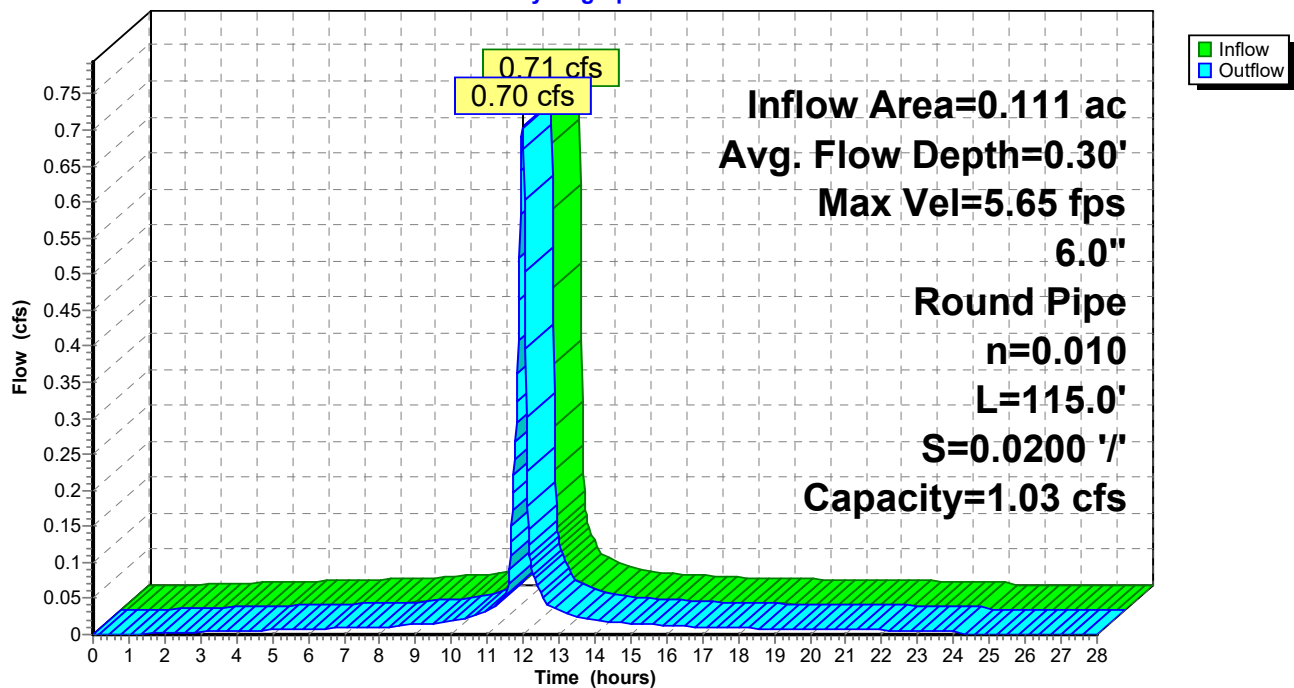
Peak Storage= 14 cf @ 11.97 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.03 cfs

6.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 115.0' Slope= 0.0200 '/'
Inlet Invert= 61.00', Outlet Invert= 58.70'



Reach 1R: 6" PVC

Hydrograph



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Type II 24-hr 10 Yr Rainfall=4.50"

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Summary for Reach 2R: 12" ADS

Inflow Area = 0.055 ac, 61.01% Impervious, Inflow Depth = 3.53" for 10 Yr event
Inflow = 0.30 cfs @ 11.97 hrs, Volume= 0.016 af
Outflow = 0.30 cfs @ 11.98 hrs, Volume= 0.016 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Max. Velocity= 3.81 fps, Min. Travel Time= 0.3 min

Avg. Velocity= 1.09 fps, Avg. Travel Time= 1.1 min

Peak Storage= 6 cf @ 11.97 hrs

Average Depth at Peak Storage= 0.16'

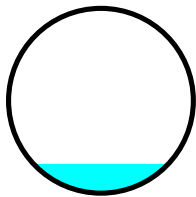
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.63 cfs

12.0" Round Pipe

n= 0.013 Corrugated PE, smooth interior

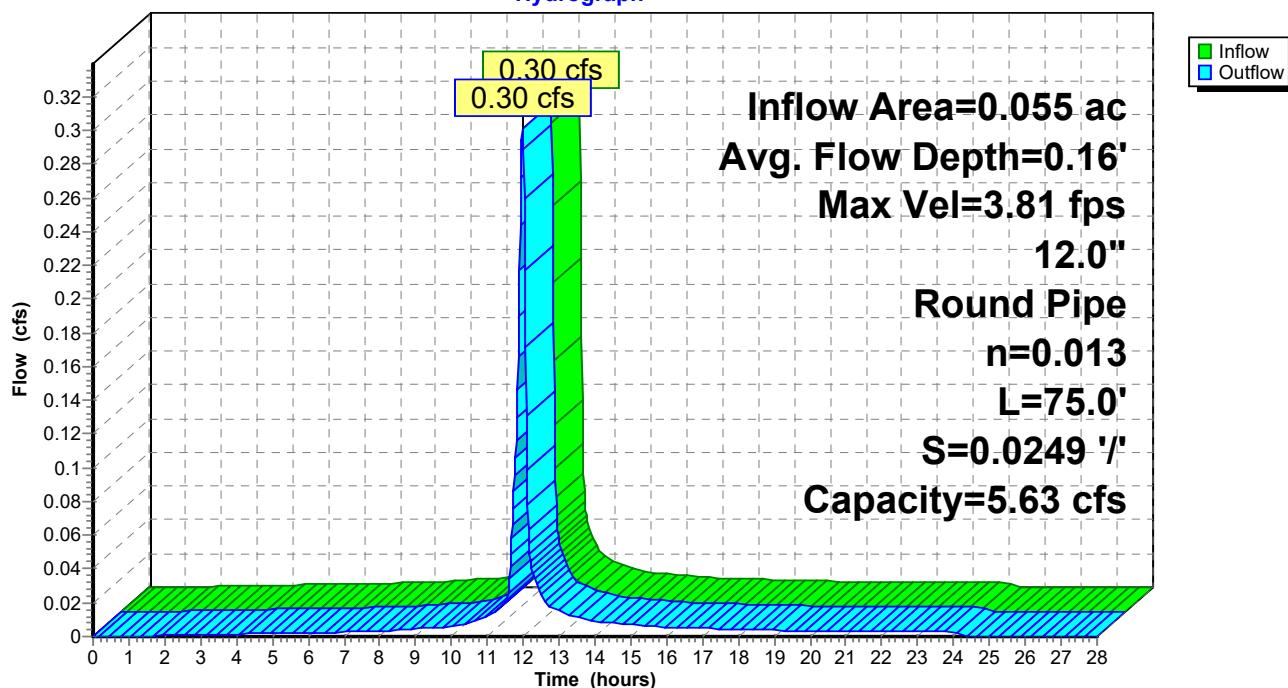
Length= 75.0' Slope= 0.0249 '/

Inlet Invert= 54.95', Outlet Invert= 53.08'



Reach 2R: 12" ADS

Hydrograph



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Type II 24-hr 10 Yr Rainfall=4.50"

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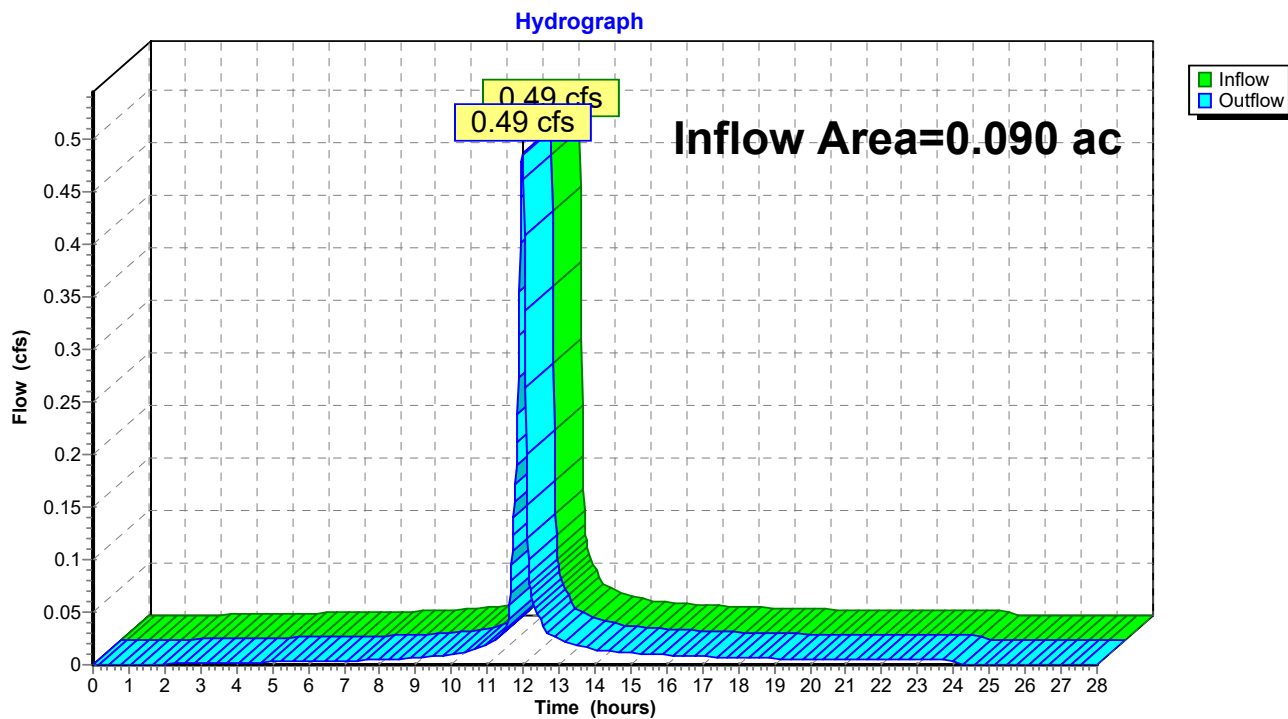
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Summary for Reach 5R: Total Offsite

Inflow Area = 0.090 ac, 55.20% Impervious, Inflow Depth = 3.41" for 10 Yr event
Inflow = 0.49 cfs @ 11.97 hrs, Volume= 0.026 af
Outflow = 0.49 cfs @ 11.97 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 5R: Total Offsite



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Type II 24-hr 10 Yr Rainfall=4.50"

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Summary for Pond P1A: Roof INF

Inflow Area = 0.111 ac, 100.00% Impervious, Inflow Depth = 4.26" for 10 Yr event
 Inflow = 0.70 cfs @ 11.98 hrs, Volume= 0.040 af
 Outflow = 0.02 cfs @ 11.10 hrs, Volume= 0.034 af, Atten= 97%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 11.10 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 59.23' @ 13.94 hrs Surf.Area= 588 sf Storage= 926 cf

Plug-Flow detention time= 369.7 min calculated for 0.034 af (86% of inflow)
 Center-of-Mass det. time= 304.5 min (1,051.3 - 746.9)

Volume	Invert	Avail.Storage	Storage Description
#1	57.30'	1,423 cf	ISI Rainstore3 12 x 38 Inside= 39.4"W x 47.2"H => 12.14 sf x 3.28'L = 39.8 cf Outside= 39.4"W x 47.2"H => 12.92 sf x 3.28'L = 42.4 cf 1,610 cf Overall x 94.0% Voids
#2	56.80'	376 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 940 cf Overall x 40.0% Voids
		1,799 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.80	451	0	0
57.29	451	221	221
57.30	179	3	224
61.30	179	716	940

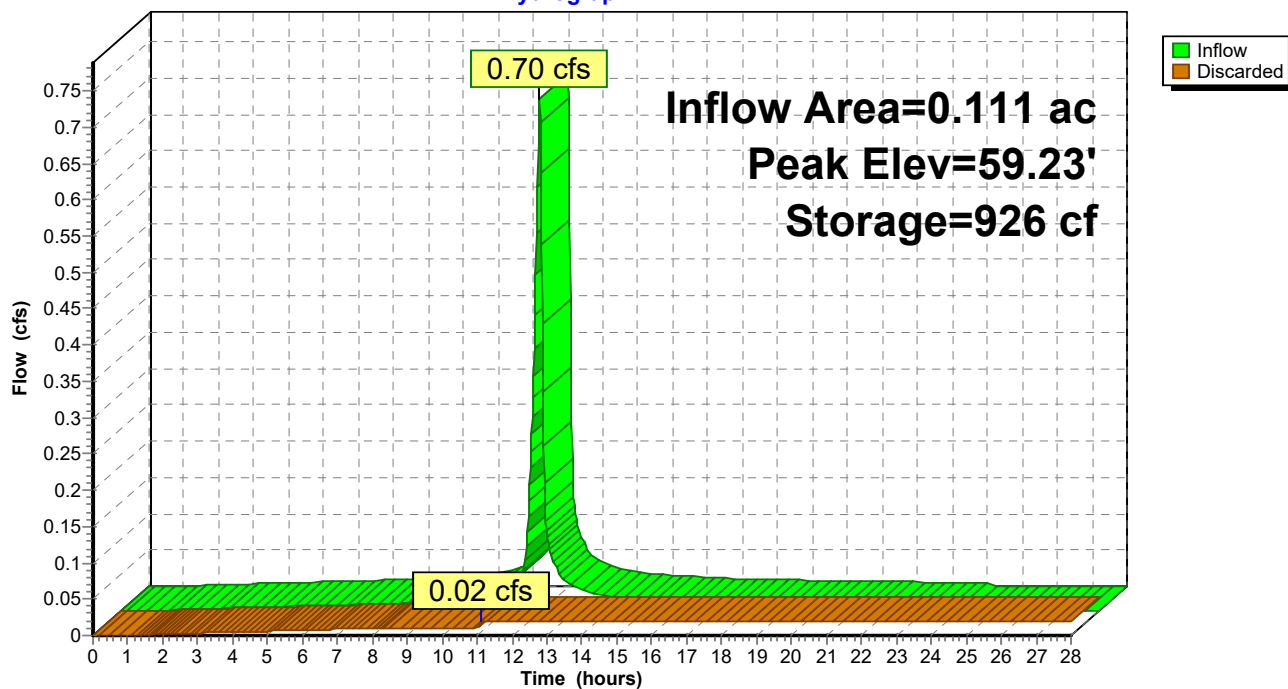
Device	Routing	Invert	Outlet Devices
#1	Discarded	56.80'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.02 cfs @ 11.10 hrs HW=57.30' (Free Discharge)

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

Pond P1A: Roof INF

Hydrograph



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Type II 24-hr 10 Yr Rainfall=4.50"

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Summary for Pond P1B: Roof INF

Inflow Area = 0.082 ac, 100.00% Impervious, Inflow Depth = 4.26" for 10 Yr event
 Inflow = 0.52 cfs @ 11.97 hrs, Volume= 0.029 af
 Outflow = 0.02 cfs @ 10.94 hrs, Volume= 0.029 af, Atten= 96%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 10.94 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 59.37' @ 13.08 hrs Surf.Area= 651 sf Storage= 567 cf

Plug-Flow detention time= 193.7 min calculated for 0.029 af (100% of inflow)
 Center-of-Mass det. time= 193.6 min (939.3 - 745.8)

Volume	Invert	Avail.Storage	Storage Description
#1	58.30'	843 cf	ISI Rainstore3 6 x 45 Inside= 39.4"W x 23.6"H => 6.07 sf x 3.28'L = 19.9 cf Outside= 39.4"W x 23.6"H => 6.46 sf x 3.28'L = 21.2 cf 953 cf Overall x 94.0% Voids
#2	58.20'	182 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 454 cf Overall x 40.0% Voids
		1,024 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.20	487	0	0
58.44	487	117	117
58.45	167	3	120
60.45	167	334	454

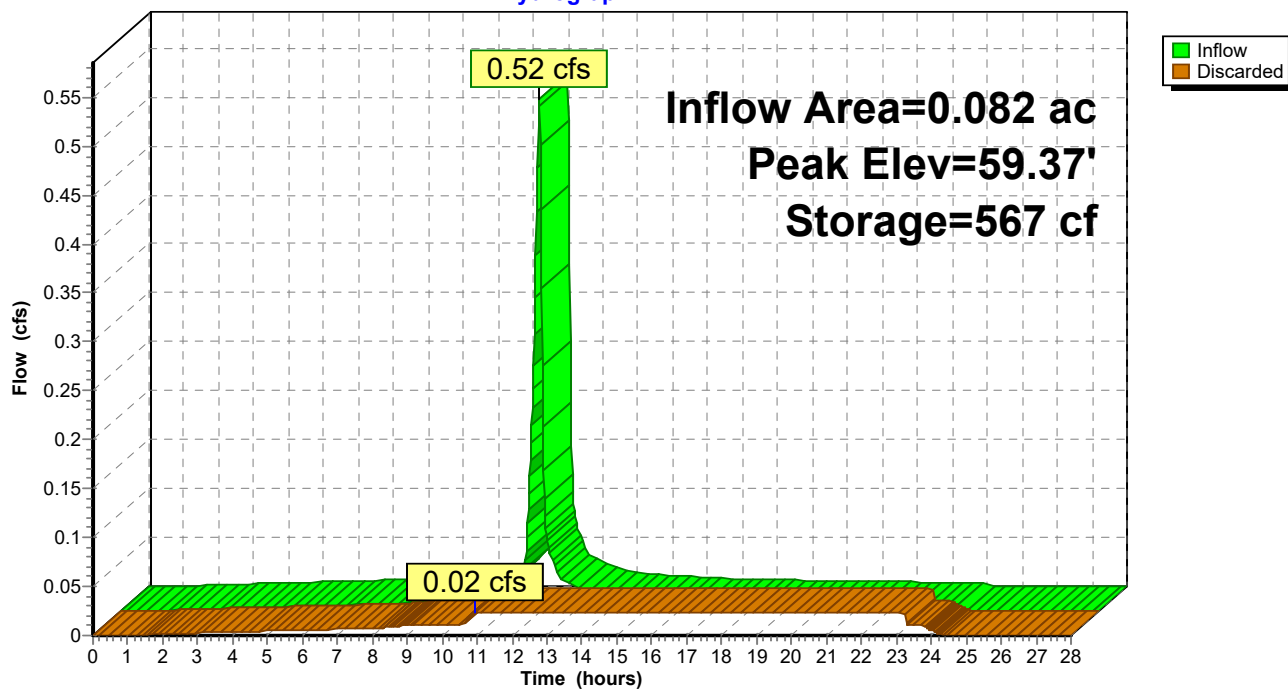
Device	Routing	Invert	Outlet Devices
#1	Discarded	58.20'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.02 cfs @ 10.94 hrs HW=58.30' (Free Discharge)

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

Pond P1B: Roof INF

Hydrograph



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Type II 24-hr 10 Yr Rainfall=4.50"

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Summary for Pond P2: Retention

Inflow Area = 0.263 ac, 77.23% Impervious, Inflow Depth = 4.26" for 10 Yr event
 Inflow = 1.68 cfs @ 11.97 hrs, Volume= 0.093 af
 Outflow = 0.04 cfs @ 14.49 hrs, Volume= 0.069 af, Atten= 98%, Lag= 151.2 min
 Discarded = 0.04 cfs @ 14.49 hrs, Volume= 0.069 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 59.47' @ 14.49 hrs Surf.Area= 1,727 sf Storage= 2,247 cf

Plug-Flow detention time= 362.8 min calculated for 0.069 af (74% of inflow)
 Center-of-Mass det. time= 271.3 min (1,017.1 - 745.8)

Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	3,681 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

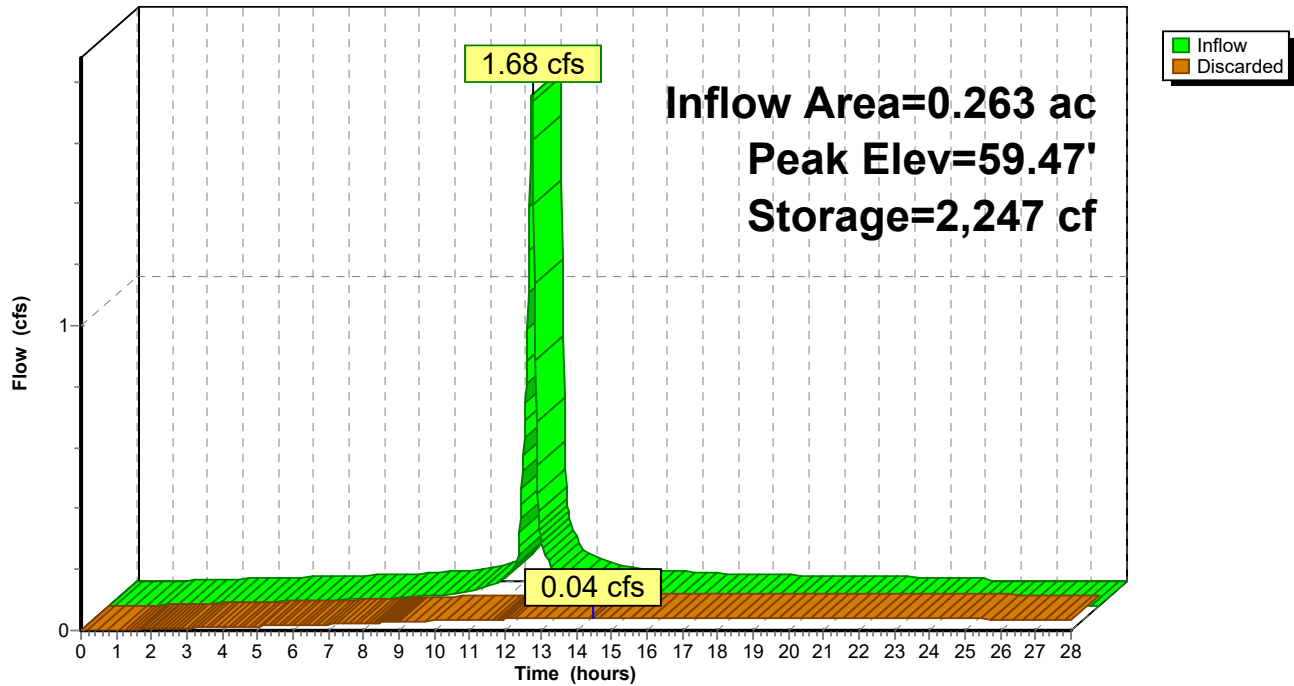
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	1,329	0	0
59.00	1,596	1,463	1,463
60.00	1,873	1,735	3,197
60.25	1,998	484	3,681

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.00'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.04 cfs @ 14.49 hrs HW=59.47' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P2: Retention

Hydrograph



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Type II 24-hr 10 Yr Rainfall=4.50"

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Summary for Pond P3: SE Inf

Inflow Area = 0.233 ac, 89.96% Impervious, Inflow Depth = 4.04" for 10 Yr event
 Inflow = 1.46 cfs @ 11.97 hrs, Volume= 0.078 af
 Outflow = 0.07 cfs @ 11.44 hrs, Volume= 0.078 af, Atten= 95%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 11.44 hrs, Volume= 0.078 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 58.12' @ 13.05 hrs Surf.Area= 1,801 sf Storage= 1,633 cf

Plug-Flow detention time= 206.4 min calculated for 0.078 af (100% of inflow)
 Center-of-Mass det. time= 206.4 min (967.6 - 761.3)

Volume	Invert	Avail.Storage	Storage Description
#1	57.10'	2,621 cf	ISI Rainstore3 6 x 140 Inside= 39.4"W x 23.6"H => 6.07 sf x 3.28'L = 19.9 cf Outside= 39.4"W x 23.6"H => 6.46 sf x 3.28'L = 21.2 cf 2,966 cf Overall x 94.0% Voids
#2	56.80'	389 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 973 cf Overall x 40.0% Voids
		3,010 cf	Total Available Storage

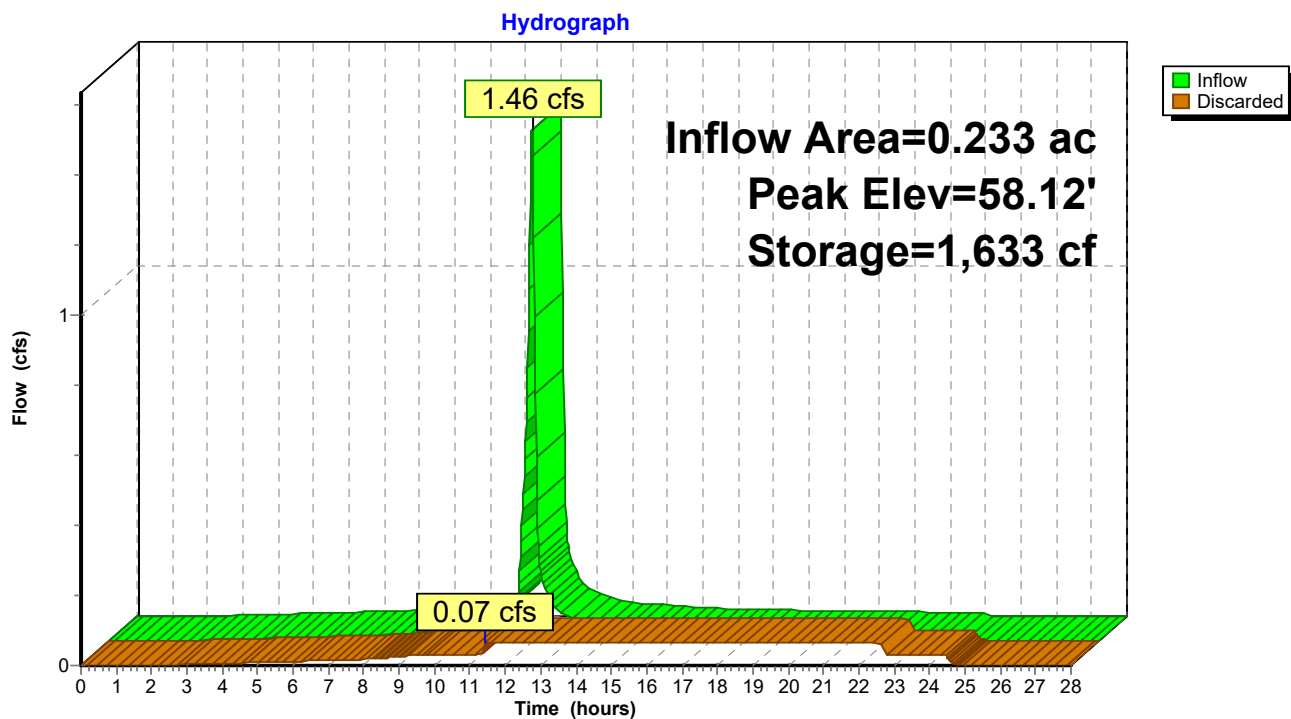
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.80	1,301	0	0
57.09	1,301	377	377
57.10	294	8	385
59.10	294	588	973

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.80'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.07 cfs @ 11.44 hrs HW=57.10' (Free Discharge)

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

Pond P3: SE Inf



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Type II 24-hr 10 Yr Rainfall=4.50"

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Summary for Pond P4: SW Inf

Inflow Area = 0.228 ac, 98.71% Impervious, Inflow Depth = 4.26" for 10 Yr event
 Inflow = 1.45 cfs @ 11.97 hrs, Volume= 0.081 af
 Outflow = 0.07 cfs @ 11.12 hrs, Volume= 0.081 af, Atten= 95%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 11.12 hrs, Volume= 0.081 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 57.38' @ 12.92 hrs Surf.Area= 1,972 sf Storage= 1,546 cf

Plug-Flow detention time= 165.7 min calculated for 0.081 af (100% of inflow)
 Center-of-Mass det. time= 165.5 min (911.3 - 745.8)

Volume	Invert	Avail.Storage	Storage Description
#1	56.45'	2,808 cf	ISI Rainstore3 6 x 150 Inside= 39.4"W x 23.6"H => 6.07 sf x 3.28'L = 19.9 cf Outside= 39.4"W x 23.6"H => 6.46 sf x 3.28'L = 21.2 cf 3,178 cf Overall x 94.0% Voids
#2	56.30'	369 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 923 cf Overall x 40.0% Voids
		3,177 cf	Total Available Storage

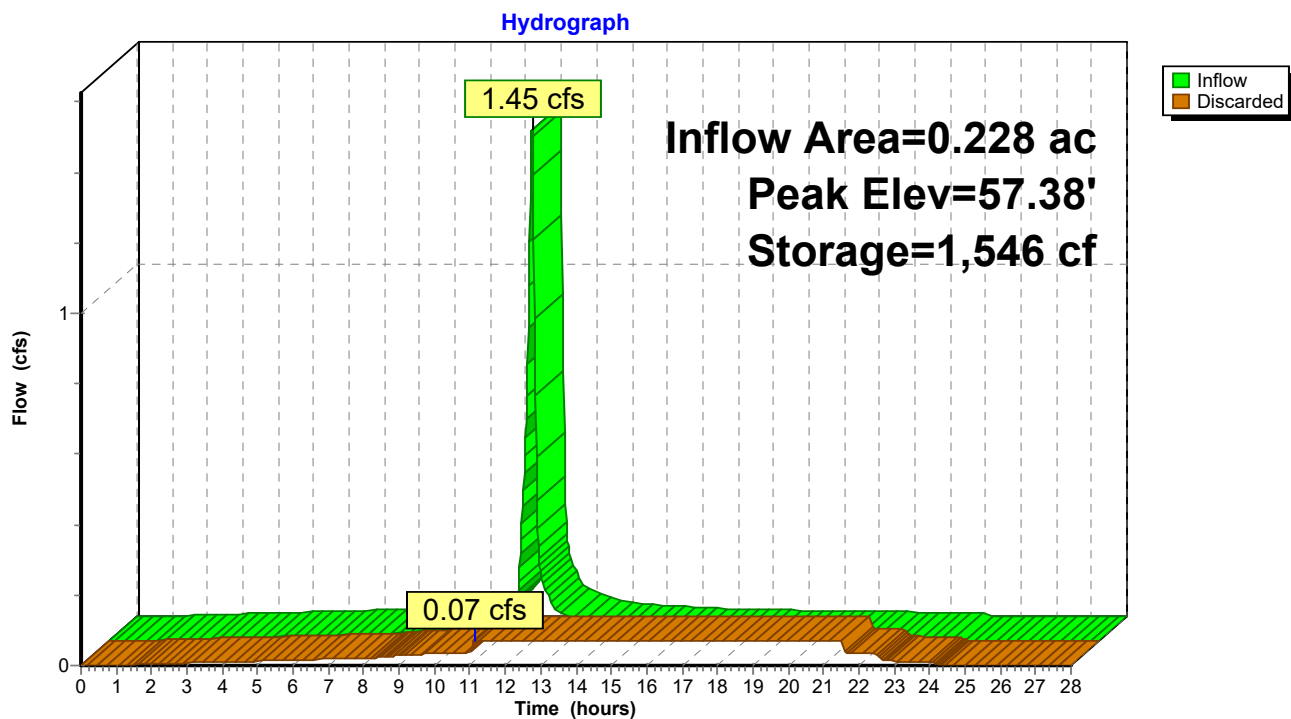
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.30	1,426	0	0
56.44	1,426	200	200
56.45	357	9	209
58.45	357	714	923

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.30'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.07 cfs @ 11.12 hrs HW=56.45' (Free Discharge)

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

Pond P4: SW Inf



Byfield 23 Central Post

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Type II 24-hr 10 Yr Rainfall=4.50"

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Summary for Pond P5: Retention

Inflow Area = 0.066 ac, 66.92% Impervious, Inflow Depth = 3.62" for 10 Yr event
 Inflow = 0.39 cfs @ 11.97 hrs, Volume= 0.020 af
 Outflow = 0.02 cfs @ 13.04 hrs, Volume= 0.020 af, Atten= 95%, Lag= 64.3 min
 Discarded = 0.02 cfs @ 13.04 hrs, Volume= 0.020 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 57.62' @ 13.04 hrs Surf.Area= 772 sf Storage= 410 cf

Plug-Flow detention time= 206.3 min calculated for 0.020 af (100% of inflow)
 Center-of-Mass det. time= 206.3 min (985.9 - 779.7)

Volume	Invert	Avail.Storage	Storage Description
#1	57.00'	1,230 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
57.00	557	0	0
58.00	905	731	731
58.50	1,092	499	1,230

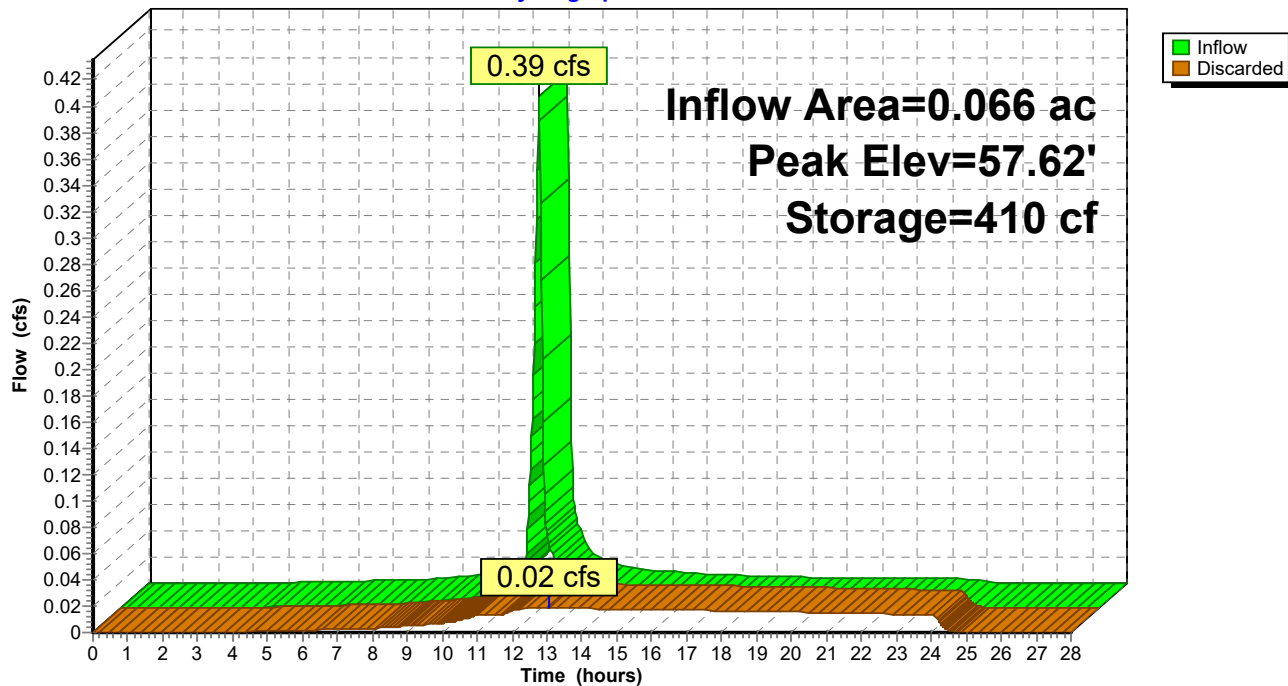
Device	Routing	Invert	Outlet Devices
#1	Discarded	57.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 13.04 hrs HW=57.62' (Free Discharge)

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

Pond P5: Retention

Hydrograph



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Time span=0.00-28.00 hrs, dt=0.02 hrs, 1401 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Runoff to Street	Runoff Area=794 sf 89.04% Impervious Runoff Depth=6.03" Tc=6.0 min CN=96 Runoff=0.17 cfs 0.009 af
SubcatchmentS1A: Store Roof	Runoff Area=4,845 sf 100.00% Impervious Runoff Depth=6.26" Tc=6.0 min CN=98 Runoff=1.03 cfs 0.058 af
SubcatchmentS1B: Canopy Roof	Runoff Area=3,568 sf 100.00% Impervious Runoff Depth=6.26" Tc=6.0 min CN=98 Runoff=0.76 cfs 0.043 af
SubcatchmentS2: Rear of Bldg	Runoff Area=11,460 sf 77.23% Impervious Runoff Depth=6.26" Tc=6.0 min CN=98 Runoff=2.43 cfs 0.137 af
SubcatchmentS3: CB1 Area	Runoff Area=10,158 sf 89.96% Impervious Runoff Depth=6.03" Tc=6.0 min CN=96 Runoff=2.14 cfs 0.117 af
SubcatchmentS4: CB2 Area	Runoff Area=9,914 sf 98.71% Impervious Runoff Depth=6.26" Tc=6.0 min CN=98 Runoff=2.10 cfs 0.119 af
SubcatchmentS5: Driveway Islld	Runoff Area=440 sf 100.00% Impervious Runoff Depth=6.26" Tc=6.0 min CN=98 Runoff=0.09 cfs 0.005 af
SubcatchmentS6: NW offsite	Runoff Area=738 sf 0.00% Impervious Runoff Depth=4.13" Tc=6.0 min CN=79 Runoff=0.12 cfs 0.006 af
SubcatchmentS7: West Offsite	Runoff Area=931 sf 0.00% Impervious Runoff Depth=4.13" Tc=6.0 min CN=79 Runoff=0.15 cfs 0.007 af
SubcatchmentS8: Pvmnt to CB3	Runoff Area=1,457 sf 100.00% Impervious Runoff Depth=6.26" Tc=6.0 min CN=98 Runoff=0.31 cfs 0.017 af
SubcatchmentS9: Drivwy to CB3	Runoff Area=2,435 sf 60.94% Impervious Runoff Depth=5.45" Tc=6.0 min CN=91 Runoff=0.49 cfs 0.025 af
Reach 1R: 6" PVC	Avg. Flow Depth=0.41' Max Vel=5.99 fps Inflow=1.03 cfs 0.058 af 6.0" Round Pipe n=0.010 L=115.0' S=0.0200 ' /' Capacity=1.03 cfs Outflow=1.02 cfs 0.058 af
Reach 2R: 12" ADS	Avg. Flow Depth=0.19' Max Vel=4.32 fps Inflow=0.46 cfs 0.025 af 12.0" Round Pipe n=0.013 L=75.0' S=0.0249 ' /' Capacity=5.63 cfs Outflow=0.46 cfs 0.025 af
Reach 5R: Total Offsite	Inflow=0.75 cfs 0.040 af Outflow=0.75 cfs 0.040 af
Pond P1A: Roof INF	Peak Elev=60.53' Storage=1,488 cf Inflow=1.02 cfs 0.058 af Outflow=0.02 cfs 0.037 af
Pond P1B: Roof INF	Peak Elev=60.08' Storage=919 cf Inflow=0.76 cfs 0.043 af Outflow=0.02 cfs 0.040 af

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Type II 24-hr 100 Yr Rainfall=6.50"

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Pond P2: RetentionPeak Elev=60.21' Storage=3,592 cf Inflow=2.43 cfs 0.137 af
Outflow=0.05 cfs 0.082 af**Pond P3: SE Inf**Peak Elev=58.82' Storage=2,651 cf Inflow=2.14 cfs 0.117 af
Outflow=0.07 cfs 0.110 af**Pond P4: SW Inf**Peak Elev=57.98' Storage=2,487 cf Inflow=2.10 cfs 0.119 af
Outflow=0.07 cfs 0.119 af**Pond P5: Retention**Peak Elev=57.95' Storage=687 cf Inflow=0.58 cfs 0.031 af
Outflow=0.02 cfs 0.029 af**Total Runoff Area = 1.073 ac Runoff Volume = 0.544 af Average Runoff Depth = 6.09"**
13.83% Pervious = 0.148 ac 86.17% Impervious = 0.925 ac

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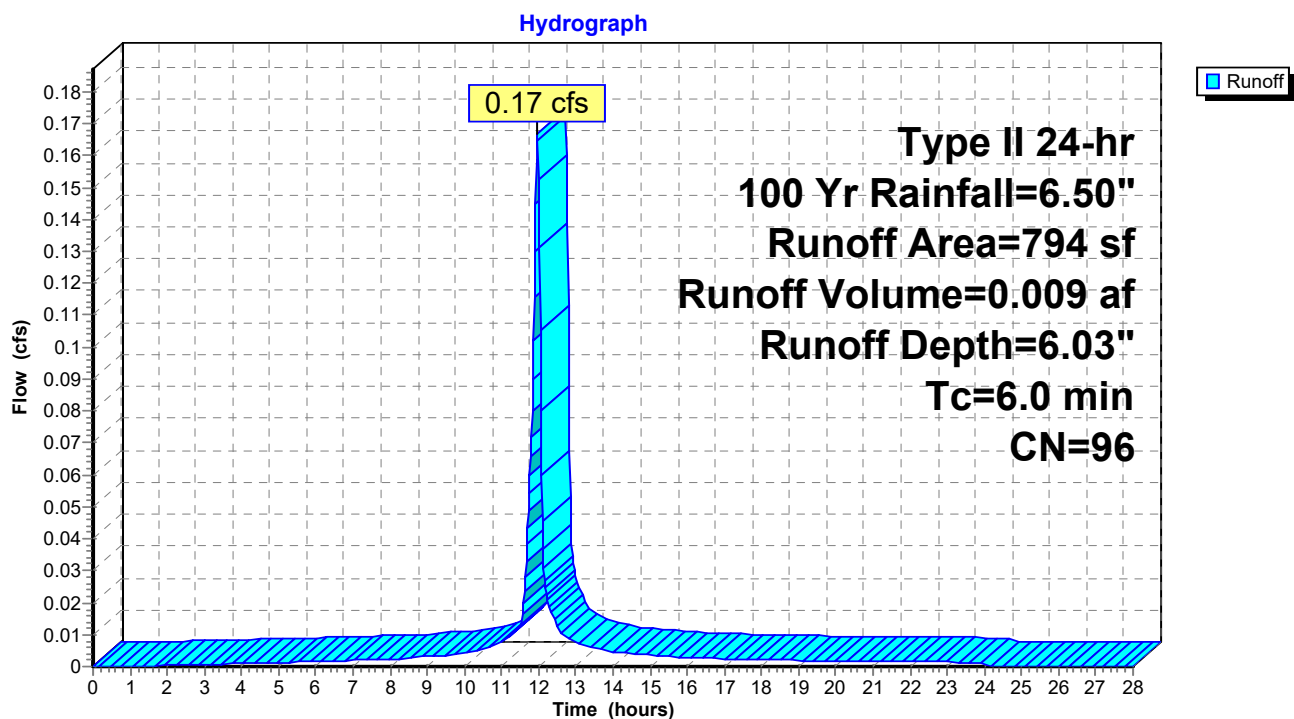
Summary for Subcatchment S10: Runoff to Street

Runoff = 0.17 cfs @ 11.97 hrs, Volume= 0.009 af, Depth= 6.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
707	98	Paved parking, HSG B
87	79	<50% Grass cover, Poor, HSG B
794	96	Weighted Average
87		10.96% Pervious Area
707		89.04% Impervious Area

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

Subcatchment S10: Runoff to Street

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Type II 24-hr 100 Yr Rainfall=6.50"

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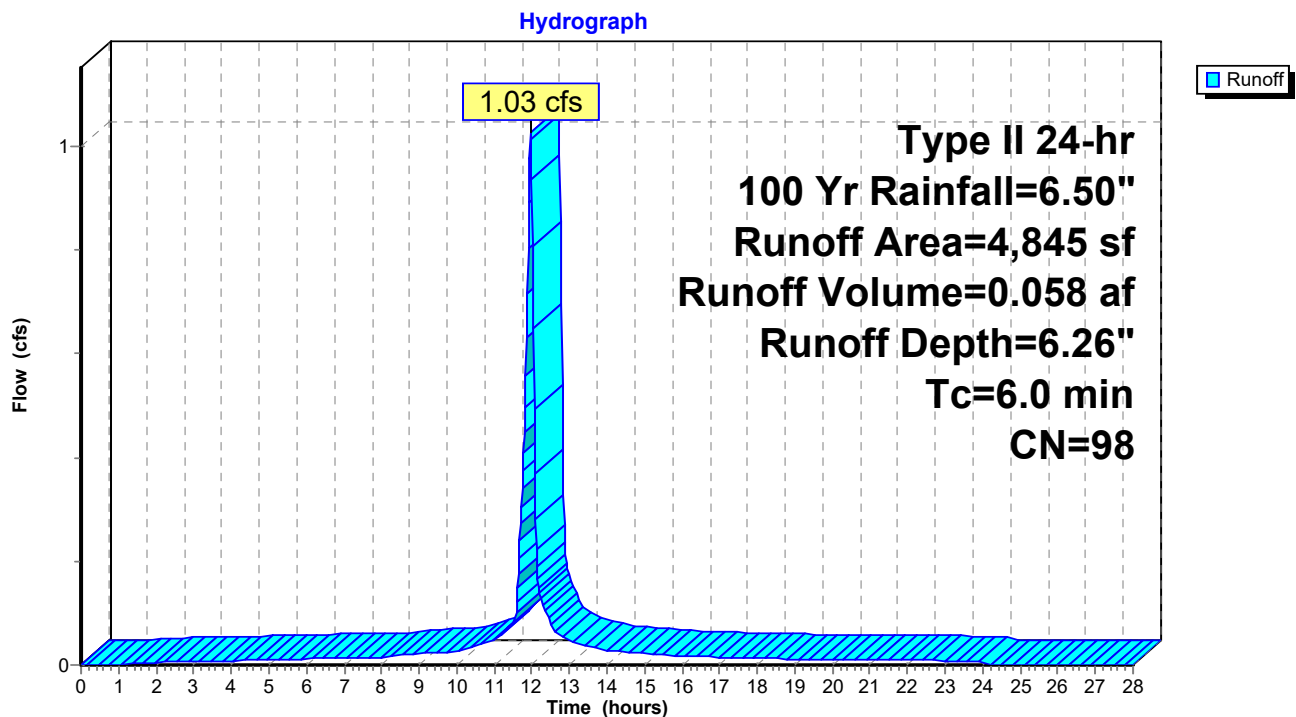
Summary for Subcatchment S1A: Store Roof

Runoff = 1.03 cfs @ 11.97 hrs, Volume= 0.058 af, Depth= 6.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
4,845	98	Roofs, HSG B
4,845		100.00% Impervious Area

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

Subcatchment S1A: Store Roof

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Type II 24-hr 100 Yr Rainfall=6.50"

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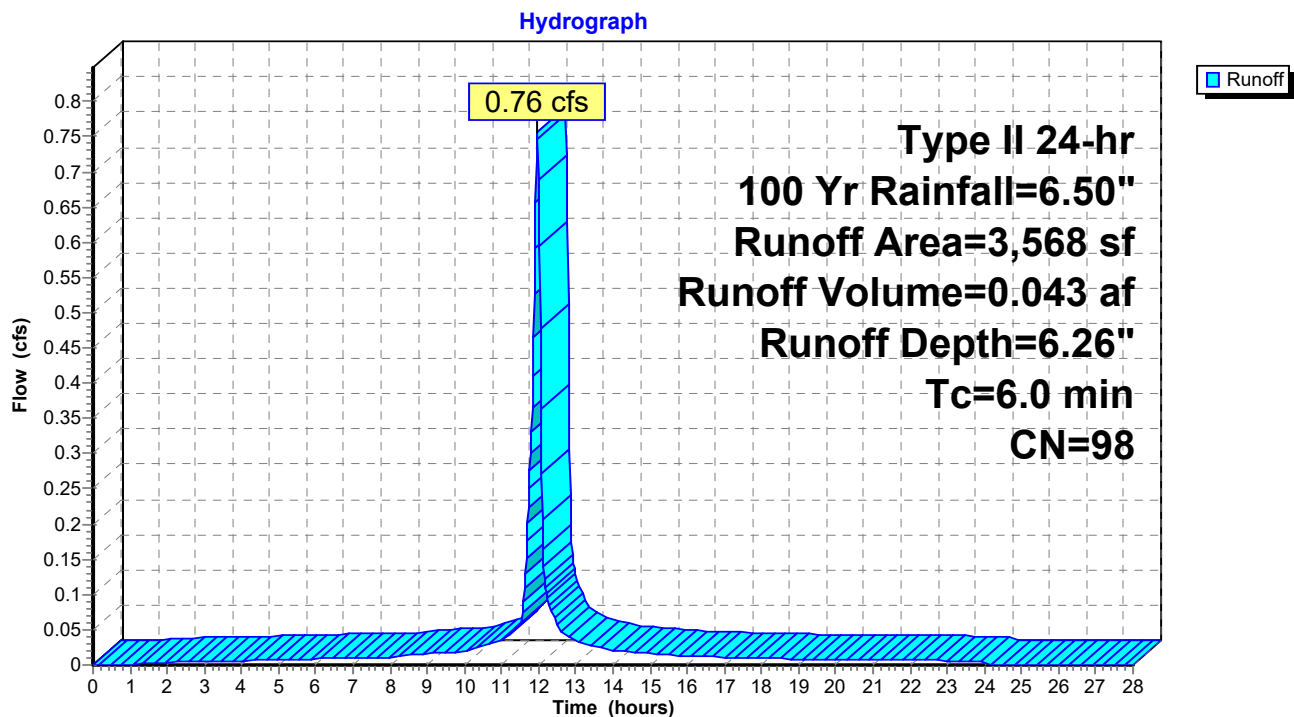
Summary for Subcatchment S1B: Canopy Roof

Runoff = 0.76 cfs @ 11.97 hrs, Volume= 0.043 af, Depth= 6.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
3,568	98	Roofs, HSG B
3,568		100.00% Impervious Area

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

Subcatchment S1B: Canopy Roof

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Type II 24-hr 100 Yr Rainfall=6.50"

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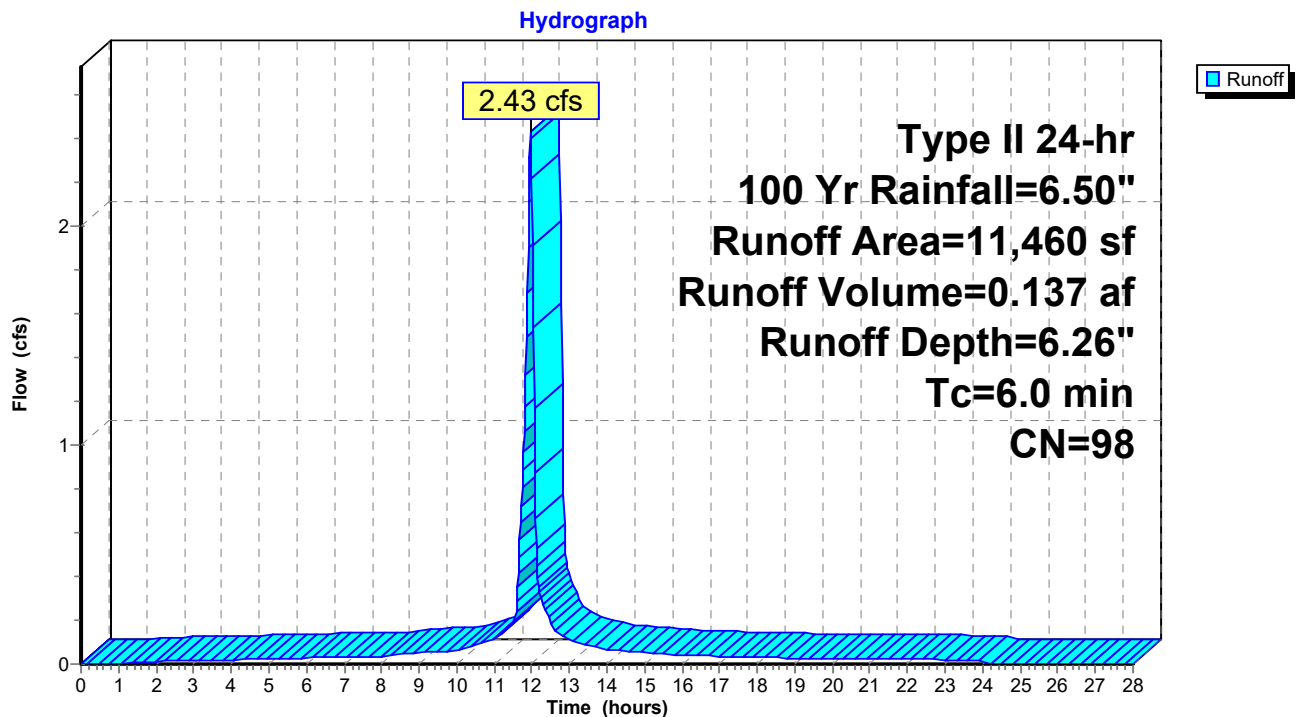
Summary for Subcatchment S2: Rear of Bldg

Runoff = 2.43 cfs @ 11.97 hrs, Volume= 0.137 af, Depth= 6.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
2,370	98	Water Surface, 0% imp, HSG B
239	79	<50% Grass cover, Poor, HSG B
8,851	98	Paved parking, HSG B
11,460	98	Weighted Average
2,609		22.77% Pervious Area
8,851		77.23% Impervious Area

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

Subcatchment S2: Rear of Bldg

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Type II 24-hr 100 Yr Rainfall=6.50"

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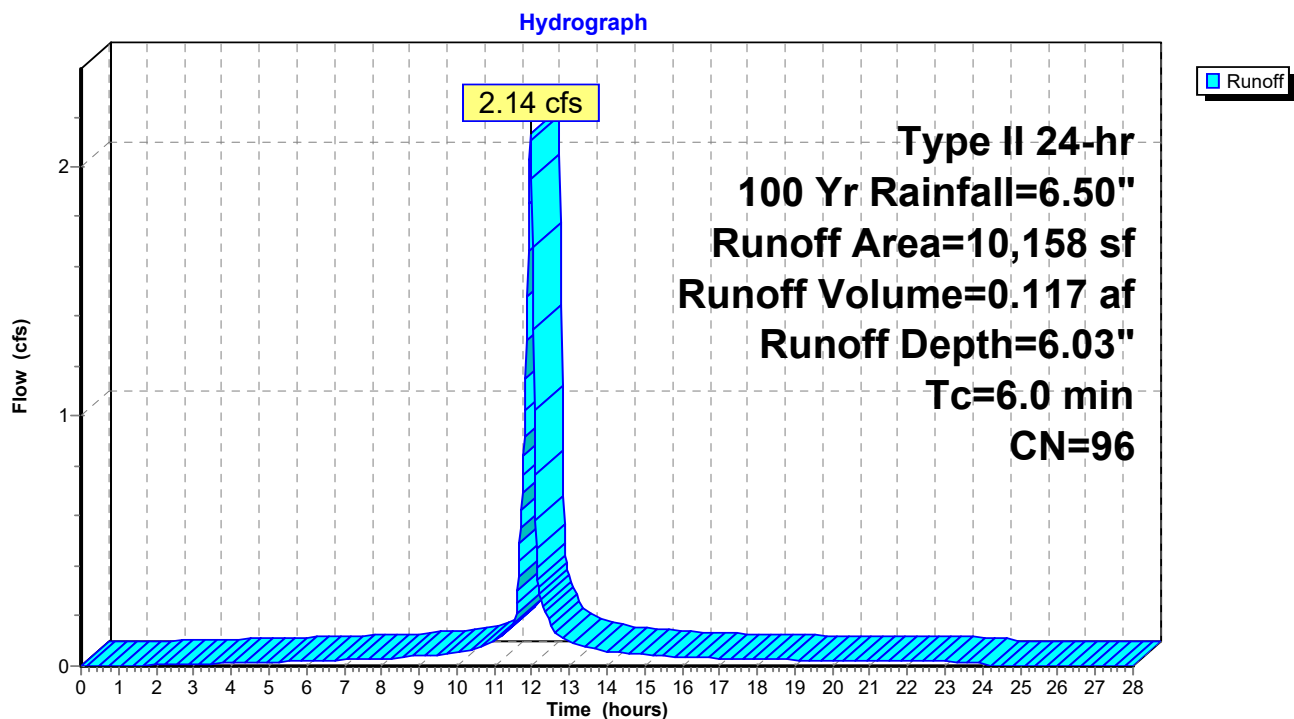
Summary for Subcatchment S3: CB1 Area

Runoff = 2.14 cfs @ 11.97 hrs, Volume= 0.117 af, Depth= 6.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
1,020	79	<50% Grass cover, Poor, HSG B
9,091	98	Paved parking, HSG B
47	98	Paved parking, HSG B
10,158	96	Weighted Average
1,020		10.04% Pervious Area
9,138		89.96% Impervious Area

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

Subcatchment S3: CB1 Area

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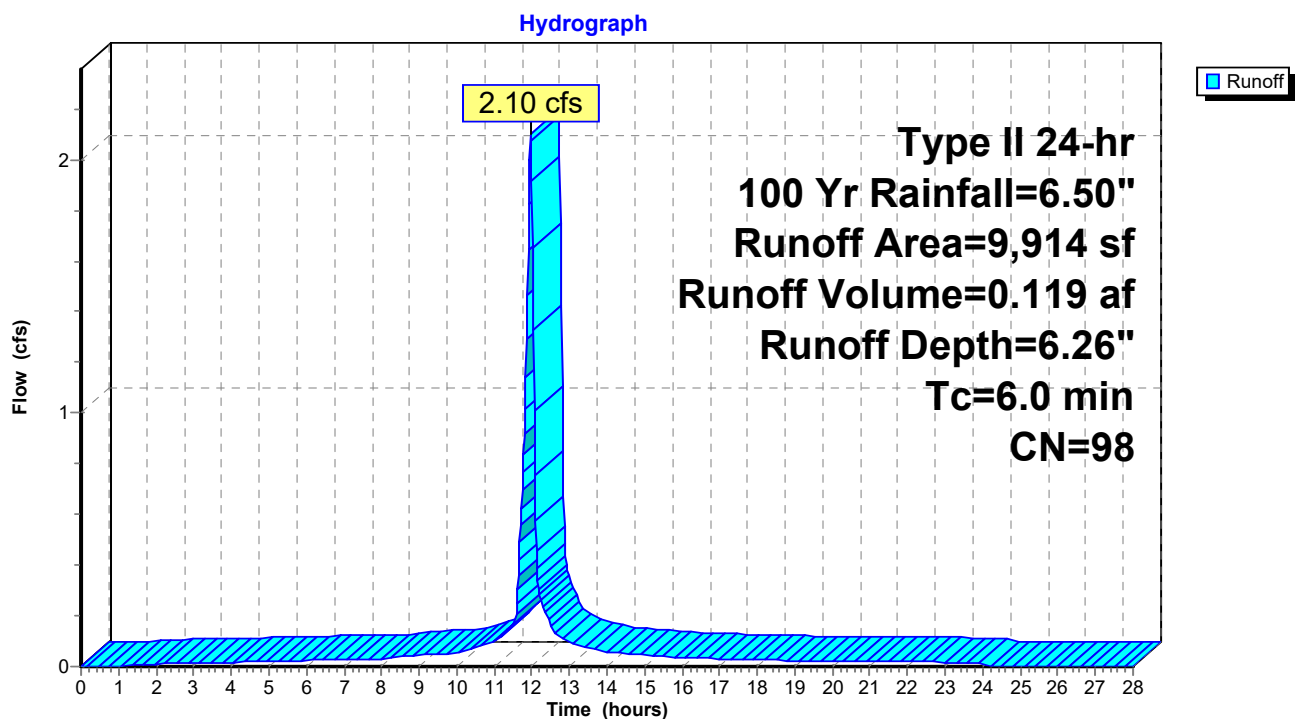
Summary for Subcatchment S4: CB2 Area

Runoff = 2.10 cfs @ 11.97 hrs, Volume= 0.119 af, Depth= 6.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
128	79	<50% Grass cover, Poor, HSG B
9,786	98	Paved parking, HSG B
9,914	98	Weighted Average
128		1.29% Pervious Area
9,786		98.71% Impervious Area

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

Subcatchment S4: CB2 Area

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Type II 24-hr 100 Yr Rainfall=6.50"

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Summary for Subcatchment S5: Driveway Isld

Runoff = 0.09 cfs @ 11.97 hrs, Volume= 0.005 af, Depth= 6.26"

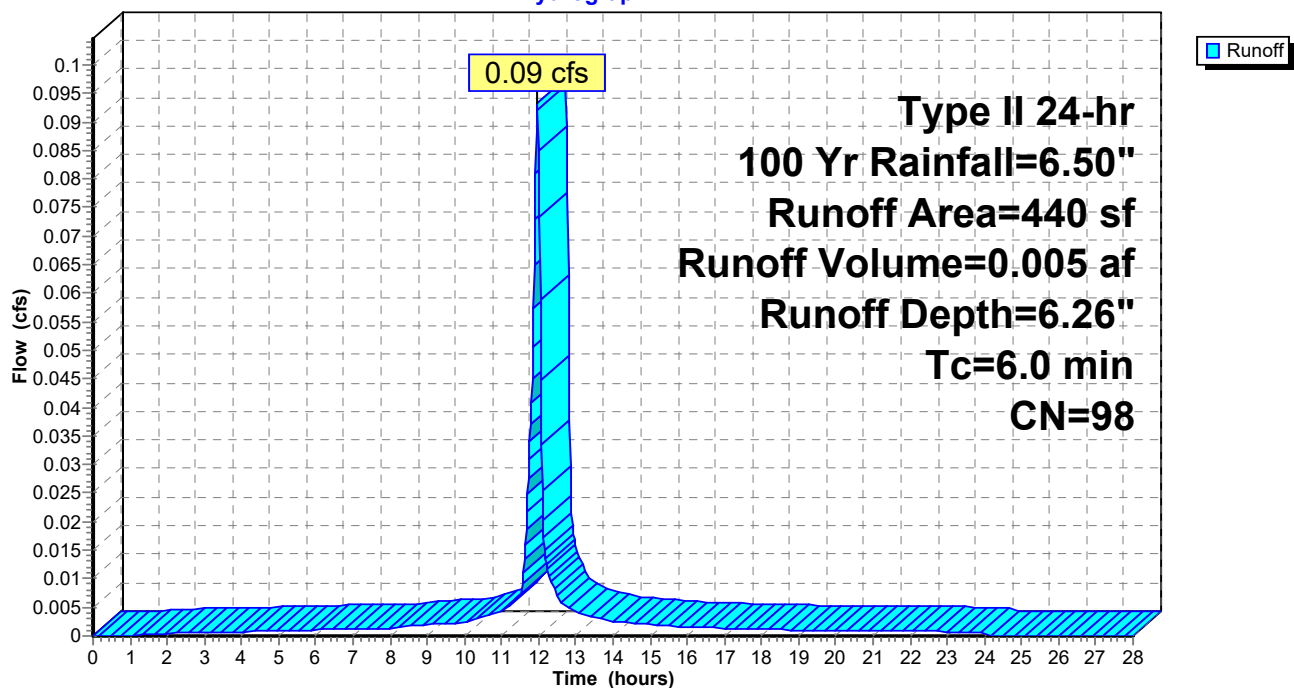
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
440	98	Water Surface, HSG B
440		100.00% Impervious Area

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

Subcatchment S5: Driveway Isld

Hydrograph



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Type II 24-hr 100 Yr Rainfall=6.50"

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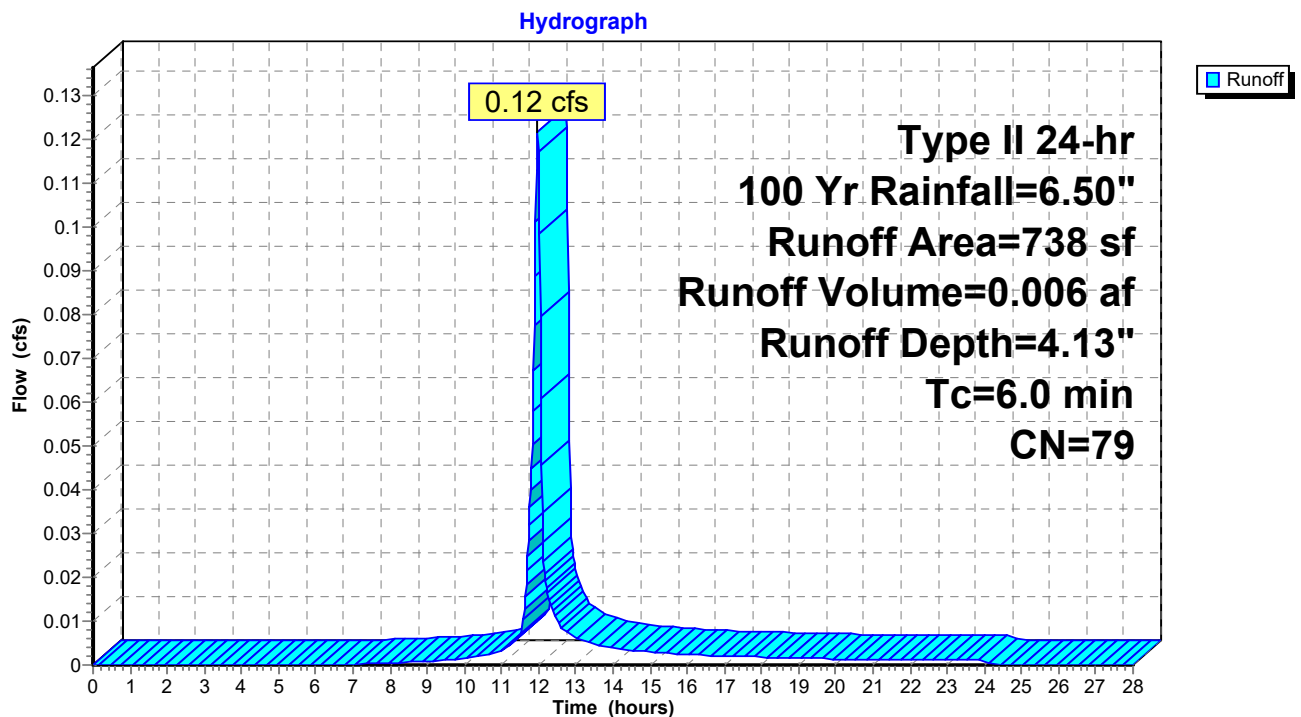
Summary for Subcatchment S6: NW offsite

Runoff = 0.12 cfs @ 11.97 hrs, Volume= 0.006 af, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
738	79	<50% Grass cover, Poor, HSG B
738		100.00% Pervious Area

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

Subcatchment S6: NW offsite

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Type II 24-hr 100 Yr Rainfall=6.50"

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Summary for Subcatchment S7: West Offsite

Runoff = 0.15 cfs @ 11.97 hrs, Volume= 0.007 af, Depth= 4.13"

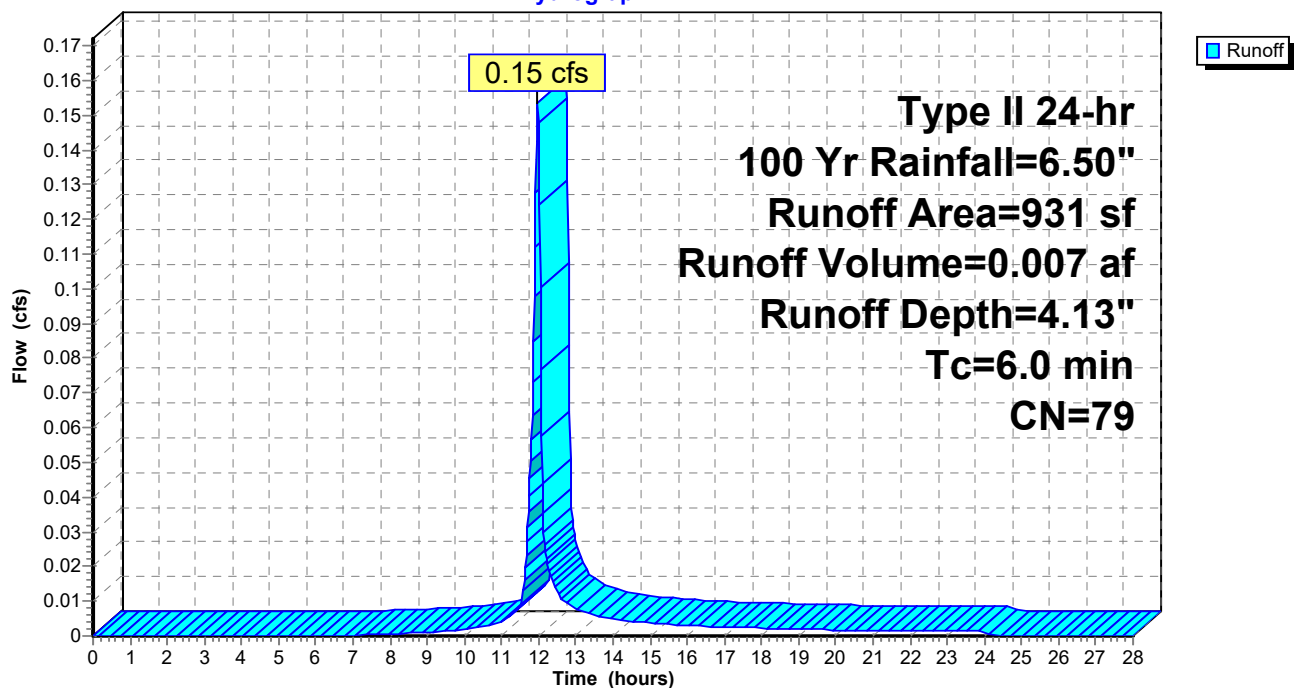
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
931	79	<50% Grass cover, Poor, HSG B
931		100.00% Pervious Area

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

Subcatchment S7: West Offsite

Hydrograph



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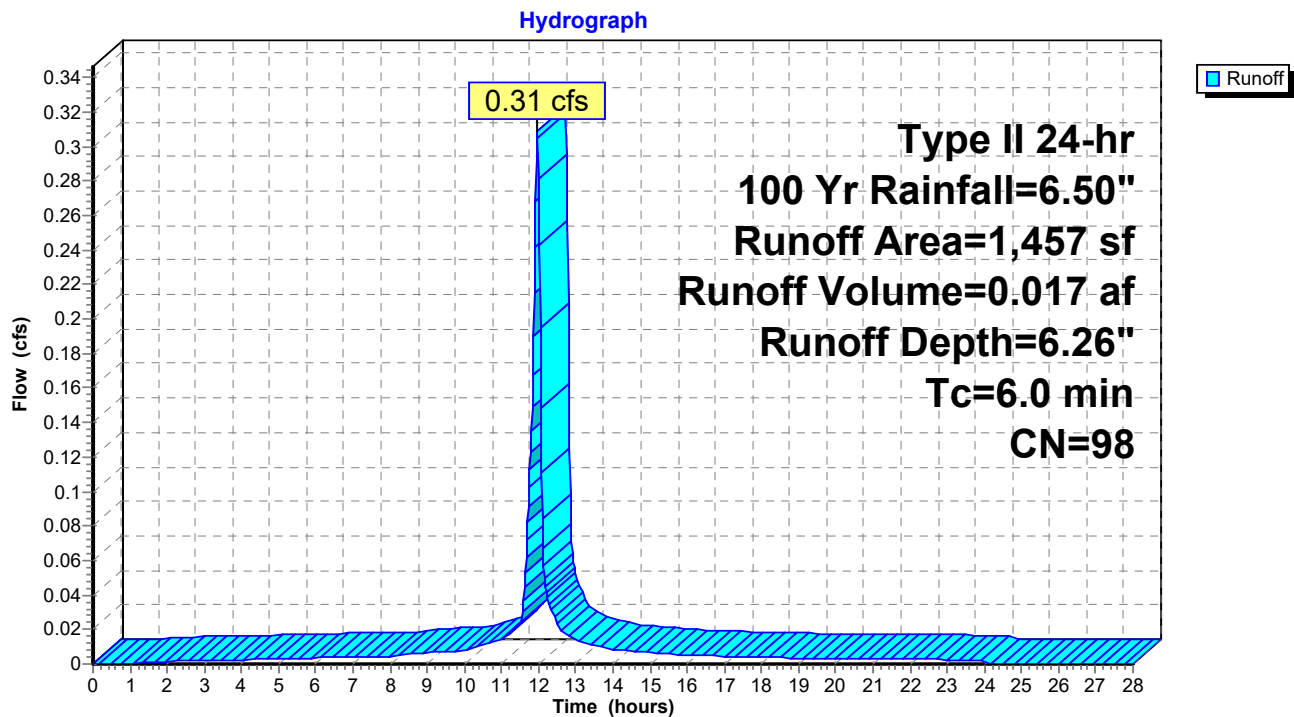
Summary for Subcatchment S8: Pvmnt to CB3

Runoff = 0.31 cfs @ 11.97 hrs, Volume= 0.017 af, Depth= 6.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
849	98	Paved parking, HSG B
608	98	Paved parking, HSG B
1,457	98	Weighted Average
1,457		100.00% Impervious Area

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

Subcatchment S8: Pvmnt to CB3

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Type II 24-hr 100 Yr Rainfall=6.50"

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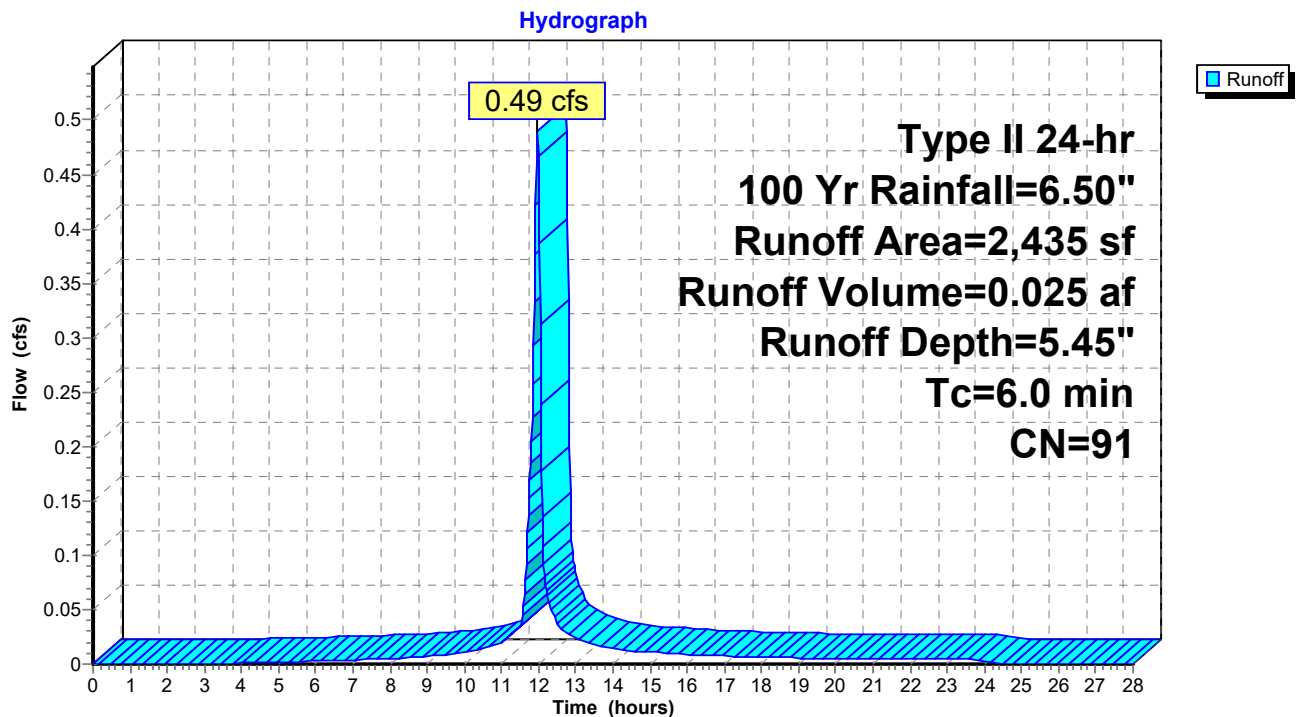
Summary for Subcatchment S9: Drivwy to CB3

Runoff = 0.49 cfs @ 11.97 hrs, Volume= 0.025 af, Depth= 5.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Type II 24-hr 100 Yr Rainfall=6.50"

Area (sf)	CN	Description
617	98	Paved parking, HSG B
951	79	<50% Grass cover, Poor, HSG B
867	98	Water Surface, HSG B
2,435	91	Weighted Average
951		39.06% Pervious Area
1,484		60.94% Impervious Area

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

Subcatchment S9: Drivwy to CB3

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Type II 24-hr 100 Yr Rainfall=6.50"

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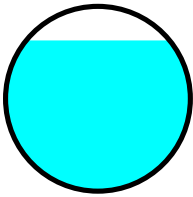
Summary for Reach 1R: 6" PVC

Inflow Area = 0.111 ac, 100.00% Impervious, Inflow Depth = 6.26" for 100 Yr event
Inflow = 1.03 cfs @ 11.97 hrs, Volume= 0.058 af
Outflow = 1.02 cfs @ 11.98 hrs, Volume= 0.058 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Max. Velocity= 5.99 fps, Min. Travel Time= 0.3 min
Avg. Velocity= 1.94 fps, Avg. Travel Time= 1.0 min

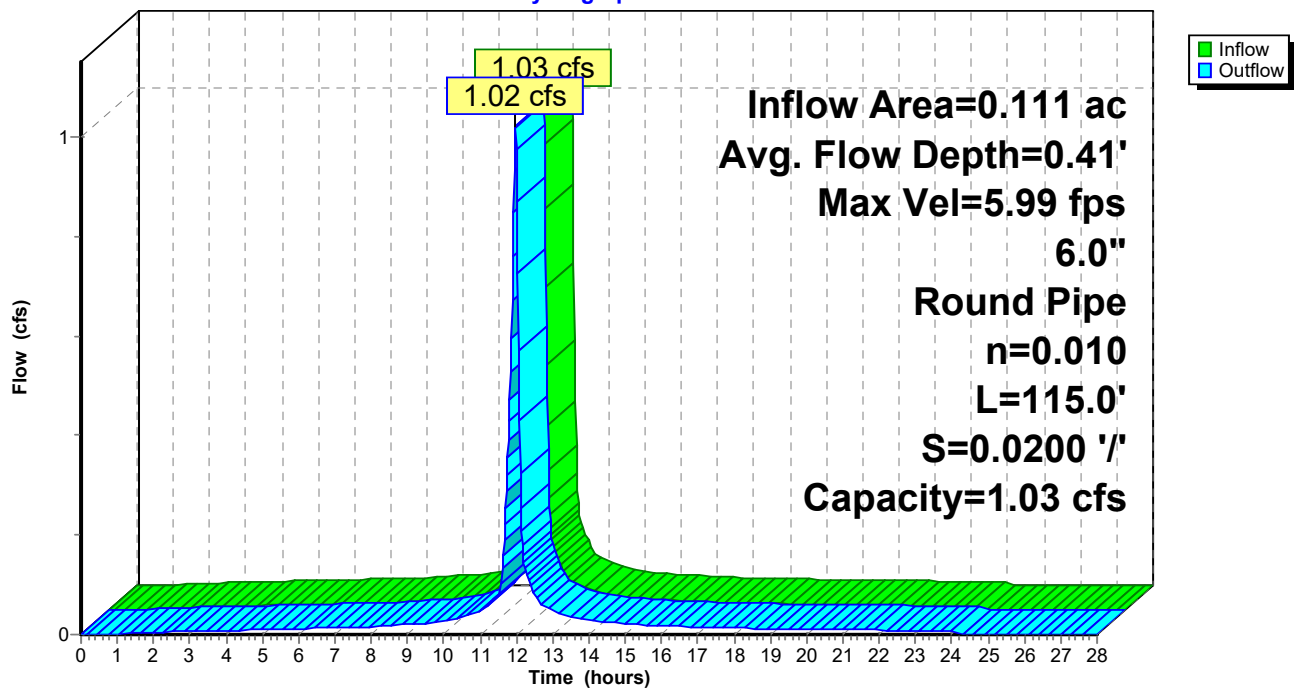
Peak Storage= 20 cf @ 11.97 hrs
Average Depth at Peak Storage= 0.41'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.03 cfs

6.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 115.0' Slope= 0.0200 '/'
Inlet Invert= 61.00', Outlet Invert= 58.70'



Reach 1R: 6" PVC

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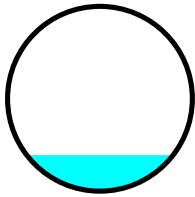
Summary for Reach 2R: 12" ADS

Inflow Area = 0.055 ac, 61.01% Impervious, Inflow Depth = 5.43" for 100 Yr event
Inflow = 0.46 cfs @ 11.97 hrs, Volume= 0.025 af
Outflow = 0.46 cfs @ 11.98 hrs, Volume= 0.025 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
Max. Velocity= 4.32 fps, Min. Travel Time= 0.3 min
Avg. Velocity= 1.23 fps, Avg. Travel Time= 1.0 min

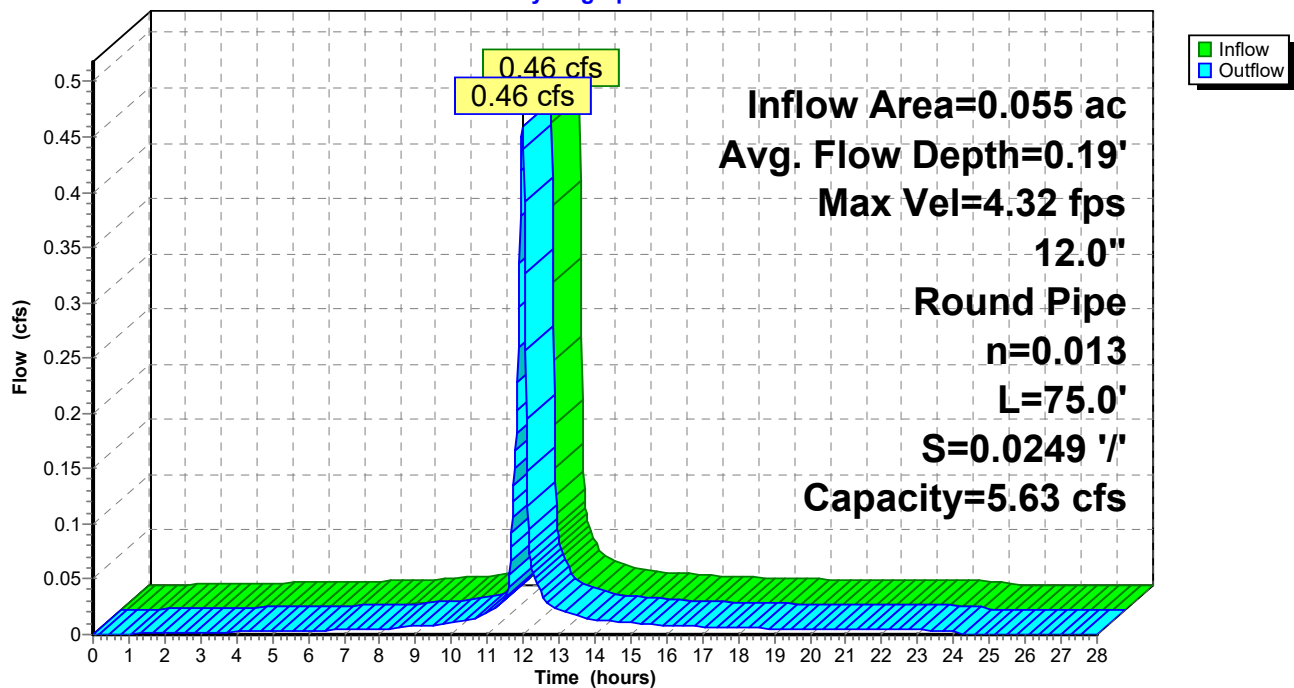
Peak Storage= 8 cf @ 11.97 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.63 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 75.0' Slope= 0.0249 '/'
Inlet Invert= 54.95', Outlet Invert= 53.08'



Reach 2R: 12" ADS

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Summary for Reach 5R: Total Offsite

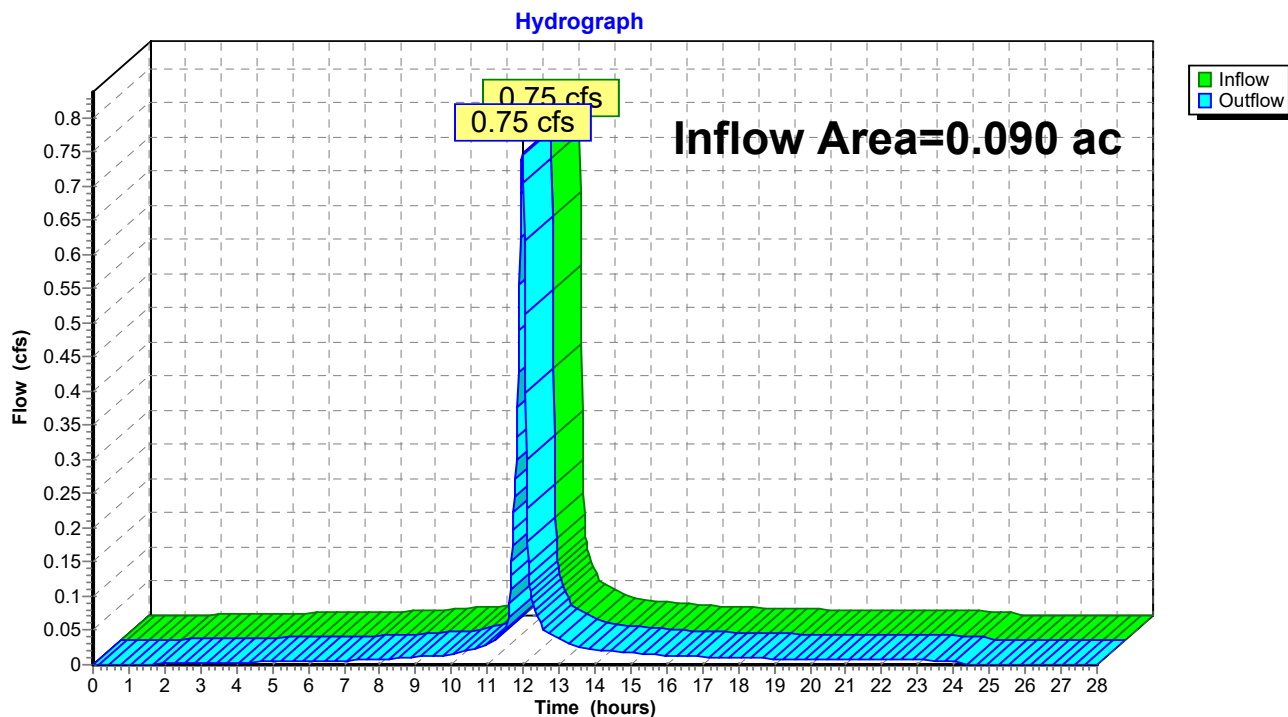
Inflow Area = 0.090 ac, 55.20% Impervious, Inflow Depth = 5.31" for 100 Yr event

Inflow = 0.75 cfs @ 11.97 hrs, Volume= 0.040 af

Outflow = 0.75 cfs @ 11.97 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 5R: Total Offsite



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Type II 24-hr 100 Yr Rainfall=6.50"

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Summary for Pond P1A: Roof INF

Inflow Area = 0.111 ac, 100.00% Impervious, Inflow Depth = 6.26" for 100 Yr event
 Inflow = 1.02 cfs @ 11.98 hrs, Volume= 0.058 af
 Outflow = 0.02 cfs @ 9.78 hrs, Volume= 0.037 af, Atten= 98%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 9.78 hrs, Volume= 0.037 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 60.53' @ 15.41 hrs Surf.Area= 588 sf Storage= 1,488 cf

Plug-Flow detention time= 373.7 min calculated for 0.037 af (63% of inflow)
 Center-of-Mass det. time= 265.4 min (1,006.2 - 740.8)

Volume	Invert	Avail.Storage	Storage Description
#1	57.30'	1,423 cf	ISI Rainstore3 12 x 38 Inside= 39.4"W x 47.2"H => 12.14 sf x 3.28'L = 39.8 cf Outside= 39.4"W x 47.2"H => 12.92 sf x 3.28'L = 42.4 cf 1,610 cf Overall x 94.0% Voids
#2	56.80'	376 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 940 cf Overall x 40.0% Voids
		1,799 cf	Total Available Storage

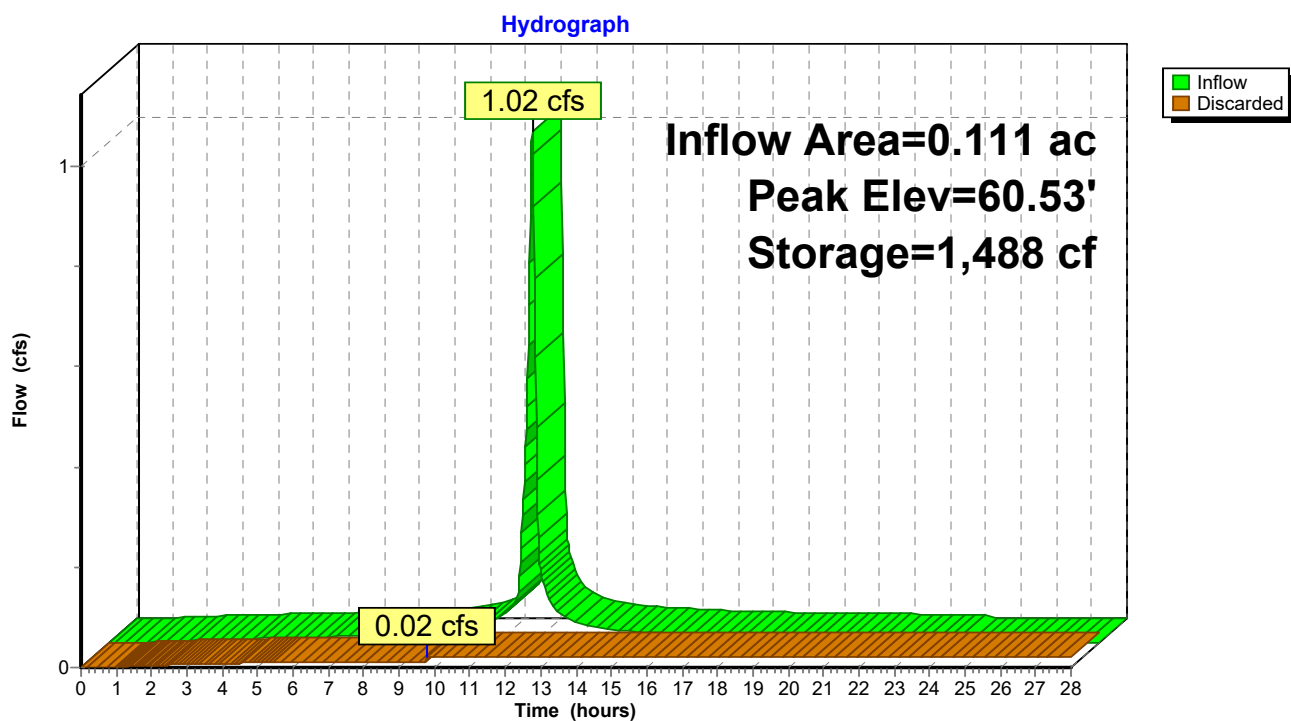
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.80	451	0	0
57.29	451	221	221
57.30	179	3	224
61.30	179	716	940

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.80'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.02 cfs @ 9.78 hrs HW=57.30' (Free Discharge)

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

Pond P1A: Roof INF



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Type II 24-hr 100 Yr Rainfall=6.50"

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Summary for Pond P1B: Roof INF

Inflow Area = 0.082 ac, 100.00% Impervious, Inflow Depth = 6.26" for 100 Yr event
 Inflow = 0.76 cfs @ 11.97 hrs, Volume= 0.043 af
 Outflow = 0.02 cfs @ 10.30 hrs, Volume= 0.040 af, Atten= 97%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 10.30 hrs, Volume= 0.040 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 60.08' @ 13.80 hrs Surf.Area= 651 sf Storage= 919 cf

Plug-Flow detention time= 328.0 min calculated for 0.040 af (94% of inflow)
 Center-of-Mass det. time= 291.2 min (1,031.0 - 739.8)

Volume	Invert	Avail.Storage	Storage Description
#1	58.30'	843 cf	ISI Rainstore3 6 x 45 Inside= 39.4"W x 23.6"H => 6.07 sf x 3.28'L = 19.9 cf Outside= 39.4"W x 23.6"H => 6.46 sf x 3.28'L = 21.2 cf 953 cf Overall x 94.0% Voids
#2	58.20'	182 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 454 cf Overall x 40.0% Voids
		1,024 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.20	487	0	0
58.44	487	117	117
58.45	167	3	120
60.45	167	334	454

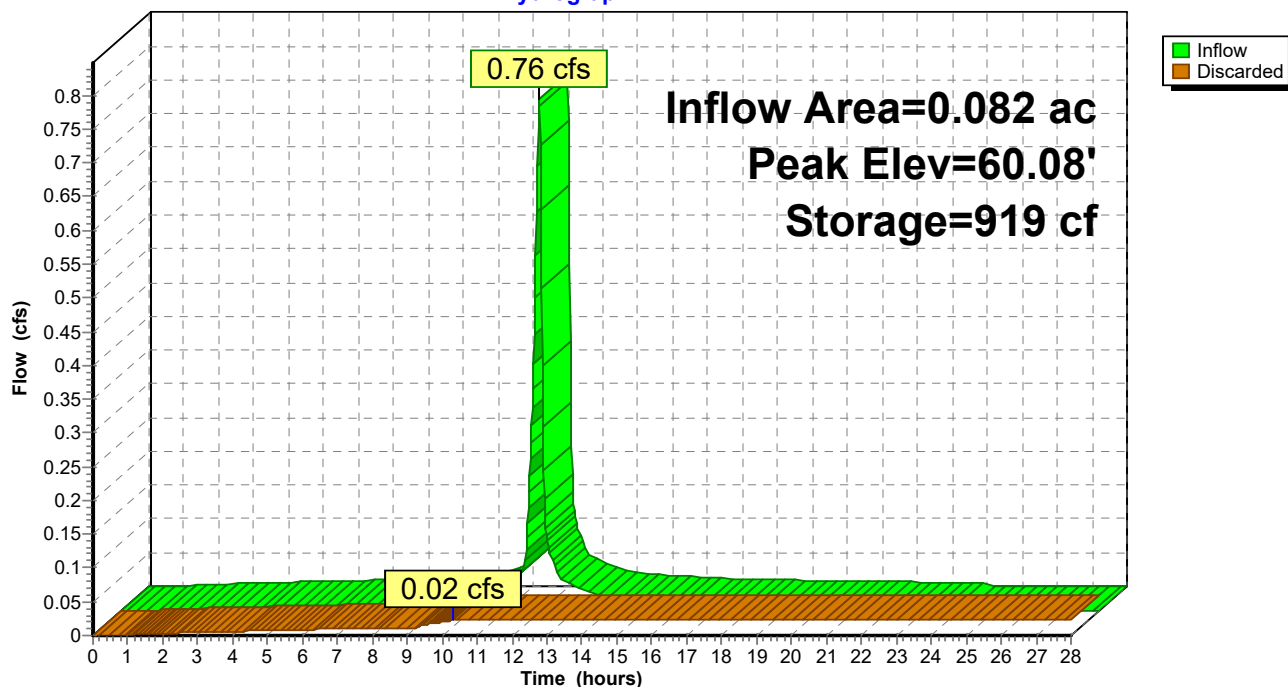
Device	Routing	Invert	Outlet Devices
#1	Discarded	58.20'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.02 cfs @ 10.30 hrs HW=58.30' (Free Discharge)

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

Pond P1B: Roof INF

Hydrograph



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Type II 24-hr 100 Yr Rainfall=6.50"

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Summary for Pond P2: Retention

Inflow Area = 0.263 ac, 77.23% Impervious, Inflow Depth = 6.26" for 100 Yr event
 Inflow = 2.43 cfs @ 11.97 hrs, Volume= 0.137 af
 Outflow = 0.05 cfs @ 15.51 hrs, Volume= 0.082 af, Atten= 98%, Lag= 212.5 min
 Discarded = 0.05 cfs @ 15.51 hrs, Volume= 0.082 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 60.21' @ 15.51 hrs Surf.Area= 1,976 sf Storage= 3,592 cf

Plug-Flow detention time= 365.2 min calculated for 0.082 af (59% of inflow)
 Center-of-Mass det. time= 251.0 min (990.8 - 739.8)

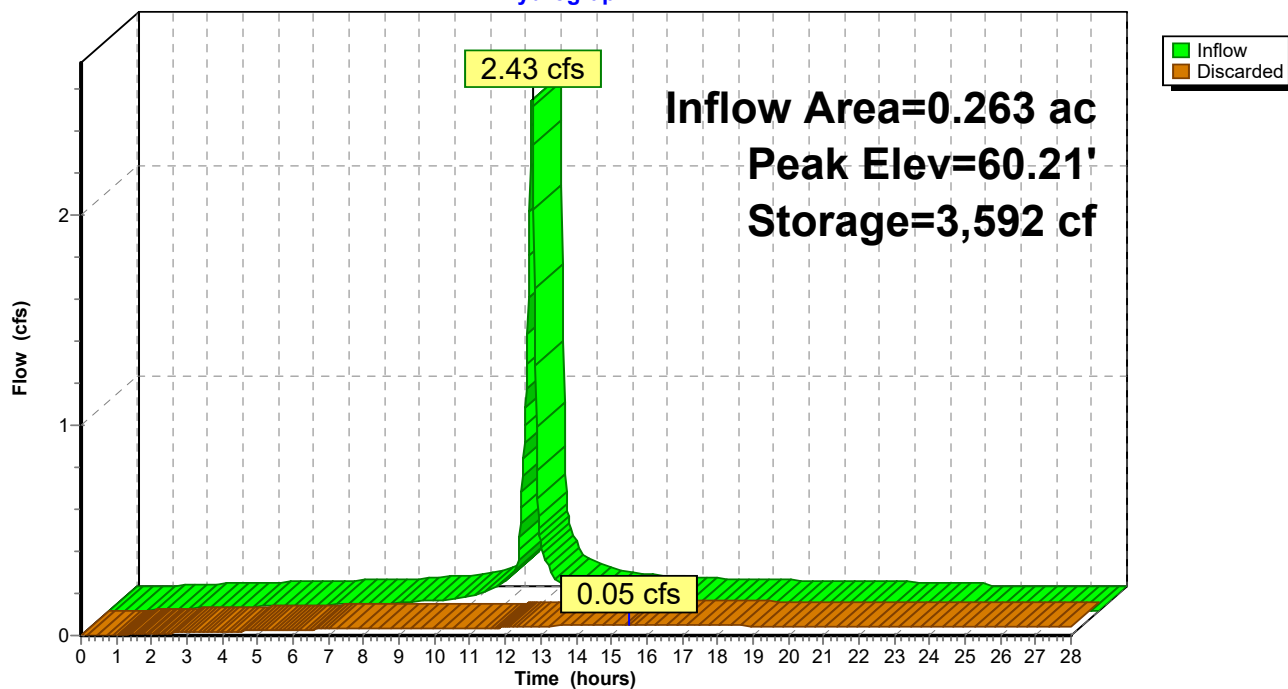
Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	3,681 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	1,329	0	0
59.00	1,596	1,463	1,463
60.00	1,873	1,735	3,197
60.25	1,998	484	3,681

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.00'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.05 cfs @ 15.51 hrs HW=60.21' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Pond P2: Retention

Hydrograph



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Type II 24-hr 100 Yr Rainfall=6.50"

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Summary for Pond P3: SE Inf

Inflow Area = 0.233 ac, 89.96% Impervious, Inflow Depth = 6.03" for 100 Yr event
 Inflow = 2.14 cfs @ 11.97 hrs, Volume= 0.117 af
 Outflow = 0.07 cfs @ 10.60 hrs, Volume= 0.110 af, Atten= 97%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 10.60 hrs, Volume= 0.110 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 58.82' @ 13.76 hrs Surf.Area= 1,801 sf Storage= 2,651 cf

Plug-Flow detention time= 346.0 min calculated for 0.110 af (94% of inflow)
 Center-of-Mass det. time= 310.5 min (1,063.1 - 752.6)

Volume	Invert	Avail.Storage	Storage Description
#1	57.10'	2,621 cf	ISI Rainstore3 6 x 140 Inside= 39.4"W x 23.6"H => 6.07 sf x 3.28'L = 19.9 cf Outside= 39.4"W x 23.6"H => 6.46 sf x 3.28'L = 21.2 cf 2,966 cf Overall x 94.0% Voids
#2	56.80'	389 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 973 cf Overall x 40.0% Voids
		3,010 cf	Total Available Storage

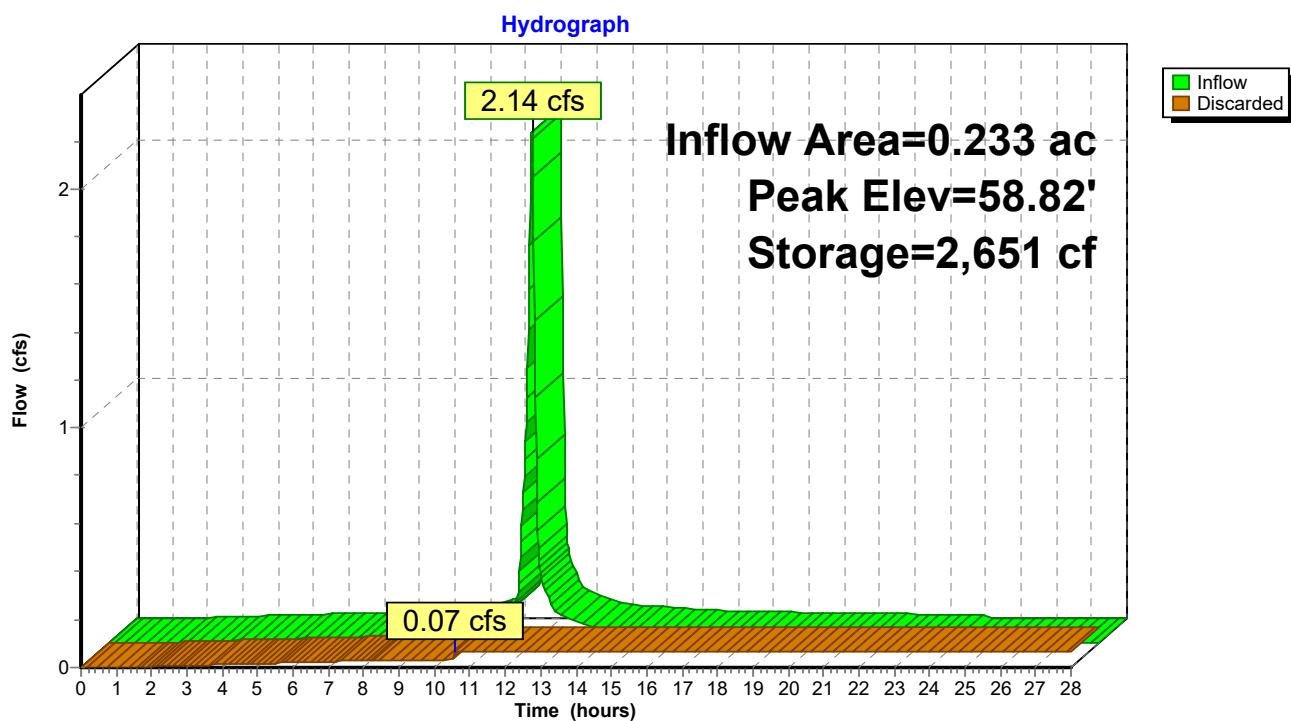
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.80	1,301	0	0
57.09	1,301	377	377
57.10	294	8	385
59.10	294	588	973

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.80'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.07 cfs @ 10.60 hrs HW=57.10' (Free Discharge)

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

Pond P3: SE Inf



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Type II 24-hr 100 Yr Rainfall=6.50"

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Summary for Pond P4: SW Inf

Inflow Area = 0.228 ac, 98.71% Impervious, Inflow Depth = 6.26" for 100 Yr event
 Inflow = 2.10 cfs @ 11.97 hrs, Volume= 0.119 af
 Outflow = 0.07 cfs @ 10.50 hrs, Volume= 0.119 af, Atten= 97%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 10.50 hrs, Volume= 0.119 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 57.98' @ 13.55 hrs Surf.Area= 1,972 sf Storage= 2,487 cf

Plug-Flow detention time= 286.1 min calculated for 0.119 af (100% of inflow)
 Center-of-Mass det. time= 286.0 min (1,025.8 - 739.8)

Volume	Invert	Avail.Storage	Storage Description
#1	56.45'	2,808 cf	ISI Rainstore3 6 x 150 Inside= 39.4"W x 23.6"H => 6.07 sf x 3.28'L = 19.9 cf Outside= 39.4"W x 23.6"H => 6.46 sf x 3.28'L = 21.2 cf 3,178 cf Overall x 94.0% Voids
#2	56.30'	369 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 923 cf Overall x 40.0% Voids
		3,177 cf	Total Available Storage

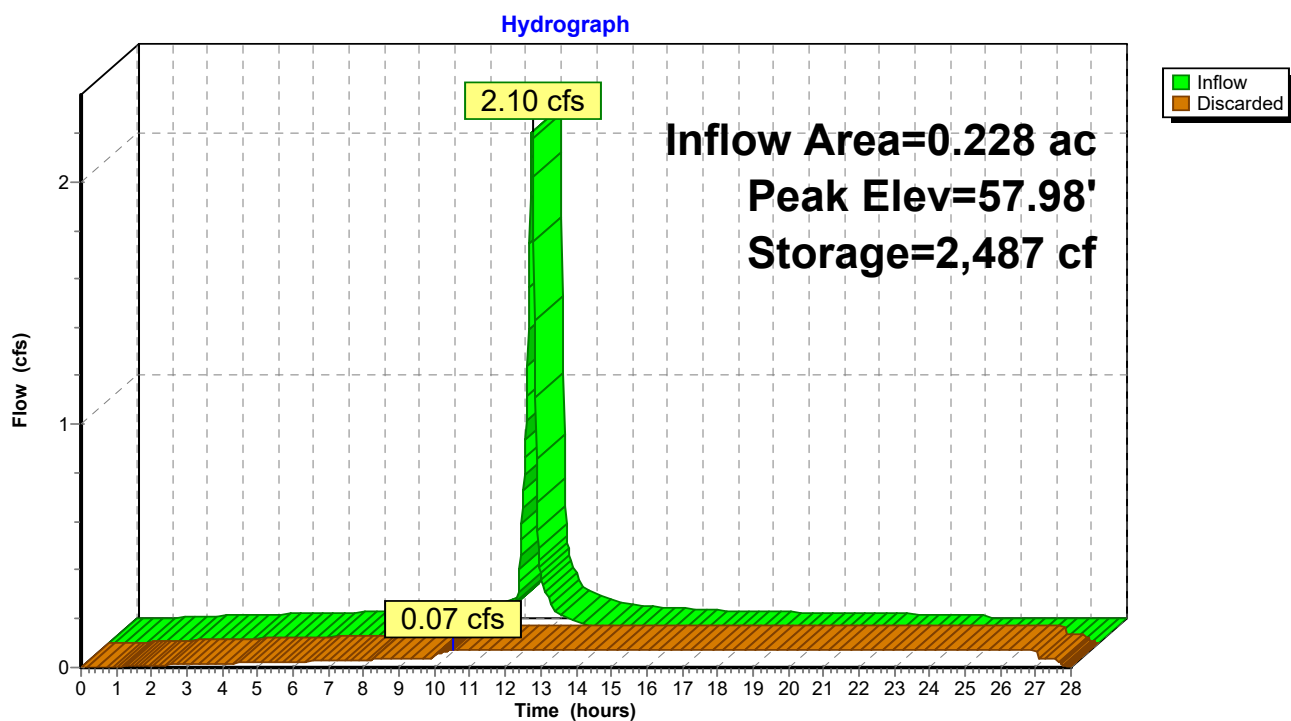
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.30	1,426	0	0
56.44	1,426	200	200
56.45	357	9	209
58.45	357	714	923

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.30'	1.020 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.07 cfs @ 10.50 hrs HW=56.45' (Free Discharge)

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

Pond P4: SW Inf



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Summary for Pond P5: Retention

Inflow Area = 0.066 ac, 66.92% Impervious, Inflow Depth = 5.57" for 100 Yr event
 Inflow = 0.58 cfs @ 11.97 hrs, Volume= 0.031 af
 Outflow = 0.02 cfs @ 13.50 hrs, Volume= 0.029 af, Atten= 96%, Lag= 91.9 min
 Discarded = 0.02 cfs @ 13.50 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
 Peak Elev= 57.95' @ 13.50 hrs Surf.Area= 888 sf Storage= 687 cf

Plug-Flow detention time= 317.6 min calculated for 0.029 af (96% of inflow)
 Center-of-Mass det. time= 292.4 min (1,061.5 - 769.1)

Volume	Invert	Avail.Storage	Storage Description
#1	57.00'	1,230 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
57.00	557	0	0
58.00	905	731	731
58.50	1,092	499	1,230

Device	Routing	Invert	Outlet Devices
#1	Discarded	57.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 13.50 hrs HW=57.95' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P5: Retention

