



STORMWATER CALCULATIONS-CEDA

August 27, 2021



Bay Pointe Club • Wareham • Massachusetts

Bay Pointe Mixed-Use Development Project

Prepared For:

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Storm Water Management-CEDA

The storm water management system selected is best suited to the site and provides the least disturbance of the site while recharging the aquifer. The system is sized to mitigate the effects of increased runoff typically resulting from development of a site. The storm water management system consists of the collection of overland runoff to an infiltration basin on site. The drainage system is designed to offset increased storm flows and provide water quality in accordance with the regulations of both state and local authorities. This drainage system is intended to mitigate increased runoff generated from new construction so the downstream wetlands, water bodies, and neighboring homes will not be impacted. The drainage system will completely control post development peak flows and provide for total suspended solids (TSS) removal at the maximum possible rate.

The Pre-Development watershed area (PRE) encompasses 11.28 acres, which includes portions of the existing development on the west side of Bay Pointe Drive.

Under Post Development Conditions, the site has been divided into seven sub-watershed areas containing a total of 11.07 acres, labeled “POST BASIN”, “POST EAST”, “POST CENTER”, “POST WEST”, “POST PARKING”, “POST BPD” and “POST UNC”.

The following table summarizes the results of the inflow analysis for the seven sub-watershed areas under post development conditions:

WATERSHED	2-YEAR STORM	10-YEAR STORM	25-YEAR STORM	100-YEAR STORM
POST BASIN	0.01 CFS	0.22 CFS	0.71 CFS	1.96 CFS
POST EAST	0.59 CFS	1.16 CFS	1.59 CFS	2.30 CFS
POST CENTER	0.76 CFS	1.30 CFS	1.68 CFS	2.29 CFS
POST WEST	2.95 CFS	5.45 CFS	7.30 CFS	10.28 CFS
POST PARK	1.26 CFS	2.99 CFS	4.38 CFS	6.74 CFS
POST BPD	1.28 CFS	2.92 CFS	4.23 CFS	6.44 CFS
POST UNC	-0- CFS	0.03 CFS	0.10 CFS	0.27 CFS

The following table compares the flows between pre-development conditions and post development conditions, after flows are routed through the infiltration basin:

WATERSHED	2-YEAR STORM	10-YEAR STORM	25-YEAR STORM	100-YEAR STORM
PRE	0.29 CFS	1.78 CFS	3.50 CFS	6.97 CFS
POST	-0- CFS	0.03 CFS	0.10 CFS	6.25 CFS
DIFFERENCE	-0.29 CFS	-1.75 CFS	-3.40 CFS	-0.72 CFS

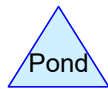
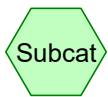
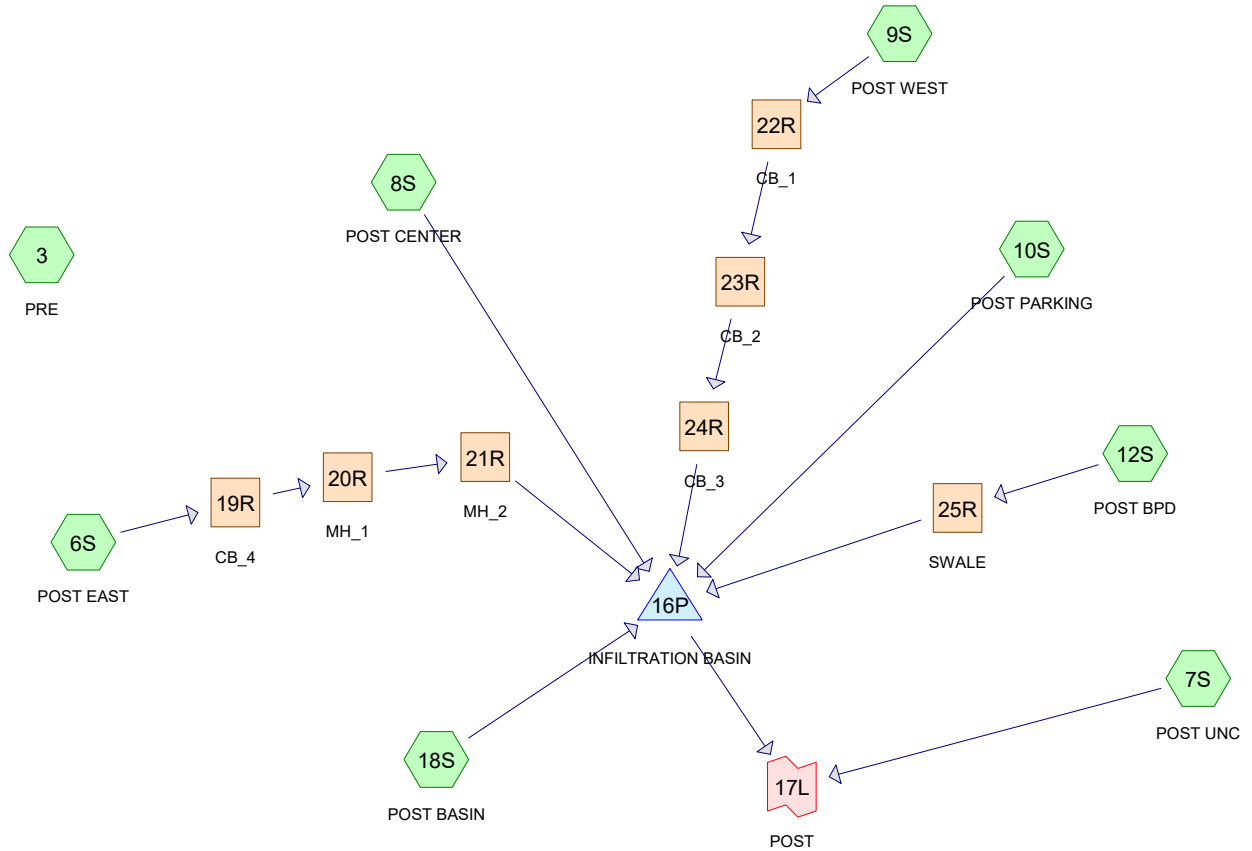
The drainage collection system proposed takes full advantage of the natural slopes and contours of the site and utilize the existing course sandy subsoil parent material. It provides for both peak storm flow mitigation and sediment removal. By reducing post-development storm water flows, the primary goal of the proposed drainage system is achieved. Any potential impacts from the proposed development on the abutting properties have been mitigated.

HYDROCAD CALCULATIONS



WATERSHED MAP





Routing Diagram for Baypointe CEDA
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Baypointe CEDA

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
11.147	39	>75% Grass cover, Good, HSG A (3, 6S, 7S, 8S, 9S, 10S, 12S, 18S)
1.331	98	Existing Impervious, HSG A (10S, 12S)
0.088	98	Existing Roof, HSG A (18S)
0.029	98	Existing Roofs (3)
2.589	98	Roads/Driveways/SWalk (3)
0.089	98	Roofs, HSG A (7S)
3.290	98	Unconnected pavement, HSG A (6S, 8S, 9S, 10S, 12S, 18S)
3.604	30	Woods, Good, HSG A (3, 7S, 12S)
22.167	57	TOTAL AREA

Baypointe CEDA

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
19.549	HSG A	3, 6S, 7S, 8S, 9S, 10S, 12S, 18S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
2.618	Other	3
22.167		TOTAL AREA

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Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
11.147	0.000	0.000	0.000	0.000	11.147	>75% Grass cover, Good	3, 6S, 7S, 8S, 9S, 10S, 12S, 18S
1.331	0.000	0.000	0.000	0.000	1.331	Existing Impervious	10S, 12S
0.088	0.000	0.000	0.000	0.000	0.088	Existing Roof	18S
0.000	0.000	0.000	0.000	0.029	0.029	Existing Roofs	3
0.000	0.000	0.000	0.000	2.589	2.589	Roads/Driveways/SWalk	3
0.089	0.000	0.000	0.000	0.000	0.089	Roofs	7S
3.290	0.000	0.000	0.000	0.000	3.290	Unconnected pavement	6S, 8S, 9S, 10S, 12S, 18S
3.604	0.000	0.000	0.000	0.000	3.604	Woods, Good	3, 7S, 12S
19.549	0.000	0.000	0.000	2.618	22.167	TOTAL AREA	

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Page 5

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	6S	0.00	0.00	169.0	0.0100	0.013	12.0	0.0	0.0
2	9S	0.00	0.00	20.0	0.0400	0.011	12.0	0.0	0.0
3	9S	0.00	0.00	71.0	0.0400	0.011	12.0	0.0	0.0
4	9S	0.00	0.00	99.0	0.0400	0.011	12.0	0.0	0.0
5	19R	23.80	23.59	41.0	0.0051	0.011	18.0	0.0	0.0
6	20R	23.59	23.12	93.0	0.0051	0.011	18.0	0.0	0.0
7	21R	23.12	22.95	34.0	0.0050	0.011	18.0	0.0	0.0
8	22R	27.89	27.35	54.0	0.0100	0.011	18.0	0.0	0.0
9	23R	27.35	27.02	33.0	0.0100	0.011	18.0	0.0	0.0
10	24R	27.02	26.03	99.0	0.0100	0.011	24.0	0.0	0.0

Baypointe CEDA

Type III 24-hr 2-Year Rainfall=3.40"

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Page 6

Time span=0.00-30.00 hrs, dt=0.02 hrs, 1501 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 3: PRE	Runoff Area=483,573 sf 23.58% Impervious Runoff Depth=0.17" Flow Length=1,217' Tc=65.6 min CN=50 Runoff=0.29 cfs 0.159 af
Subcatchment 6S: POST EAST	Runoff Area=26,538 sf 56.45% Impervious Runoff Depth=1.06" Flow Length=518' Tc=11.2 min CN=72 Runoff=0.59 cfs 0.054 af
Subcatchment 7S: POST UNC	Runoff Area=33,460 sf 11.63% Impervious Runoff Depth=0.03" Flow Length=278' Slope=0.0700 ' ' Tc=50.5 min CN=42 Runoff=0.00 cfs 0.002 af
Subcatchment 8S: POST CENTER	Runoff Area=18,063 sf 70.19% Impervious Runoff Depth=1.56" Flow Length=230' Tc=5.6 min CN=80 Runoff=0.76 cfs 0.054 af
Subcatchment 9S: POST WEST	Runoff Area=82,197 sf 60.21% Impervious Runoff Depth=1.23" Flow Length=541' Tc=2.8 min CN=75 Runoff=2.95 cfs 0.194 af
Subcatchment 10S: POST PARKING	Runoff Area=124,014 sf 44.37% Impervious Runoff Depth=0.70" Flow Length=575' Tc=21.1 min CN=65 Runoff=1.26 cfs 0.166 af
Subcatchment 12S: POST BPD	Runoff Area=131,718 sf 47.92% Impervious Runoff Depth=0.75" Flow Length=786' Tc=29.2 min CN=66 Runoff=1.28 cfs 0.188 af
Subcatchment 18S: POST BASIN	Runoff Area=66,040 sf 14.91% Impervious Runoff Depth=0.07" Tc=0.0 min UI Adjusted CN=45 Runoff=0.01 cfs 0.009 af
Reach 19R: CB_4	Avg. Flow Depth=0.26' Max Vel=2.85 fps Inflow=0.59 cfs 0.054 af 18.0" Round Pipe n=0.011 L=41.0' S=0.0051 ' ' Capacity=8.88 cfs Outflow=0.59 cfs 0.054 af
Reach 20R: MH_1	Avg. Flow Depth=0.26' Max Vel=2.84 fps Inflow=0.59 cfs 0.054 af 18.0" Round Pipe n=0.011 L=93.0' S=0.0051 ' ' Capacity=8.83 cfs Outflow=0.59 cfs 0.054 af
Reach 21R: MH_2	Avg. Flow Depth=0.26' Max Vel=2.82 fps Inflow=0.59 cfs 0.054 af 18.0" Round Pipe n=0.011 L=34.0' S=0.0050 ' ' Capacity=8.78 cfs Outflow=0.59 cfs 0.054 af
Reach 22R: CB_1	Avg. Flow Depth=0.50' Max Vel=5.74 fps Inflow=2.95 cfs 0.194 af 18.0" Round Pipe n=0.011 L=54.0' S=0.0100 ' ' Capacity=12.41 cfs Outflow=2.93 cfs 0.194 af
Reach 23R: CB_2	Avg. Flow Depth=0.50' Max Vel=5.74 fps Inflow=2.93 cfs 0.194 af 18.0" Round Pipe n=0.011 L=33.0' S=0.0100 ' ' Capacity=12.41 cfs Outflow=2.92 cfs 0.194 af
Reach 24R: CB_3	Avg. Flow Depth=0.45' Max Vel=5.58 fps Inflow=2.92 cfs 0.194 af 24.0" Round Pipe n=0.011 L=99.0' S=0.0100 ' ' Capacity=26.74 cfs Outflow=2.89 cfs 0.194 af
Reach 25R: SWALE	Avg. Flow Depth=0.16' Max Vel=2.56 fps Inflow=1.28 cfs 0.188 af n=0.022 L=145.0' S=0.0276 ' ' Capacity=14.28 cfs Outflow=1.28 cfs 0.188 af
Pond 16P: INFILTRATION BASIN	Peak Elev=22.17' Storage=2,513 cf Inflow=4.39 cfs 0.664 af Discarded=2.82 cfs 0.664 af Primary=0.00 cfs 0.000 af Outflow=2.82 cfs 0.664 af

Baypointe CEDA

Type III 24-hr 2-Year Rainfall=3.40"

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Page 7

Link 17L: POST

Inflow=0.00 cfs 0.002 af
Primary=0.00 cfs 0.002 af

Total Runoff Area = 22.167 ac Runoff Volume = 0.825 af Average Runoff Depth = 0.45"
66.54% Pervious = 14.751 ac 33.46% Impervious = 7.417 ac

Summary for Subcatchment 3: PRE

Runoff = 0.29 cfs @ 13.64 hrs, Volume= 0.159 af, Depth= 0.17"

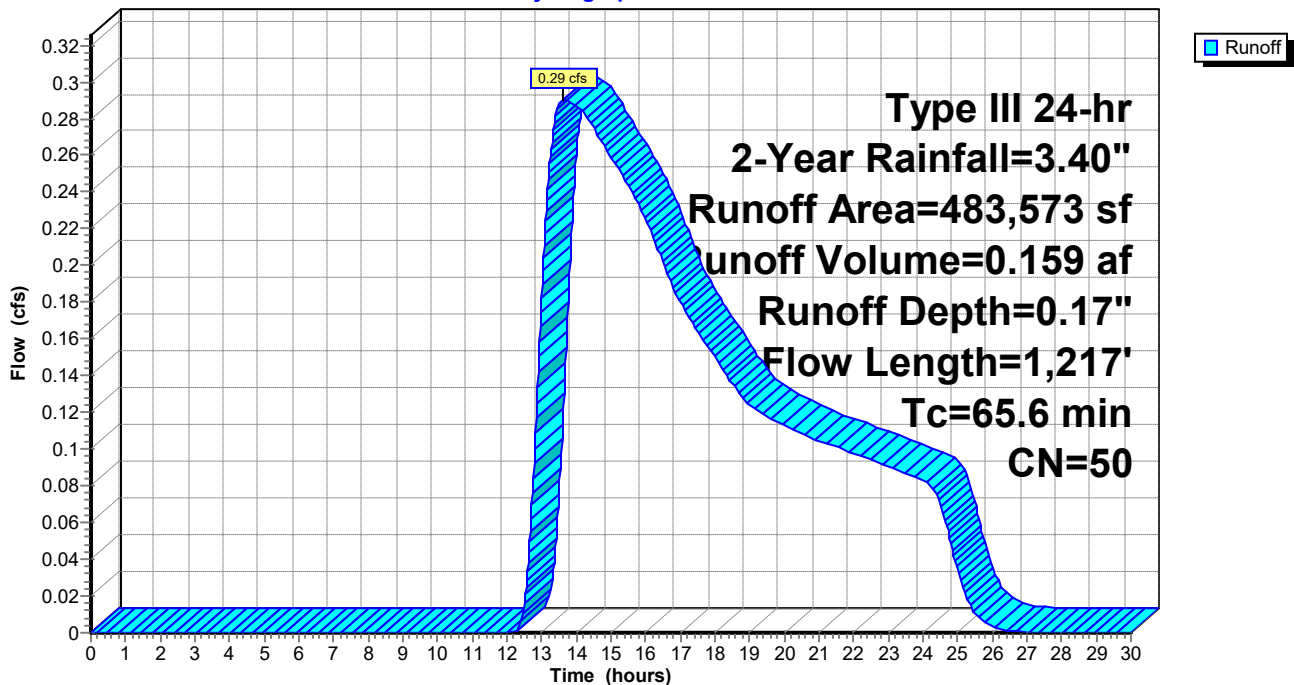
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
130,944	30	Woods, Good, HSG A
238,593	39	>75% Grass cover, Good, HSG A
* 112,792	98	Roads/Driveways/SWalk
* 1,244	98	Existing Roofs
483,573	50	Weighted Average
369,537	36	76.42% Pervious Area
114,036	98	23.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.0	267	0.0500	0.08		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	224	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
5.3	726	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
65.6	1,217	Total			

Subcatchment 3: PRE

Hydrograph



Summary for Subcatchment 6S: POST EAST

Runoff = 0.59 cfs @ 12.17 hrs, Volume= 0.054 af, Depth= 1.06"

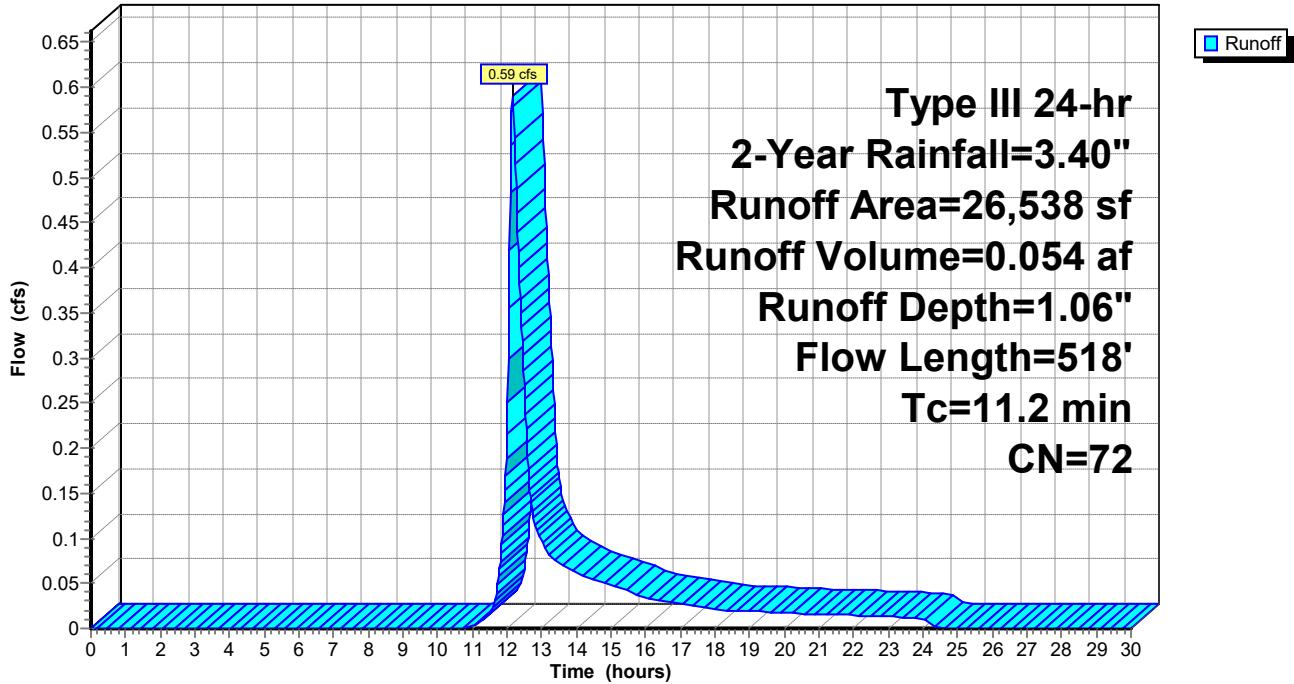
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
14,982	98	Unconnected pavement, HSG A
11,556	39	>75% Grass cover, Good, HSG A
26,538	72	Weighted Average
11,556	39	43.55% Pervious Area
14,982	98	56.45% Impervious Area
14,982		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	119	0.0700	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.7	182	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	48	0.1700	6.64		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.6	169	0.0100	4.54	3.56	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Concrete pipe, bends & connections
11.2	518	Total			

Subcatchment 6S: POST EAST

Hydrograph



Summary for Subcatchment 7S: POST UNC

Runoff = 0.00 cfs @ 17.56 hrs, Volume= 0.002 af, Depth= 0.03"

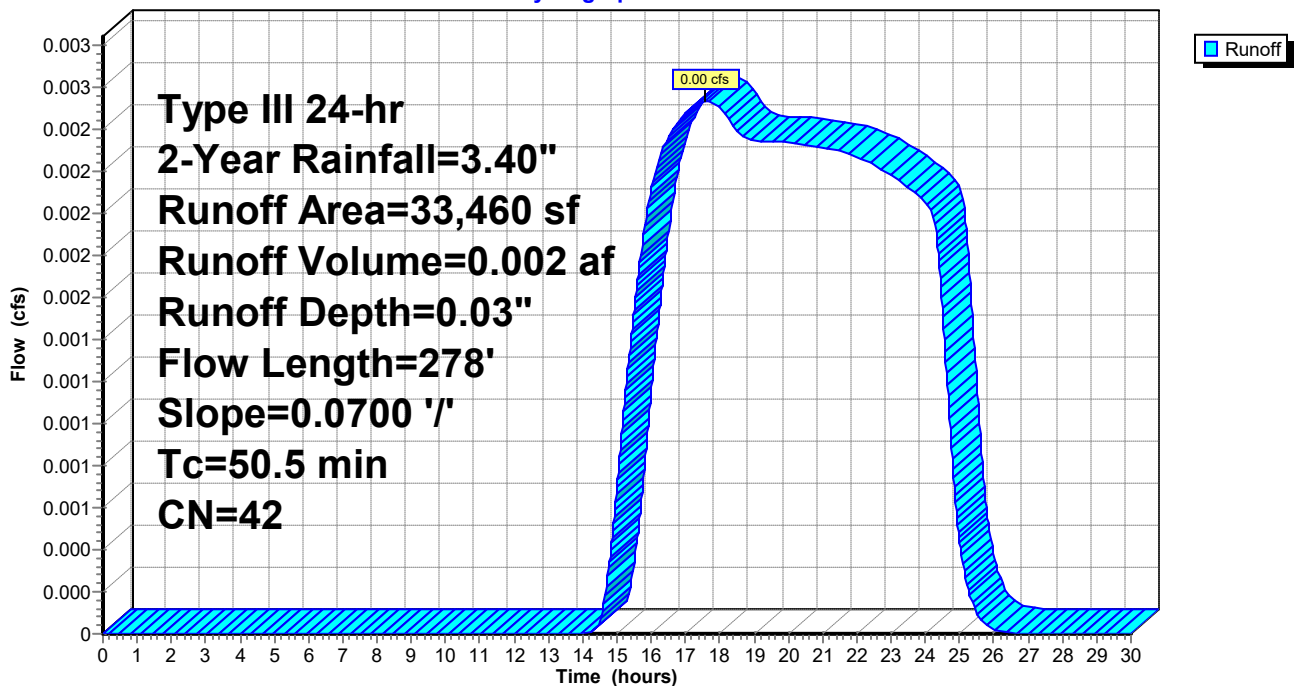
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
14,286	30	Woods, Good, HSG A
3,892	98	Roofs, HSG A
15,282	39	>75% Grass cover, Good, HSG A
33,460	42	Weighted Average
29,568	35	88.37% Pervious Area
3,892	98	11.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.5	278	0.0700	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"

Subcatchment 7S: POST UNC

Hydrograph



Summary for Subcatchment 8S: POST CENTER

Runoff = 0.76 cfs @ 12.09 hrs, Volume= 0.054 af, Depth= 1.56"

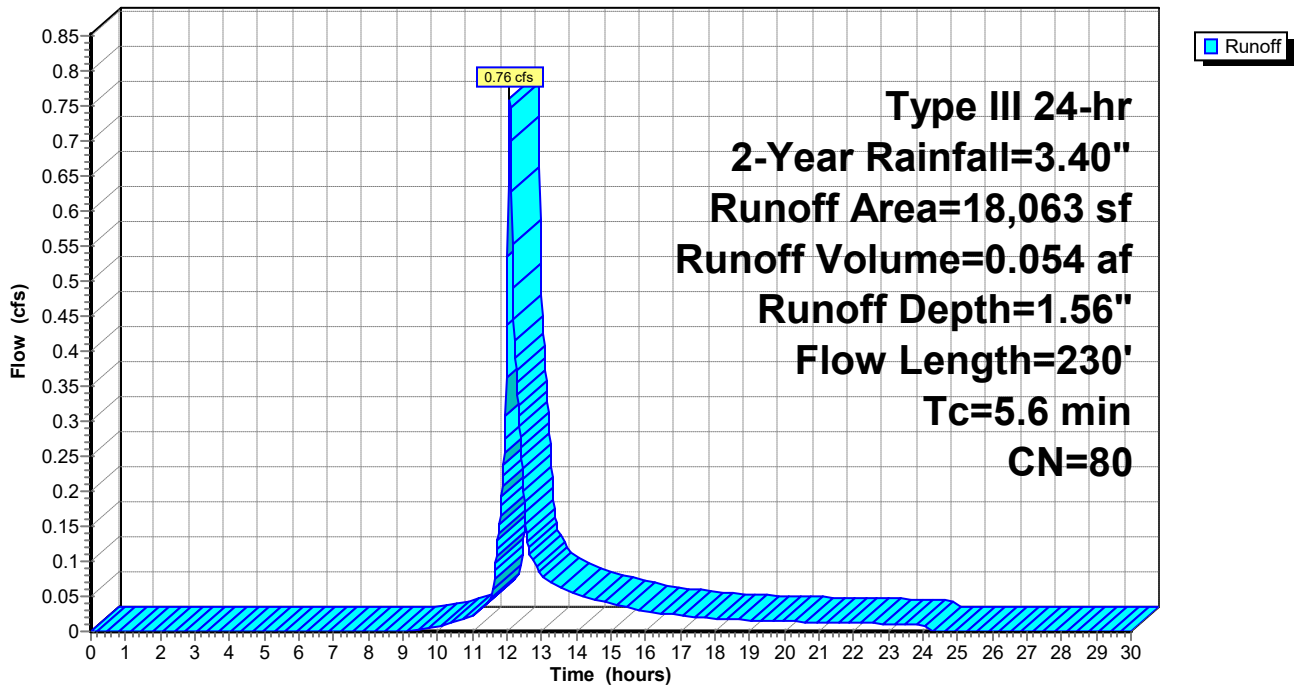
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
12,678	98	Unconnected pavement, HSG A
5,385	39	>75% Grass cover, Good, HSG A
18,063	80	Weighted Average
5,385	39	29.81% Pervious Area
12,678	98	70.19% Impervious Area
12,678		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	38	0.0500	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.1	192	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.6	230	Total			

Subcatchment 8S: POST CENTER

Hydrograph



Summary for Subcatchment 9S: POST WEST

Runoff = 2.95 cfs @ 12.05 hrs, Volume= 0.194 af, Depth= 1.23"

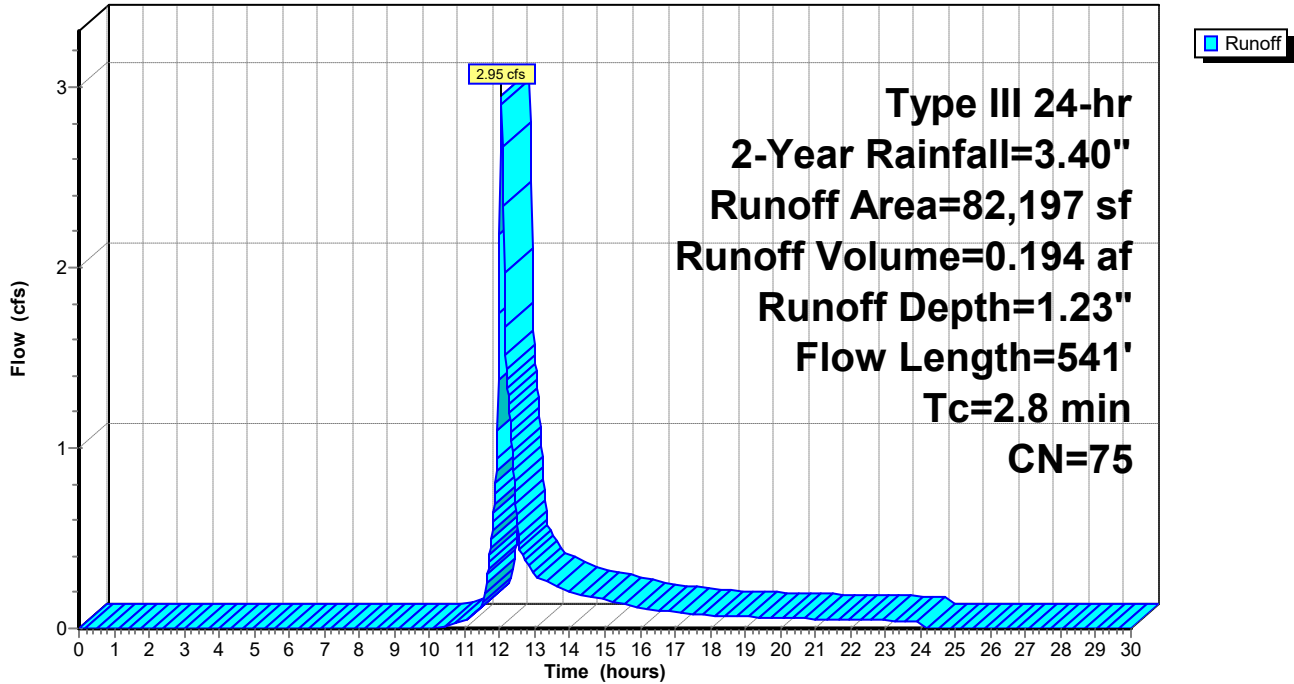
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
49,494	98	Unconnected pavement, HSG A
32,703	39	>75% Grass cover, Good, HSG A
82,197	75	Weighted Average
32,703	39	39.79% Pervious Area
49,494	98	60.21% Impervious Area
49,494		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	85	0.0200	1.35		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
1.5	266	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	20	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.1	71	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.2	99	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
2.8	541	Total			

Subcatchment 9S: POST WEST

Hydrograph



Summary for Subcatchment 10S: POST PARKING

Runoff = 1.26 cfs @ 12.35 hrs, Volume= 0.166 af, Depth= 0.70"

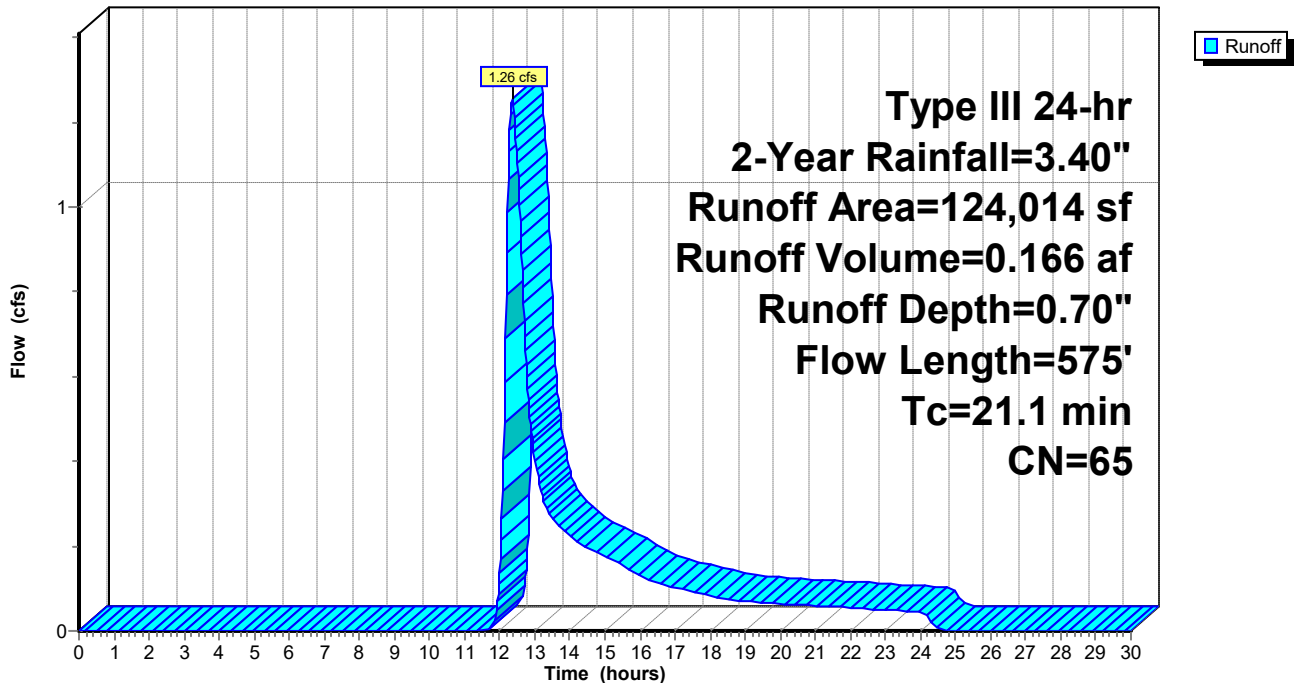
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (sf)	CN	Description
*	14,043	98	Existing Impervious, HSG A
	68,984	39	>75% Grass cover, Good, HSG A
	40,987	98	Unconnected pavement, HSG A
	124,014	65	Weighted Average
	68,984	39	55.63% Pervious Area
	55,030	98	44.37% Impervious Area
	40,987		74.48% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	212	0.0400	0.18		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.7	363	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
21.1	575	Total			

Subcatchment 10S: POST PARKING

Hydrograph



Summary for Subcatchment 12S: POST BPD

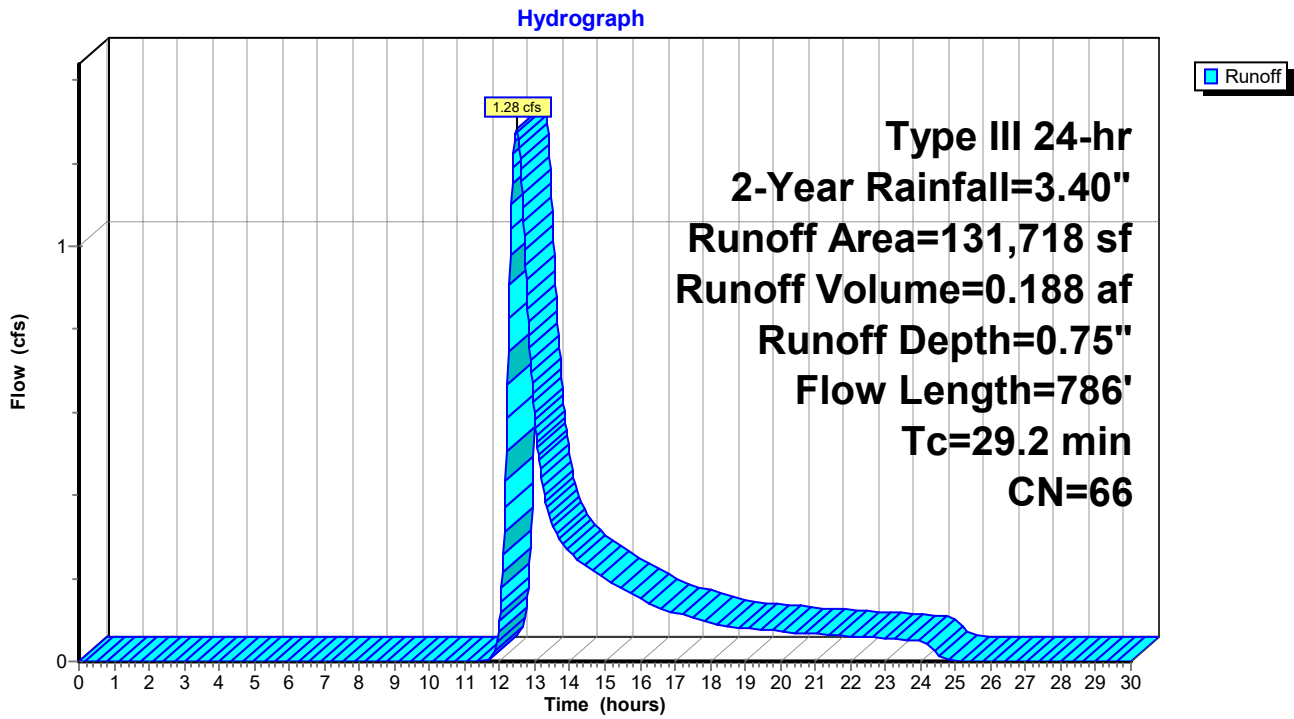
Runoff = 1.28 cfs @ 12.48 hrs, Volume= 0.188 af, Depth= 0.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
* 43,950	98	Existing Impervious, HSG A
56,854	39	>75% Grass cover, Good, HSG A
11,751	30	Woods, Good, HSG A
19,163	98	Unconnected pavement, HSG A
131,718	66	Weighted Average
68,605	37	52.08% Pervious Area
63,113	98	47.92% Impervious Area
19,163		30.36% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	225	0.0200	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.4	303	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	113	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.4	145	0.0300	5.59	14.90	Parabolic Channel, W=8.00' D=0.50' Area=2.7 sf Perim=8.1' n= 0.022 Earth, clean & straight
29.2	786	Total			

Subcatchment 12S: POST BPD



Summary for Subcatchment 18S: POST BASIN

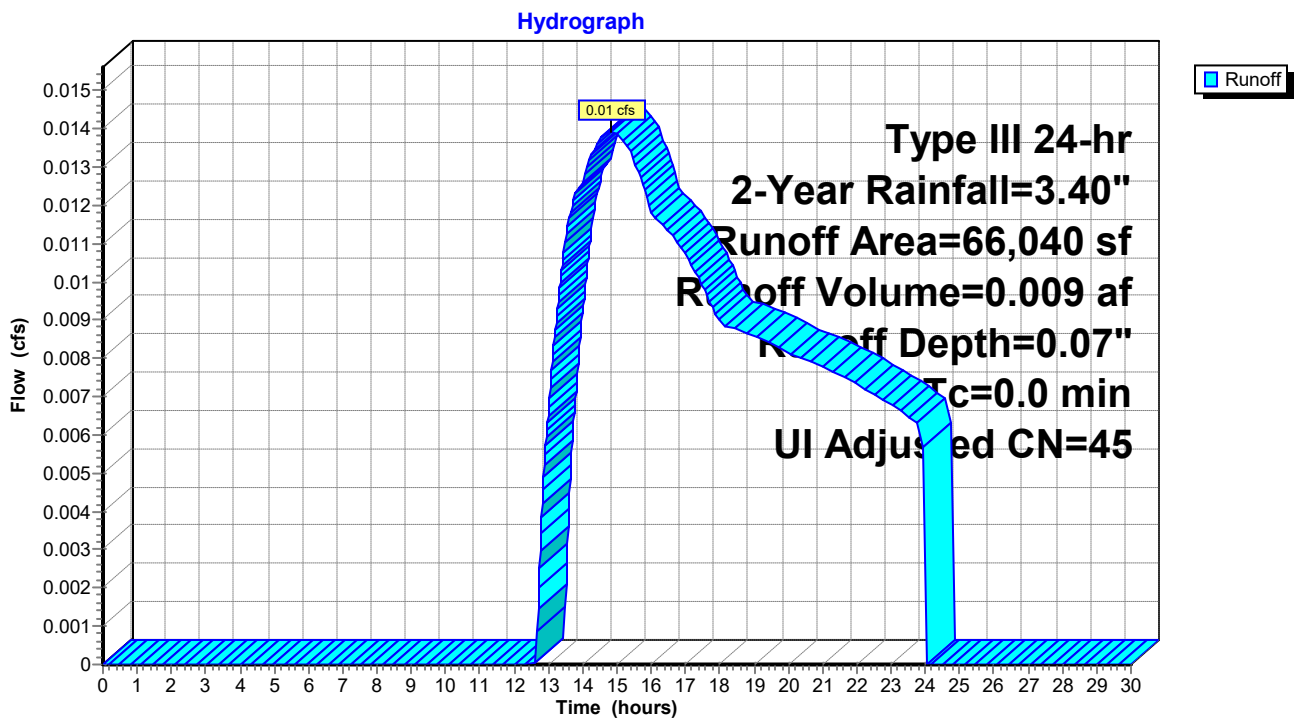
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.01 cfs @ 14.83 hrs, Volume= 0.009 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (sf)	CN	Adj	Description
*	3,821	98		Existing Roof, HSG A
	6,024	98		Unconnected pavement, HSG A
	56,195	39		>75% Grass cover, Good, HSG A
	66,040	48	45	Weighted Average, UI Adjusted
	56,195	39	39	85.09% Pervious Area
	9,845	98	98	14.91% Impervious Area
	6,024			61.19% Unconnected

Subcatchment 18S: POST BASIN



Summary for Reach 19R: CB_4

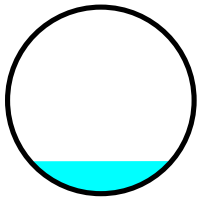
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.609 ac, 56.45% Impervious, Inflow Depth = 1.06" for 2-Year event
 Inflow = 0.59 cfs @ 12.17 hrs, Volume= 0.054 af
 Outflow = 0.59 cfs @ 12.18 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 2.85 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.16 fps, Avg. Travel Time= 0.6 min

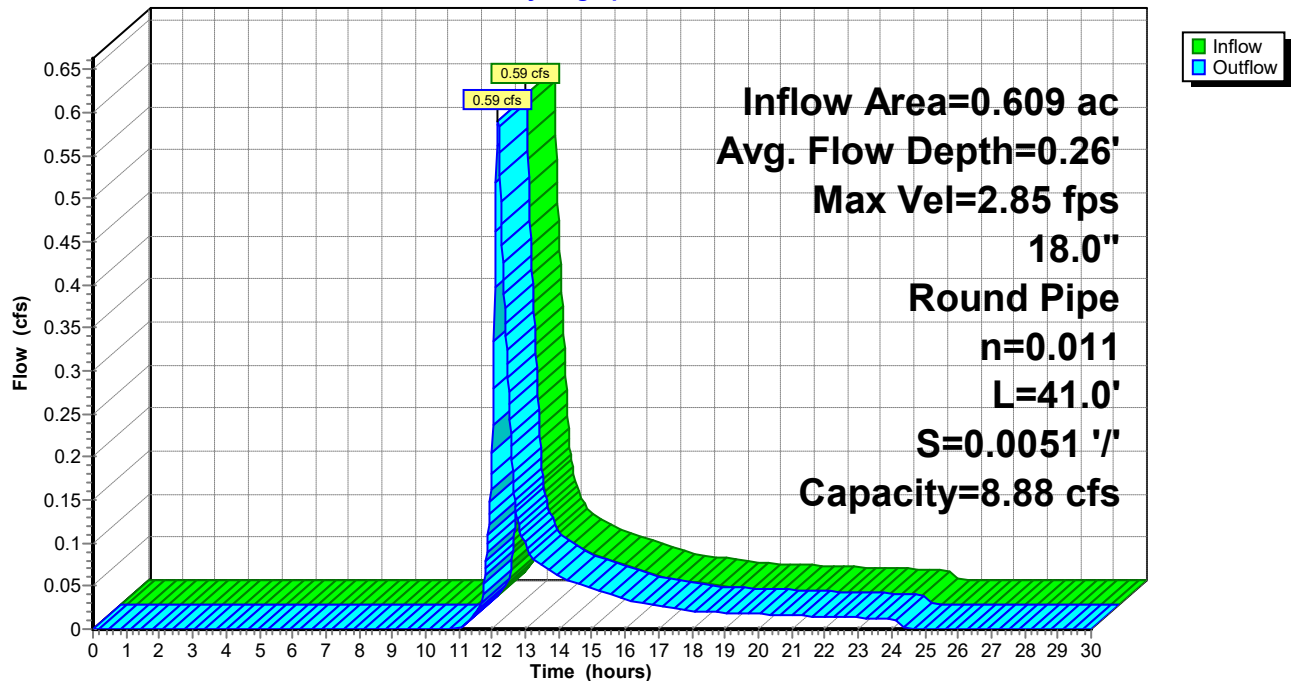
Peak Storage= 8 cf @ 12.17 hrs
 Average Depth at Peak Storage= 0.26'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.88 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 41.0' Slope= 0.0051 '/'
 Inlet Invert= 23.80', Outlet Invert= 23.59'



Reach 19R: CB_4

Hydrograph



Summary for Reach 20R: MH_1

[52] Hint: Inlet/Outlet conditions not evaluated

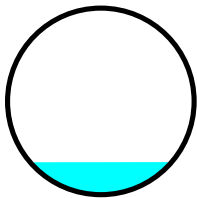
[62] Hint: Exceeded Reach 19R OUTLET depth by 0.01' @ 24.36 hrs

Inflow Area = 0.609 ac, 56.45% Impervious, Inflow Depth = 1.06" for 2-Year event
Inflow = 0.59 cfs @ 12.18 hrs, Volume= 0.054 af
Outflow = 0.59 cfs @ 12.19 hrs, Volume= 0.054 af, Atten= 1%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.84 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.15 fps, Avg. Travel Time= 1.3 min

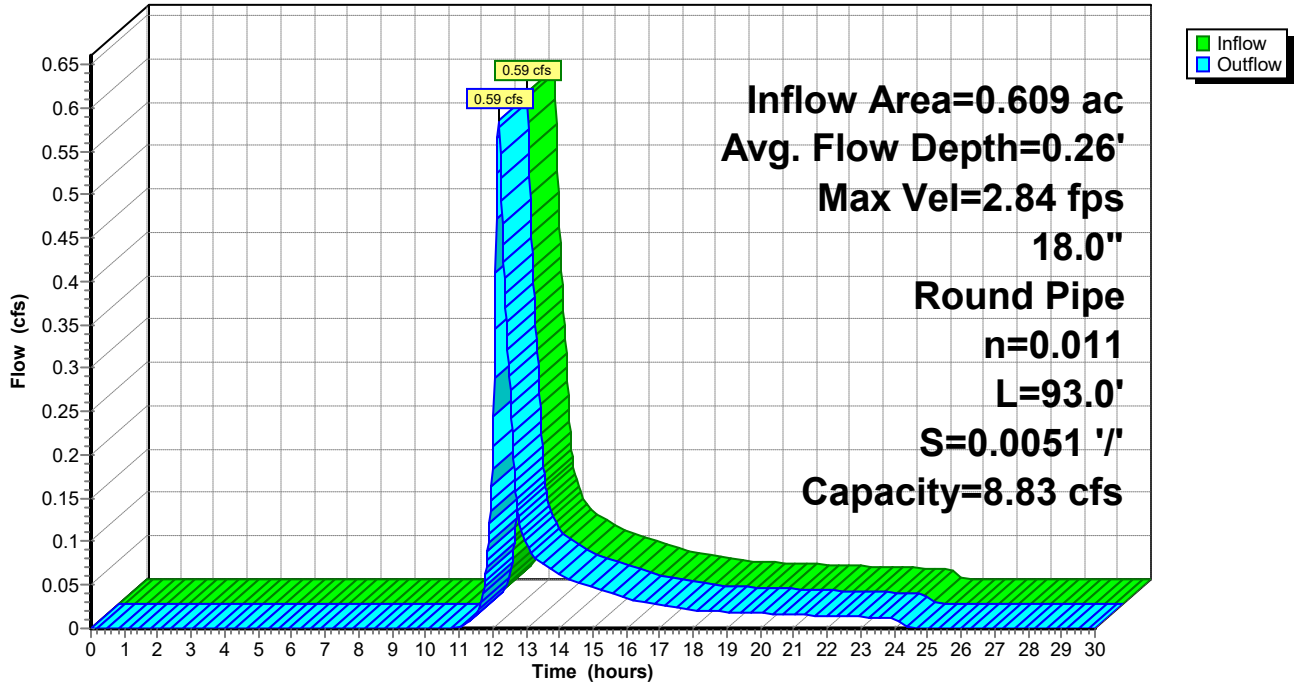
Peak Storage= 19 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.26'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.83 cfs

18.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 93.0' Slope= 0.0051 '/'
Inlet Invert= 23.59', Outlet Invert= 23.12'



Reach 20R: MH_1

Hydrograph



Summary for Reach 21R: MH_2

[52] Hint: Inlet/Outlet conditions not evaluated

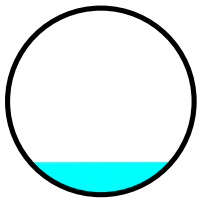
[61] Hint: Exceeded Reach 20R outlet invert by 0.26' @ 12.20 hrs

Inflow Area =	0.609 ac, 56.45% Impervious, Inflow Depth = 1.06"	for 2-Year event
Inflow =	0.59 cfs @ 12.19 hrs, Volume=	0.054 af
Outflow =	0.59 cfs @ 12.20 hrs, Volume=	0.054 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 2.82 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.15 fps, Avg. Travel Time= 0.5 min

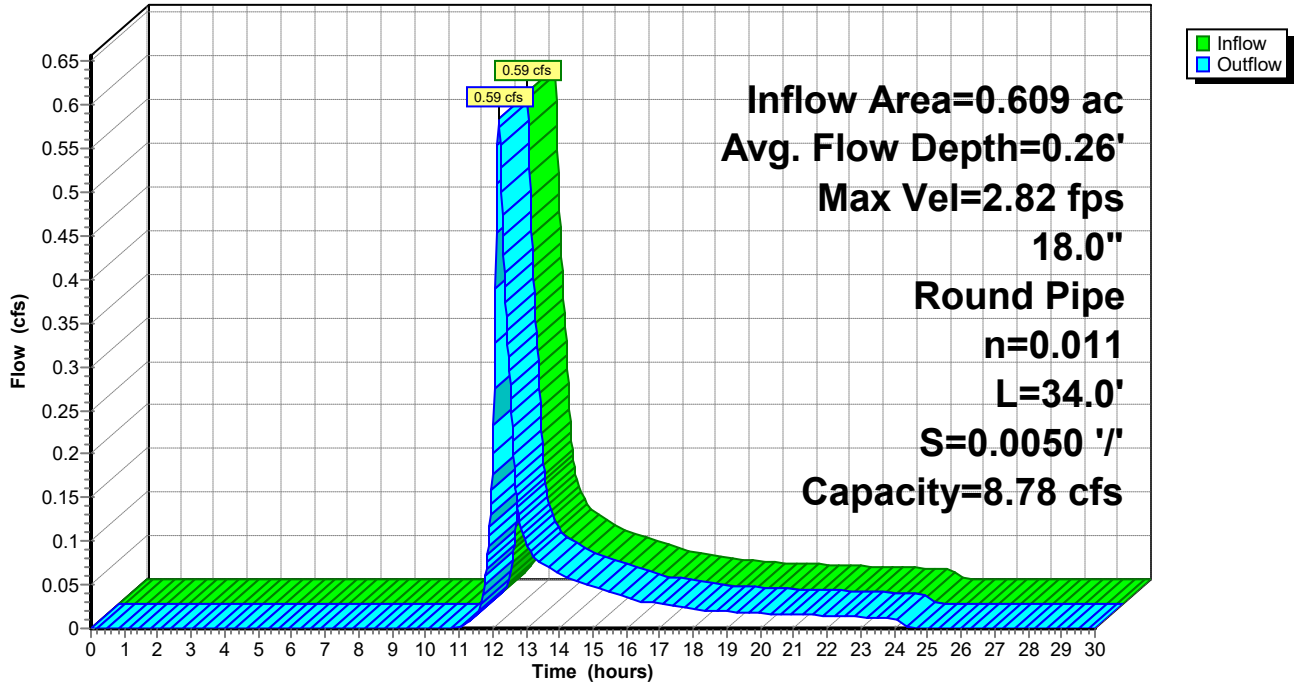
Peak Storage= 7 cf @ 12.19 hrs
 Average Depth at Peak Storage= 0.26'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.78 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 34.0' Slope= 0.0050 '/'
 Inlet Invert= 23.12', Outlet Invert= 22.95'



Reach 21R: MH_2

Hydrograph



Summary for Reach 22R: CB_1

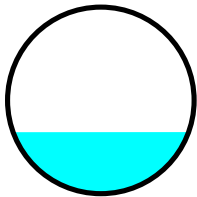
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.887 ac, 60.21% Impervious, Inflow Depth = 1.23" for 2-Year event
 Inflow = 2.95 cfs @ 12.05 hrs, Volume= 0.194 af
 Outflow = 2.93 cfs @ 12.05 hrs, Volume= 0.194 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 5.74 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.14 fps, Avg. Travel Time= 0.4 min

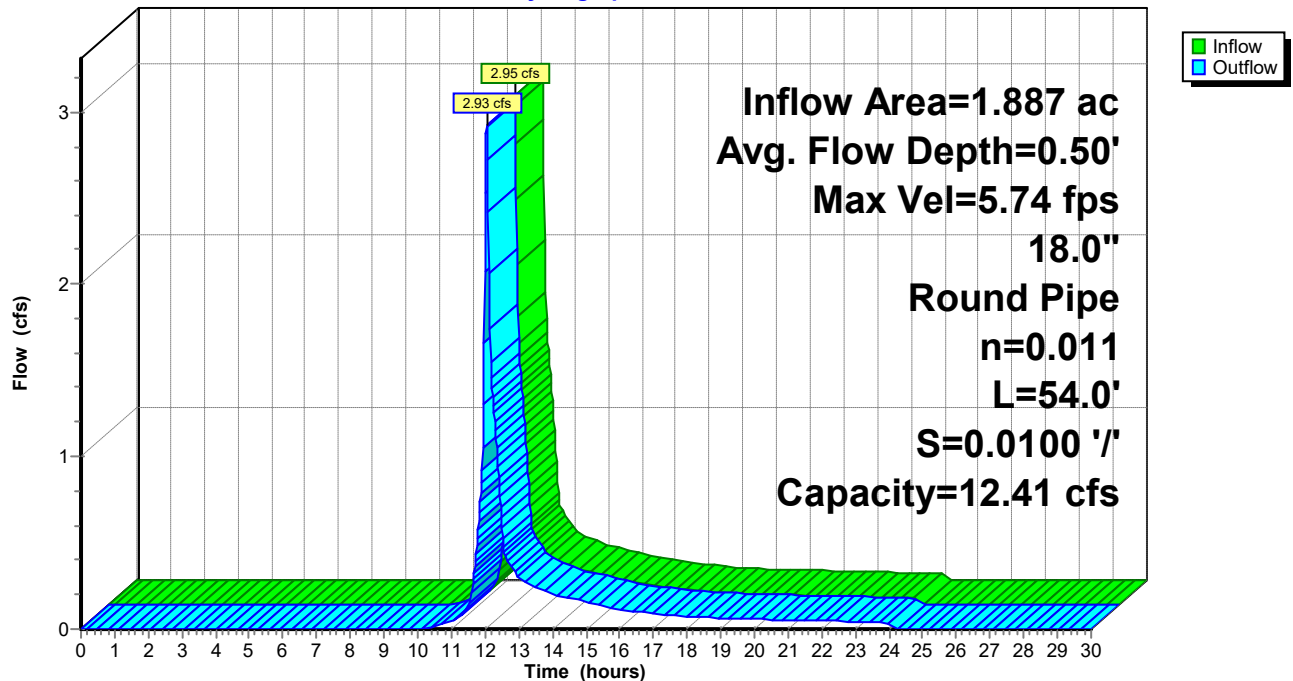
Peak Storage= 28 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.50'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 54.0' Slope= 0.0100 '/'
 Inlet Invert= 27.89', Outlet Invert= 27.35'



Reach 22R: CB_1

Hydrograph



Summary for Reach 23R: CB_2

[52] Hint: Inlet/Outlet conditions not evaluated

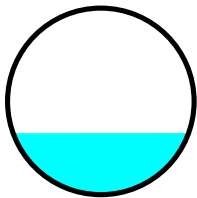
[62] Hint: Exceeded Reach 22R OUTLET depth by 0.01' @ 12.12 hrs

Inflow Area =	1.887 ac, 60.21% Impervious, Inflow Depth = 1.23"	for 2-Year event
Inflow =	2.93 cfs @ 12.05 hrs, Volume=	0.194 af
Outflow =	2.92 cfs @ 12.06 hrs, Volume=	0.194 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 5.74 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.14 fps, Avg. Travel Time= 0.3 min

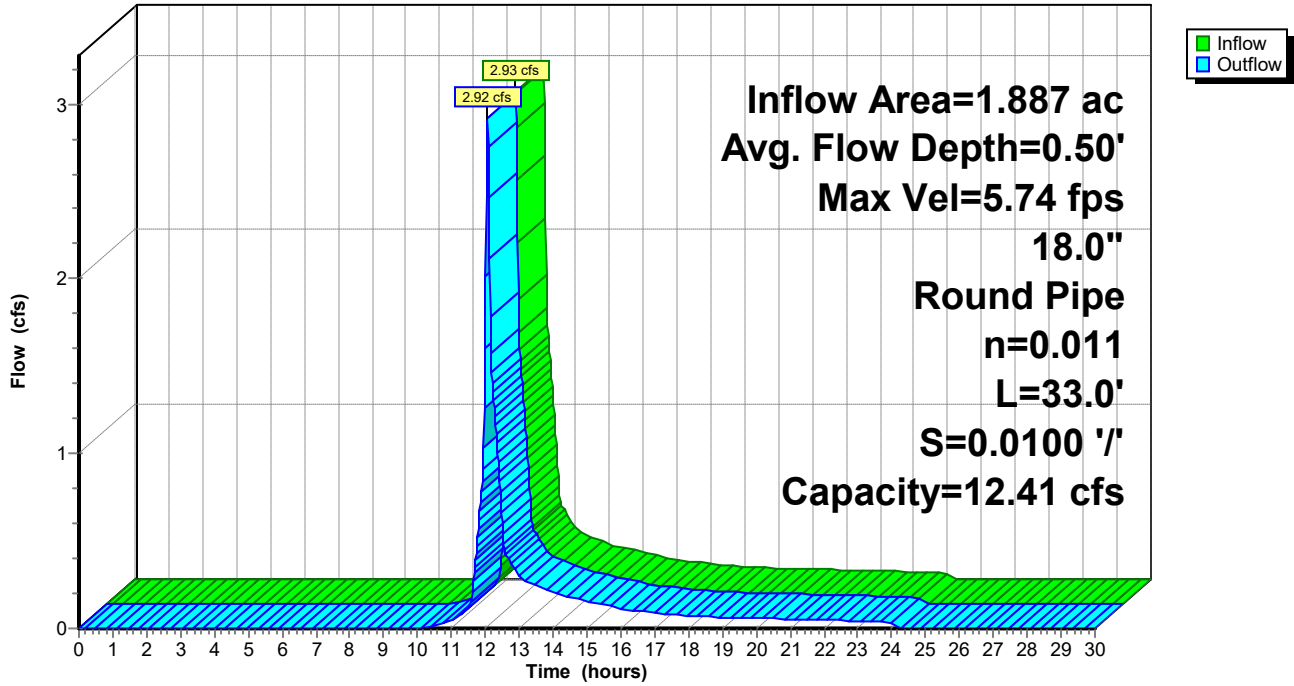
Peak Storage= 17 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.50'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 33.0' Slope= 0.0100 '/'
 Inlet Invert= 27.35', Outlet Invert= 27.02'



Reach 23R: CB_2

Hydrograph



Summary for Reach 24R: CB_3

[52] Hint: Inlet/Outlet conditions not evaluated

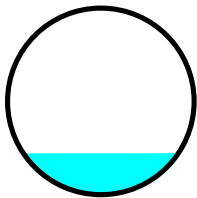
[62] Hint: Exceeded Reach 23R OUTLET depth by 0.01' @ 24.10 hrs

Inflow Area =	1.887 ac, 60.21% Impervious,	Inflow Depth = 1.23"	for 2-Year event
Inflow =	2.92 cfs @ 12.06 hrs,	Volume=	0.194 af
Outflow =	2.89 cfs @ 12.07 hrs,	Volume=	0.194 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 5.58 fps, Min. Travel Time= 0.3 min
 Avg. Velocity = 2.05 fps, Avg. Travel Time= 0.8 min

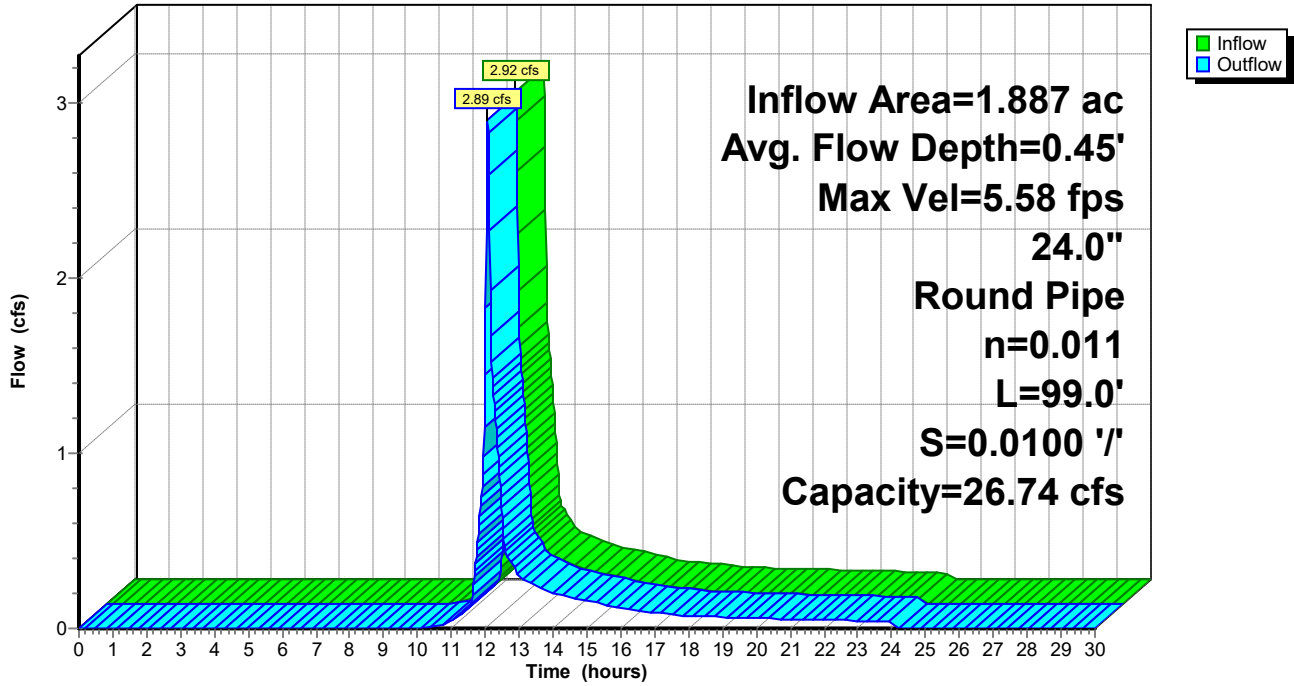
Peak Storage= 52 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.45'
 Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 26.74 cfs

24.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 99.0' Slope= 0.0100 '/'
 Inlet Invert= 27.02', Outlet Invert= 26.03'



Reach 24R: CB_3

Hydrograph



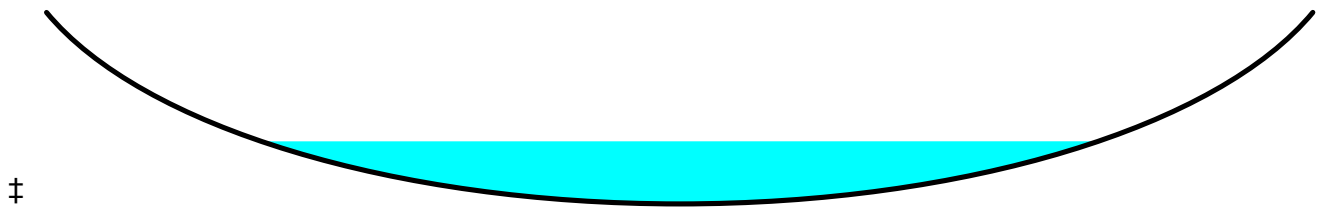
Summary for Reach 25R: SWALE

Inflow Area = 3.024 ac, 47.92% Impervious, Inflow Depth = 0.75" for 2-Year event
Inflow = 1.28 cfs @ 12.48 hrs, Volume= 0.188 af
Outflow = 1.28 cfs @ 12.51 hrs, Volume= 0.188 af, Atten= 0%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.56 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.17 fps, Avg. Travel Time= 2.1 min

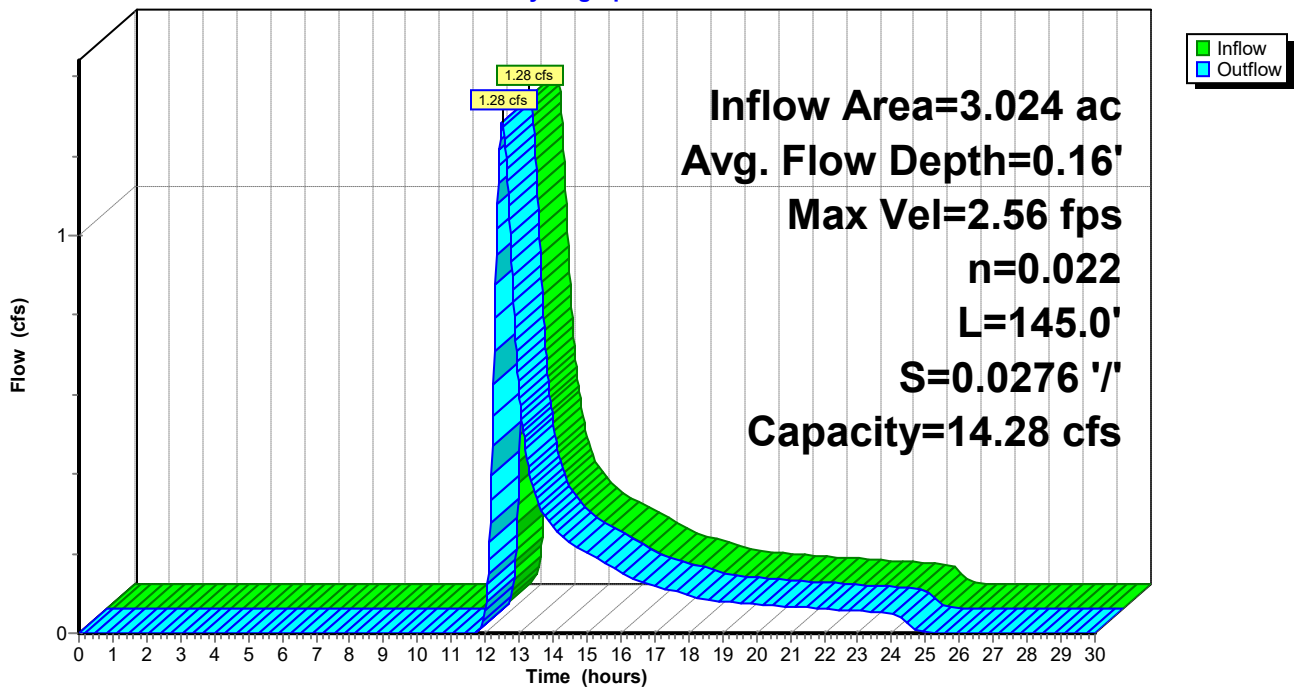
Peak Storage= 73 cf @ 12.49 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 0.50' Flow Area= 2.7 sf, Capacity= 14.28 cfs

8.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 145.0' Slope= 0.0276 '/'
Inlet Invert= 34.00', Outlet Invert= 30.00'



Reach 25R: SWALE

Hydrograph



Summary for Pond 16P: INFILTRATION BASIN

Inflow Area = 10.298 ac, 45.73% Impervious, Inflow Depth = 0.77" for 2-Year event
 Inflow = 4.39 cfs @ 12.08 hrs, Volume= 0.664 af
 Outflow = 2.82 cfs @ 12.62 hrs, Volume= 0.664 af, Atten= 36%, Lag= 32.2 min
 Discarded = 2.82 cfs @ 12.62 hrs, Volume= 0.664 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Peak Elev= 22.17' @ 12.62 hrs Surf.Area= 14,756 sf Storage= 2,513 cf

Plug-Flow detention time= 5.7 min calculated for 0.664 af (100% of inflow)
 Center-of-Mass det. time= 5.7 min (890.9 - 885.2)

Volume	Invert	Avail.Storage	Storage Description
#1	22.00'	52,283 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

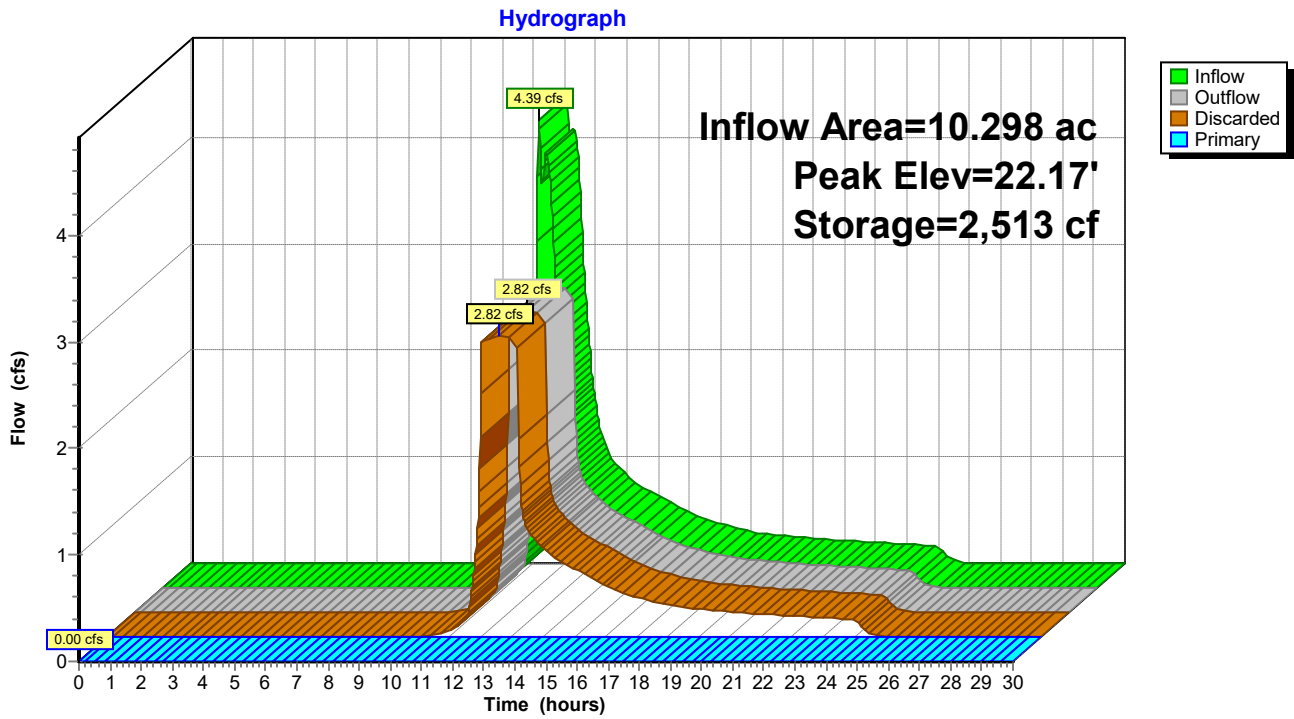
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	14,449	0	0
24.00	18,019	32,468	32,468
25.00	21,610	19,815	52,283

Device	Routing	Invert	Outlet Devices
#1	Discarded	22.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	23.75'	10.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=2.82 cfs @ 12.62 hrs HW=22.17' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 2.82 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=22.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 16P: INFILTRATION BASIN



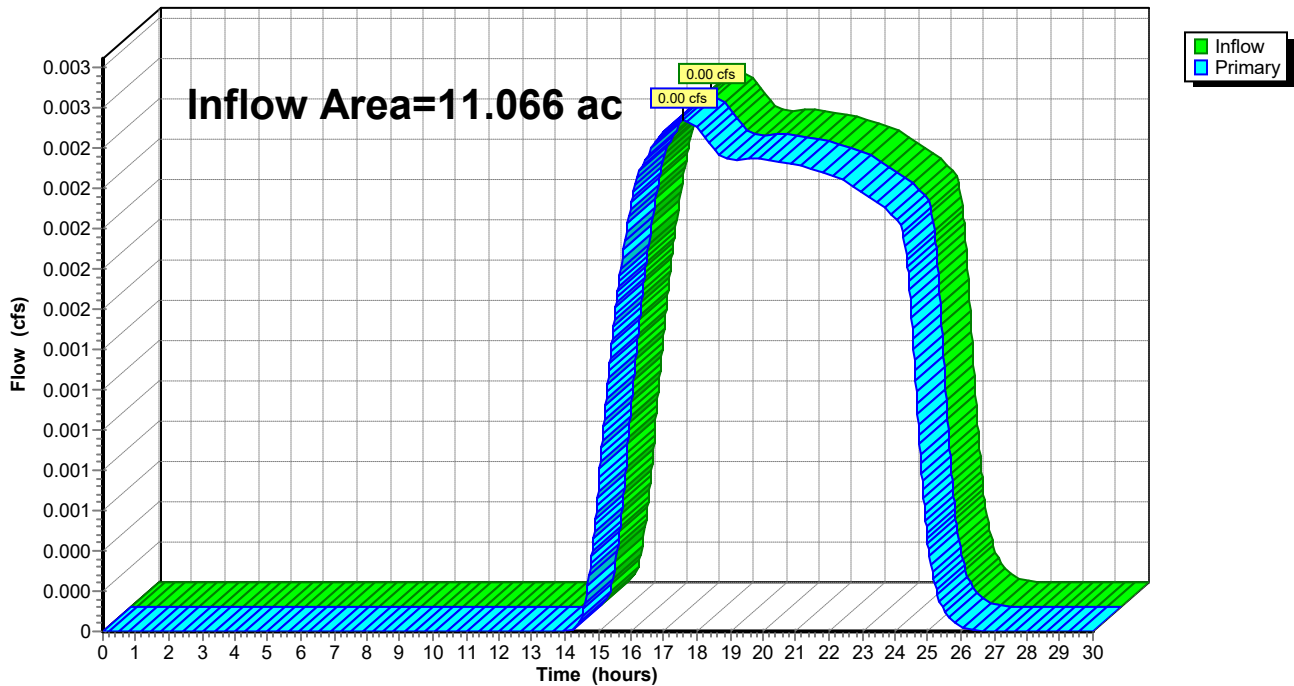
Summary for Link 17L: POST

Inflow Area = 11.066 ac, 43.37% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 17.56 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 17.56 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs

Link 17L: POST

Hydrograph



Baypointe CEDA

Type III 24-hr 10-Year Rainfall=4.70"

Prepared by {enter your company name here}

Printed 9/30/2021

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Page 33

Time span=0.00-30.00 hrs, dt=0.02 hrs, 1501 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 3: PRE	Runoff Area=483,573 sf 23.58% Impervious Runoff Depth=0.57" Flow Length=1,217' Tc=65.6 min CN=50 Runoff=1.78 cfs 0.531 af
Subcatchment 6S: POST EAST	Runoff Area=26,538 sf 56.45% Impervious Runoff Depth=1.97" Flow Length=518' Tc=11.2 min CN=72 Runoff=1.16 cfs 0.100 af
Subcatchment 7S: POST UNC	Runoff Area=33,460 sf 11.63% Impervious Runoff Depth=0.24" Flow Length=278' Slope=0.0700 '/' Tc=50.5 min CN=42 Runoff=0.03 cfs 0.015 af
Subcatchment 8S: POST CENTER	Runoff Area=18,063 sf 70.19% Impervious Runoff Depth=2.63" Flow Length=230' Tc=5.6 min CN=80 Runoff=1.30 cfs 0.091 af
Subcatchment 9S: POST WEST	Runoff Area=82,197 sf 60.21% Impervious Runoff Depth=2.21" Flow Length=541' Tc=2.8 min CN=75 Runoff=5.45 cfs 0.347 af
Subcatchment 10S: POST PARKING	Runoff Area=124,014 sf 44.37% Impervious Runoff Depth=1.46" Flow Length=575' Tc=21.1 min CN=65 Runoff=2.99 cfs 0.346 af
Subcatchment 12S: POST BPD	Runoff Area=131,718 sf 47.92% Impervious Runoff Depth=1.53" Flow Length=786' Tc=29.2 min CN=66 Runoff=2.92 cfs 0.385 af
Subcatchment 18S: POST BASIN	Runoff Area=66,040 sf 14.91% Impervious Runoff Depth=0.35" Tc=0.0 min UI Adjusted CN=45 Runoff=0.22 cfs 0.044 af
Reach 19R: CB_4	Avg. Flow Depth=0.37' Max Vel=3.48 fps Inflow=1.16 cfs 0.100 af 18.0" Round Pipe n=0.011 L=41.0' S=0.0051 '/' Capacity=8.88 cfs Outflow=1.16 cfs 0.100 af
Reach 20R: MH_1	Avg. Flow Depth=0.37' Max Vel=3.45 fps Inflow=1.16 cfs 0.100 af 18.0" Round Pipe n=0.011 L=93.0' S=0.0051 '/' Capacity=8.83 cfs Outflow=1.15 cfs 0.100 af
Reach 21R: MH_2	Avg. Flow Depth=0.37' Max Vel=3.44 fps Inflow=1.15 cfs 0.100 af 18.0" Round Pipe n=0.011 L=34.0' S=0.0050 '/' Capacity=8.78 cfs Outflow=1.15 cfs 0.100 af
Reach 22R: CB_1	Avg. Flow Depth=0.70' Max Vel=6.78 fps Inflow=5.45 cfs 0.347 af 18.0" Round Pipe n=0.011 L=54.0' S=0.0100 '/' Capacity=12.41 cfs Outflow=5.42 cfs 0.347 af
Reach 23R: CB_2	Avg. Flow Depth=0.69' Max Vel=6.77 fps Inflow=5.42 cfs 0.347 af 18.0" Round Pipe n=0.011 L=33.0' S=0.0100 '/' Capacity=12.41 cfs Outflow=5.38 cfs 0.347 af
Reach 24R: CB_3	Avg. Flow Depth=0.61' Max Vel=6.66 fps Inflow=5.38 cfs 0.347 af 24.0" Round Pipe n=0.011 L=99.0' S=0.0100 '/' Capacity=26.74 cfs Outflow=5.35 cfs 0.347 af
Reach 25R: SWALE	Avg. Flow Depth=0.24' Max Vel=3.30 fps Inflow=2.92 cfs 0.385 af n=0.022 L=145.0' S=0.0276 '/' Capacity=14.28 cfs Outflow=2.92 cfs 0.385 af
Pond 16P: INFILTRATION BASIN	Peak Elev=22.91' Storage=13,853 cf Inflow=9.27 cfs 1.313 af Discarded=3.08 cfs 1.313 af Primary=0.00 cfs 0.000 af Outflow=3.08 cfs 1.313 af

Baypointe CEDA

Type III 24-hr 10-Year Rainfall=4.70"

Prepared by {enter your company name here}

Printed 9/30/2021

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Page 34

Link 17L: POST

Inflow=0.03 cfs 0.015 af
Primary=0.03 cfs 0.015 af

Total Runoff Area = 22.167 ac Runoff Volume = 1.859 af Average Runoff Depth = 1.01"
66.54% Pervious = 14.751 ac 33.46% Impervious = 7.417 ac

Summary for Subcatchment 3: PRE

Runoff = 1.78 cfs @ 13.13 hrs, Volume= 0.531 af, Depth= 0.57"

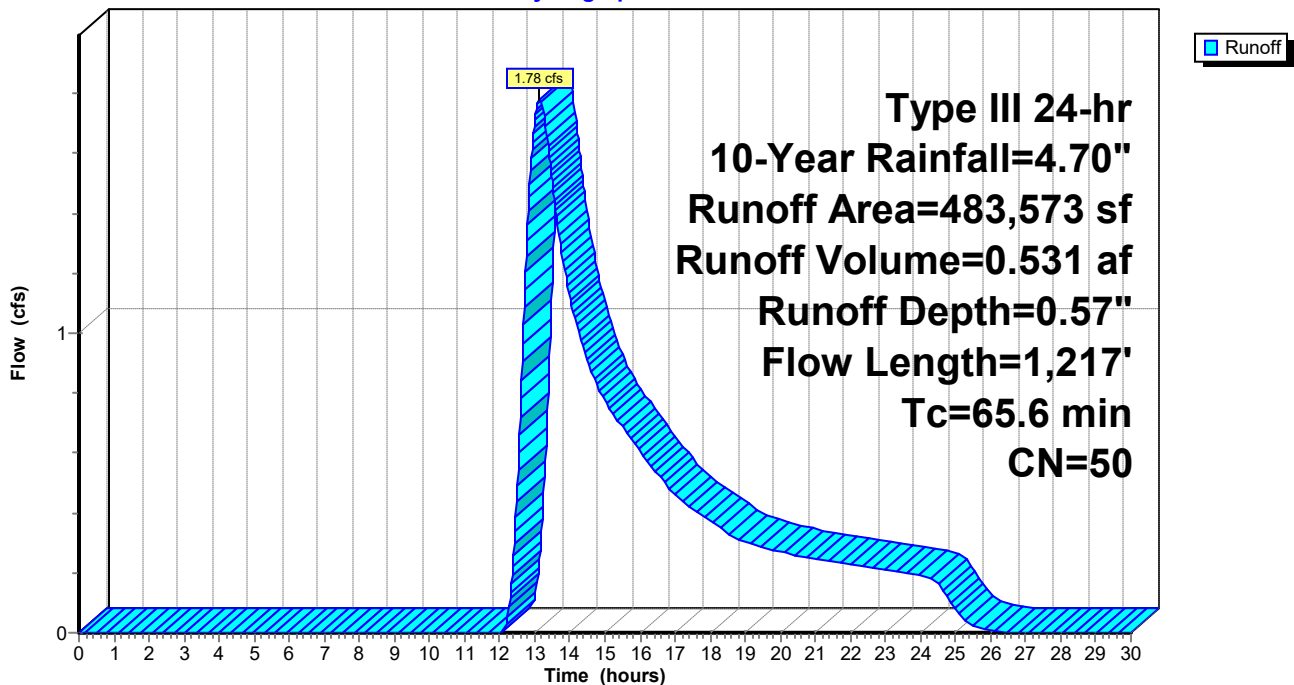
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
130,944	30	Woods, Good, HSG A
238,593	39	>75% Grass cover, Good, HSG A
* 112,792	98	Roads/Driveways/SWalk
* 1,244	98	Existing Roofs
483,573	50	Weighted Average
369,537	36	76.42% Pervious Area
114,036	98	23.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.0	267	0.0500	0.08		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	224	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
5.3	726	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
65.6	1,217	Total			

Subcatchment 3: PRE

Hydrograph



Summary for Subcatchment 6S: POST EAST

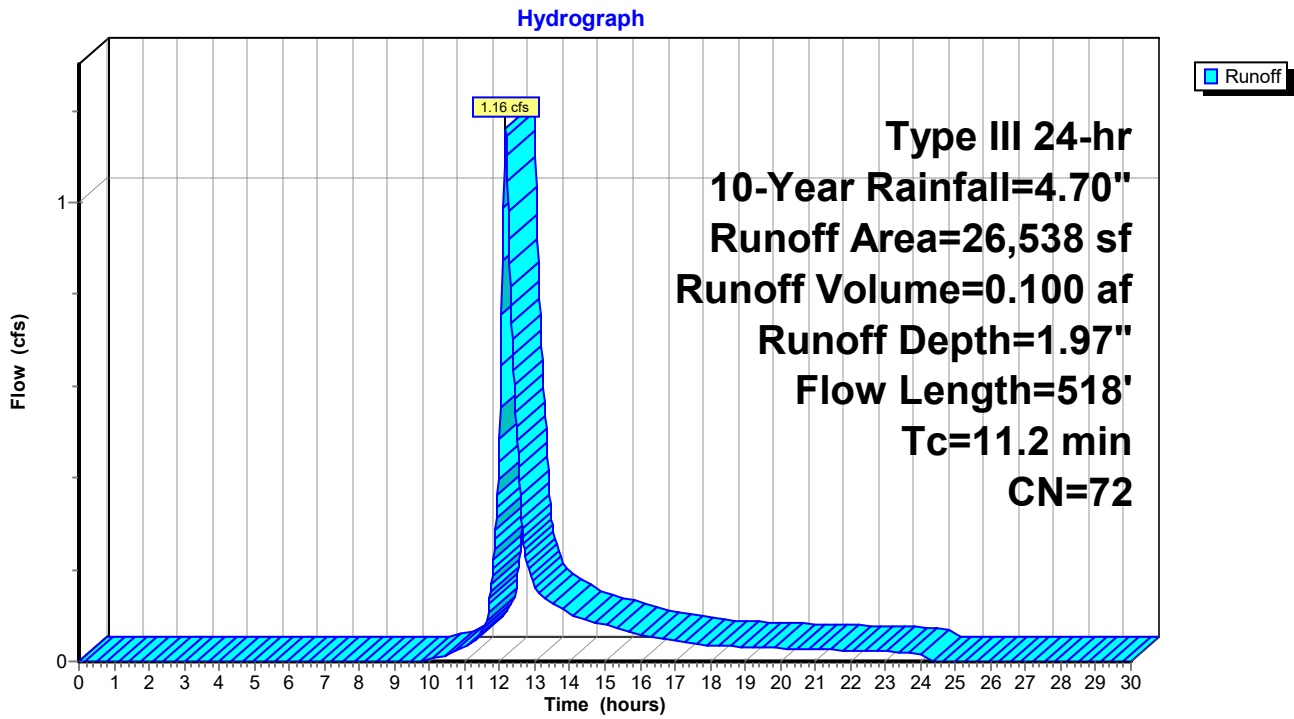
Runoff = 1.16 cfs @ 12.16 hrs, Volume= 0.100 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
14,982	98	Unconnected pavement, HSG A
11,556	39	>75% Grass cover, Good, HSG A
26,538	72	Weighted Average
11,556	39	43.55% Pervious Area
14,982	98	56.45% Impervious Area
14,982		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	119	0.0700	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.7	182	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	48	0.1700	6.64		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.6	169	0.0100	4.54	3.56	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Concrete pipe, bends & connections
11.2	518	Total			

Subcatchment 6S: POST EAST



Summary for Subcatchment 7S: POST UNC

Runoff = 0.03 cfs @ 13.29 hrs, Volume= 0.015 af, Depth= 0.24"

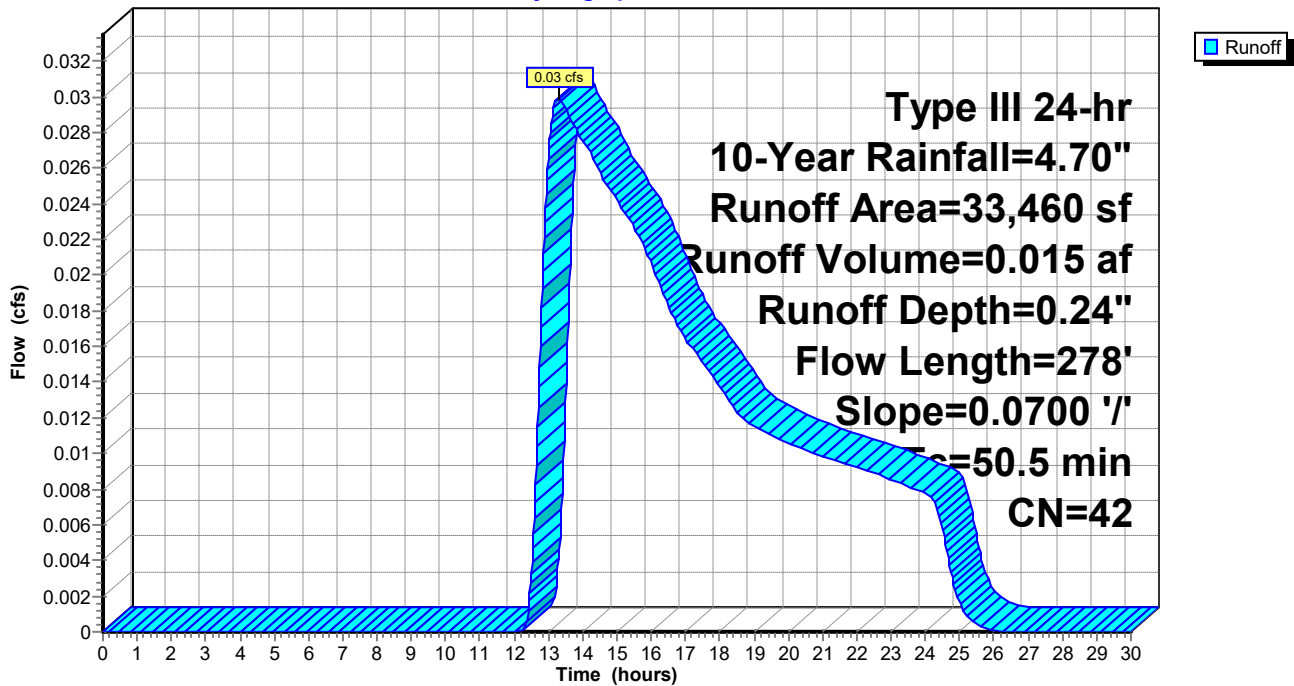
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
14,286	30	Woods, Good, HSG A
3,892	98	Roofs, HSG A
15,282	39	>75% Grass cover, Good, HSG A
33,460	42	Weighted Average
29,568	35	88.37% Pervious Area
3,892	98	11.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.5	278	0.0700	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"

Subcatchment 7S: POST UNC

Hydrograph



Summary for Subcatchment 8S: POST CENTER

Runoff = 1.30 cfs @ 12.08 hrs, Volume= 0.091 af, Depth= 2.63"

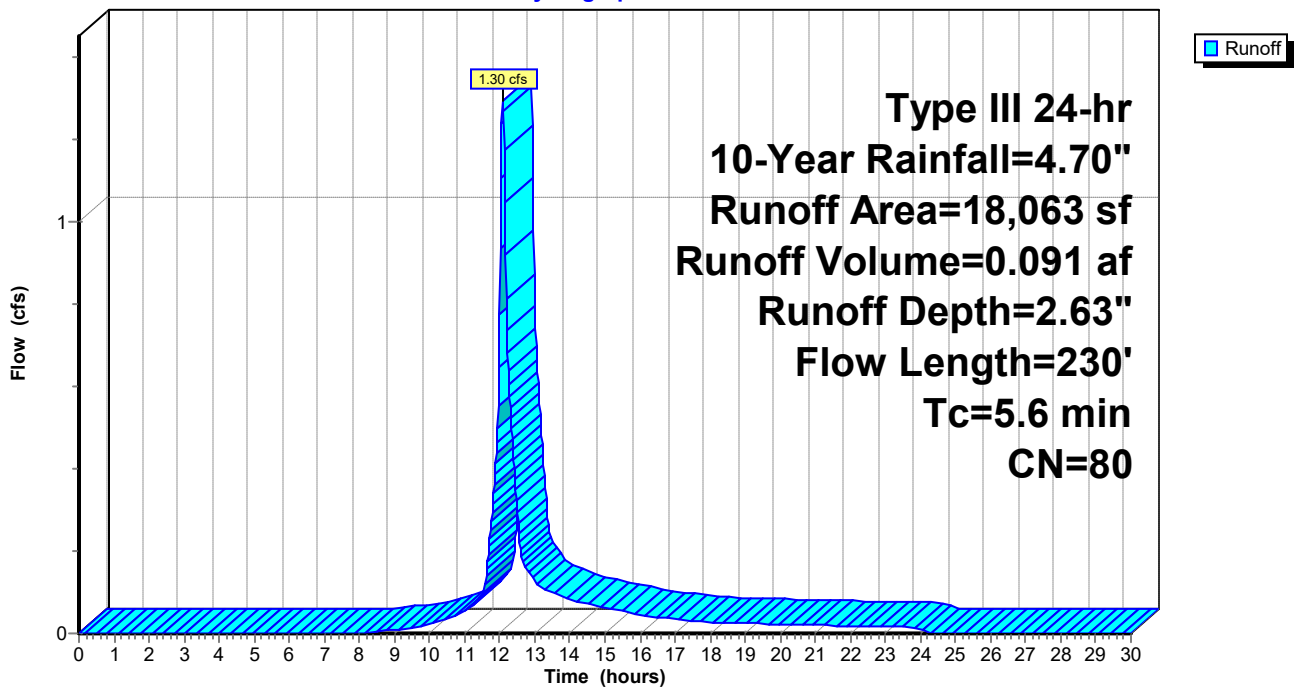
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
12,678	98	Unconnected pavement, HSG A
5,385	39	>75% Grass cover, Good, HSG A
18,063	80	Weighted Average
5,385	39	29.81% Pervious Area
12,678	98	70.19% Impervious Area
12,678		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	38	0.0500	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.1	192	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.6	230	Total			

Subcatchment 8S: POST CENTER

Hydrograph



Summary for Subcatchment 9S: POST WEST

Runoff = 5.45 cfs @ 12.05 hrs, Volume= 0.347 af, Depth= 2.21"

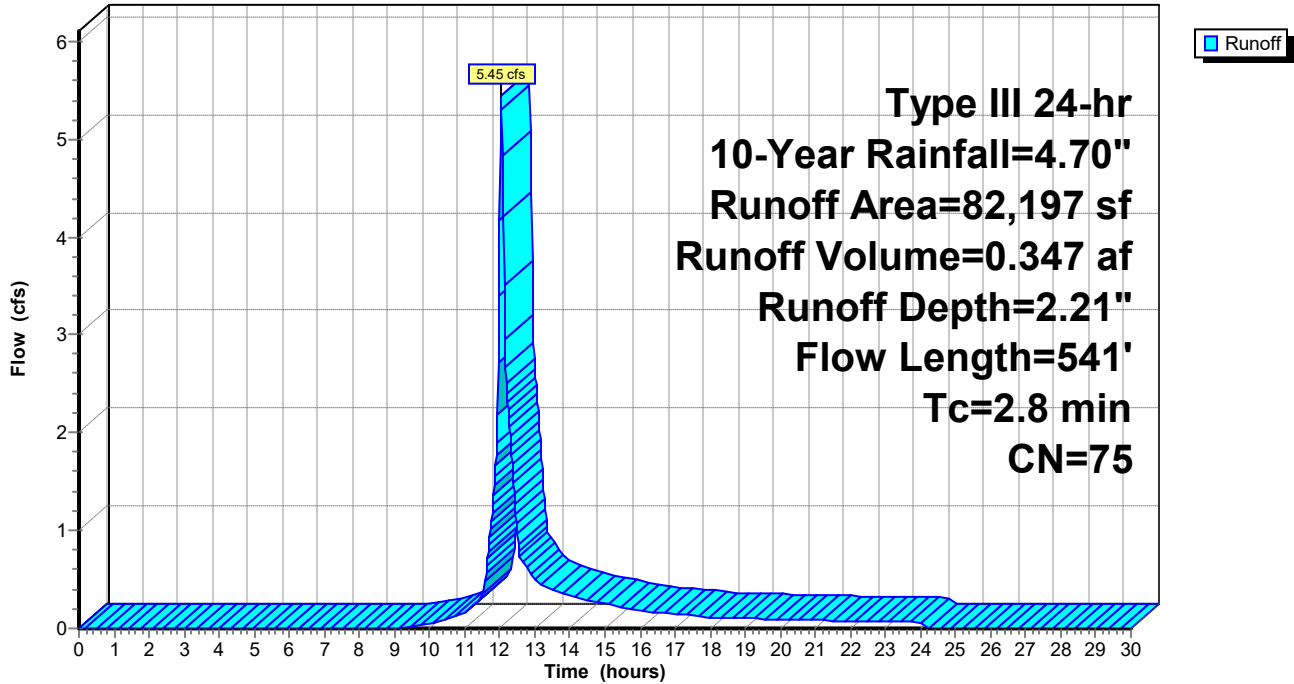
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
49,494	98	Unconnected pavement, HSG A
32,703	39	>75% Grass cover, Good, HSG A
82,197	75	Weighted Average
32,703	39	39.79% Pervious Area
49,494	98	60.21% Impervious Area
49,494		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	85	0.0200	1.35		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
1.5	266	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	20	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.1	71	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.2	99	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
2.8	541	Total			

Subcatchment 9S: POST WEST

Hydrograph



Summary for Subcatchment 10S: POST PARKING

Runoff = 2.99 cfs @ 12.32 hrs, Volume= 0.346 af, Depth= 1.46"

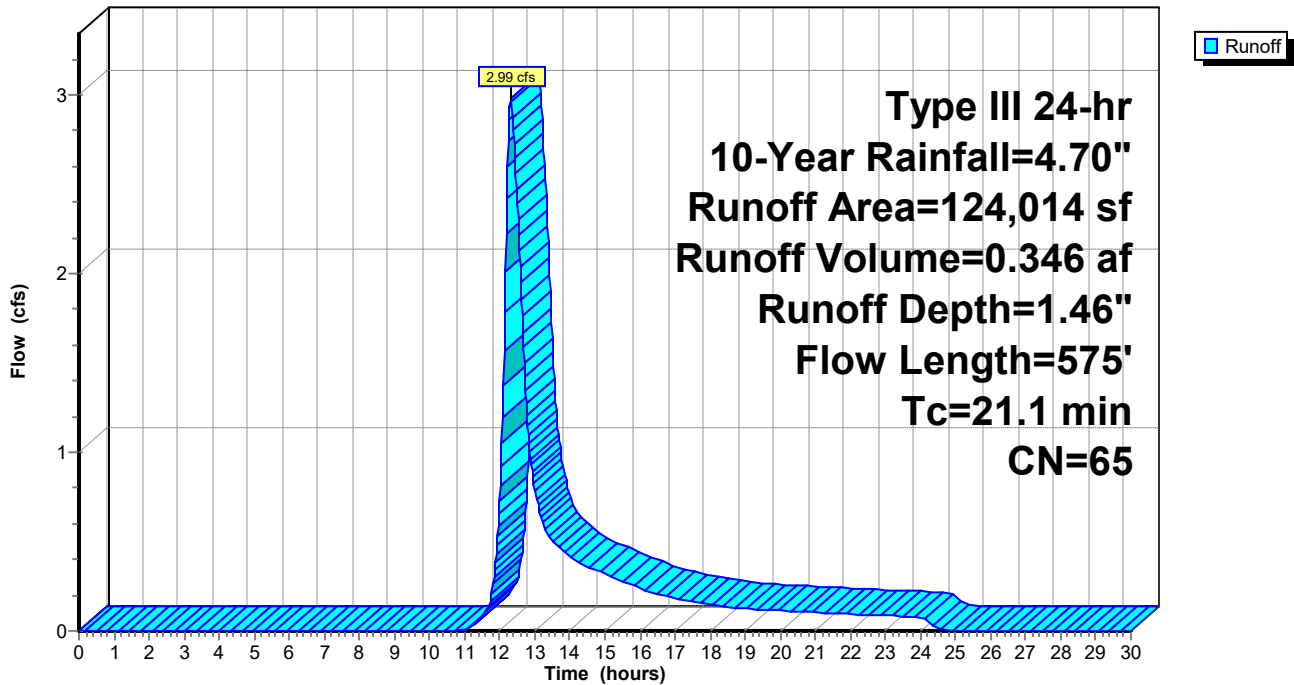
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
* 14,043	98	Existing Impervious, HSG A
68,984	39	>75% Grass cover, Good, HSG A
40,987	98	Unconnected pavement, HSG A
124,014	65	Weighted Average
68,984	39	55.63% Pervious Area
55,030	98	44.37% Impervious Area
40,987		74.48% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	212	0.0400	0.18		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.7	363	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
21.1	575	Total			

Subcatchment 10S: POST PARKING

Hydrograph



Summary for Subcatchment 12S: POST BPD

Runoff = 2.92 cfs @ 12.44 hrs, Volume= 0.385 af, Depth= 1.53"

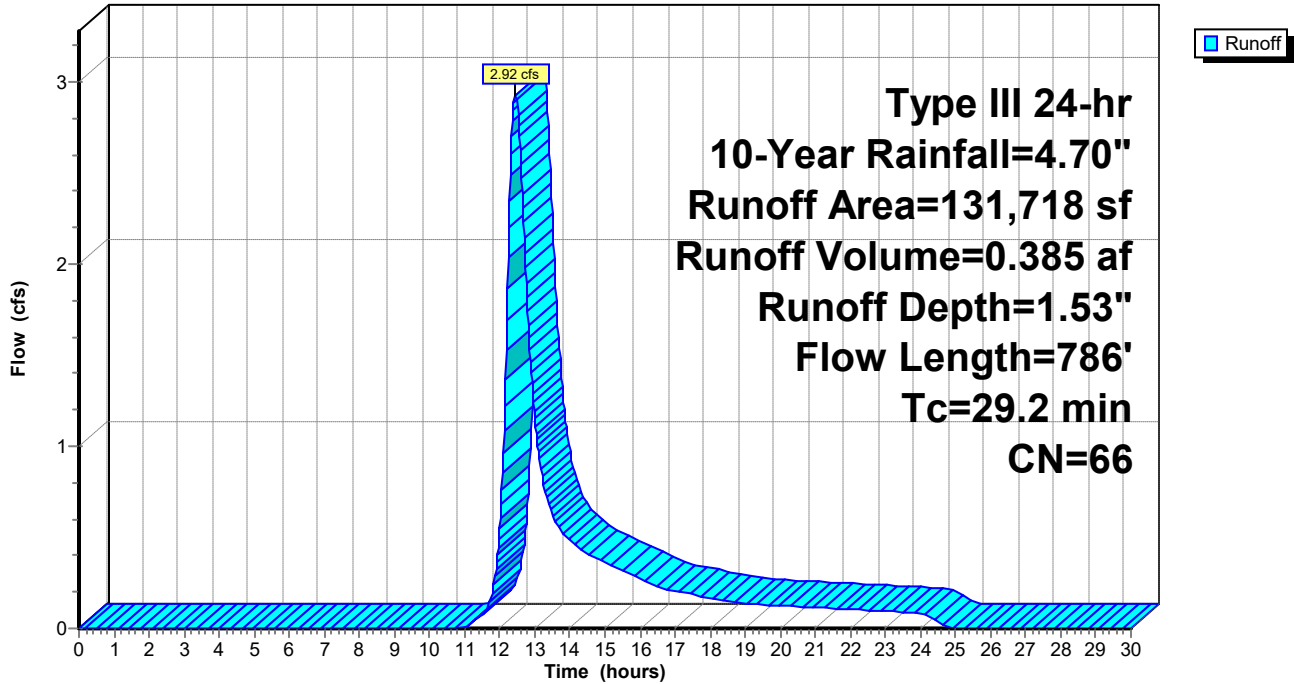
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
* 43,950	98	Existing Impervious, HSG A
56,854	39	>75% Grass cover, Good, HSG A
11,751	30	Woods, Good, HSG A
19,163	98	Unconnected pavement, HSG A
131,718	66	Weighted Average
68,605	37	52.08% Pervious Area
63,113	98	47.92% Impervious Area
19,163		30.36% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	225	0.0200	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.4	303	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	113	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.4	145	0.0300	5.59	14.90	Parabolic Channel, W=8.00' D=0.50' Area=2.7 sf Perim=8.1' n= 0.022 Earth, clean & straight
29.2	786	Total			

Subcatchment 12S: POST BPD

Hydrograph



Summary for Subcatchment 18S: POST BASIN

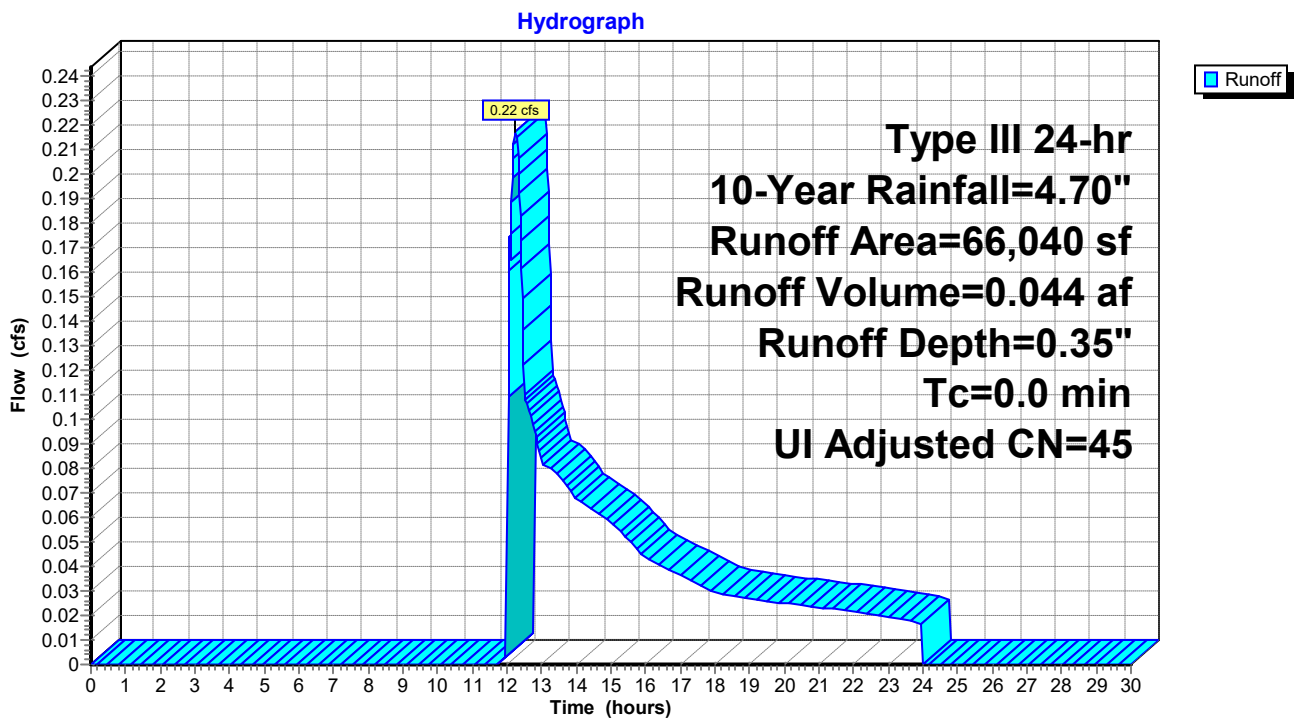
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.22 cfs @ 12.25 hrs, Volume= 0.044 af, Depth= 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Adj	Description
*	3,821	98		Existing Roof, HSG A
	6,024	98		Unconnected pavement, HSG A
	56,195	39		>75% Grass cover, Good, HSG A
	66,040	48	45	Weighted Average, UI Adjusted
	56,195	39	39	85.09% Pervious Area
	9,845	98	98	14.91% Impervious Area
	6,024			61.19% Unconnected

Subcatchment 18S: POST BASIN



Summary for Reach 19R: CB_4

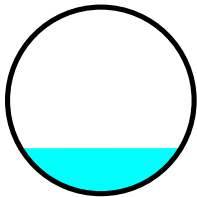
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.609 ac, 56.45% Impervious, Inflow Depth = 1.97" for 10-Year event
 Inflow = 1.16 cfs @ 12.16 hrs, Volume= 0.100 af
 Outflow = 1.16 cfs @ 12.17 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 3.48 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.34 fps, Avg. Travel Time= 0.5 min

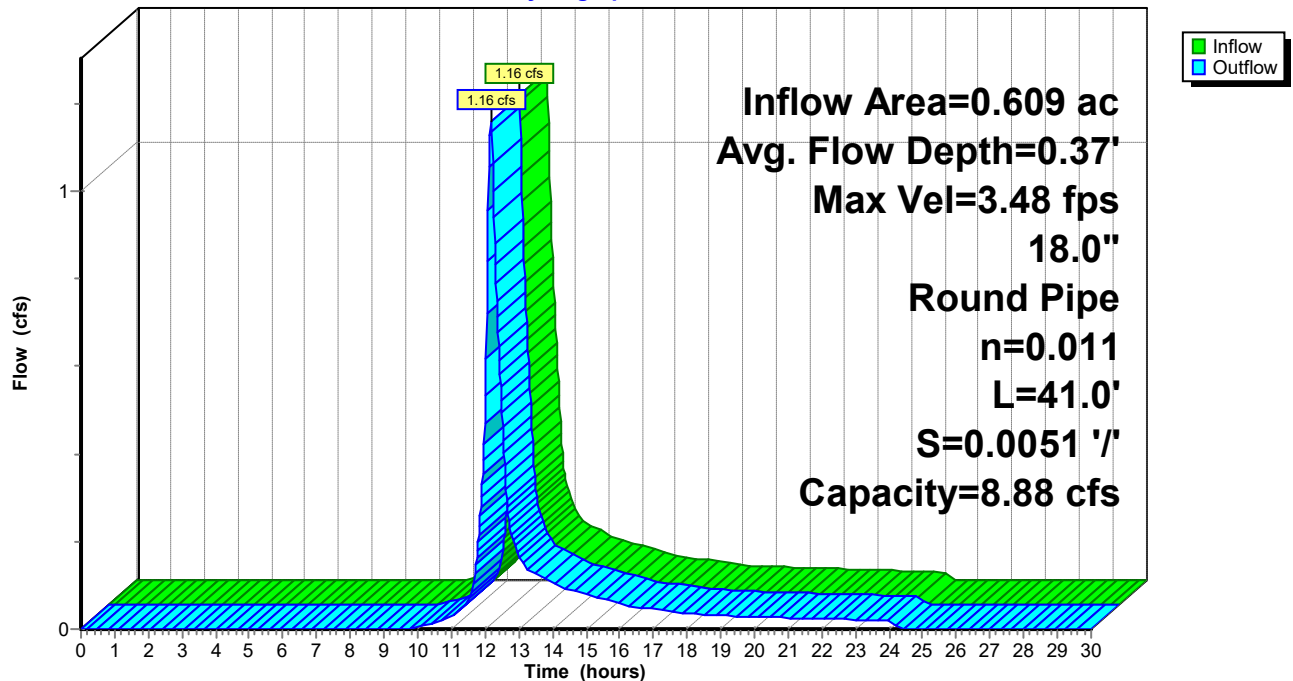
Peak Storage= 14 cf @ 12.16 hrs
 Average Depth at Peak Storage= 0.37'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.88 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 41.0' Slope= 0.0051 '/'
 Inlet Invert= 23.80', Outlet Invert= 23.59'



Reach 19R: CB_4

Hydrograph



Summary for Reach 20R: MH_1

[52] Hint: Inlet/Outlet conditions not evaluated

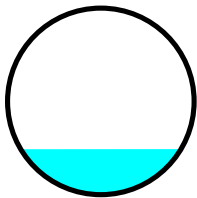
[62] Hint: Exceeded Reach 19R OUTLET depth by 0.01' @ 12.24 hrs

Inflow Area =	0.609 ac, 56.45% Impervious, Inflow Depth = 1.97"	for 10-Year event
Inflow =	1.16 cfs @ 12.17 hrs, Volume=	0.100 af
Outflow =	1.15 cfs @ 12.18 hrs, Volume=	0.100 af, Atten= 0%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 3.45 fps, Min. Travel Time= 0.4 min
 Avg. Velocity = 1.33 fps, Avg. Travel Time= 1.2 min

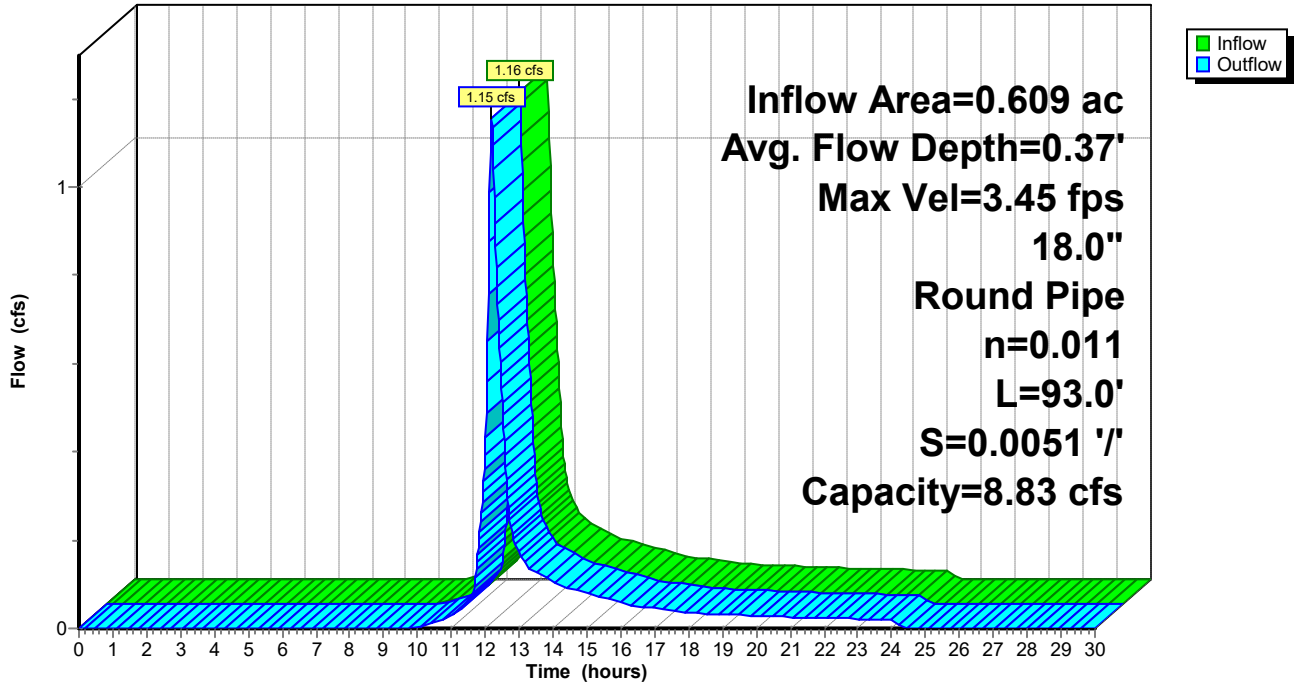
Peak Storage= 31 cf @ 12.17 hrs
 Average Depth at Peak Storage= 0.37'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.83 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 93.0' Slope= 0.0051 '/'
 Inlet Invert= 23.59', Outlet Invert= 23.12'



Reach 20R: MH_1

Hydrograph



Summary for Reach 21R: MH_2

[52] Hint: Inlet/Outlet conditions not evaluated

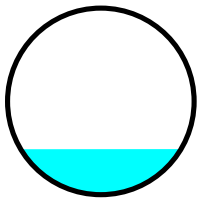
[62] Hint: Exceeded Reach 20R OUTLET depth by 0.01' @ 12.26 hrs

Inflow Area =	0.609 ac, 56.45% Impervious,	Inflow Depth = 1.97"	for 10-Year event
Inflow =	1.15 cfs @ 12.18 hrs,	Volume=	0.100 af
Outflow =	1.15 cfs @ 12.19 hrs,	Volume=	0.100 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 3.44 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.33 fps, Avg. Travel Time= 0.4 min

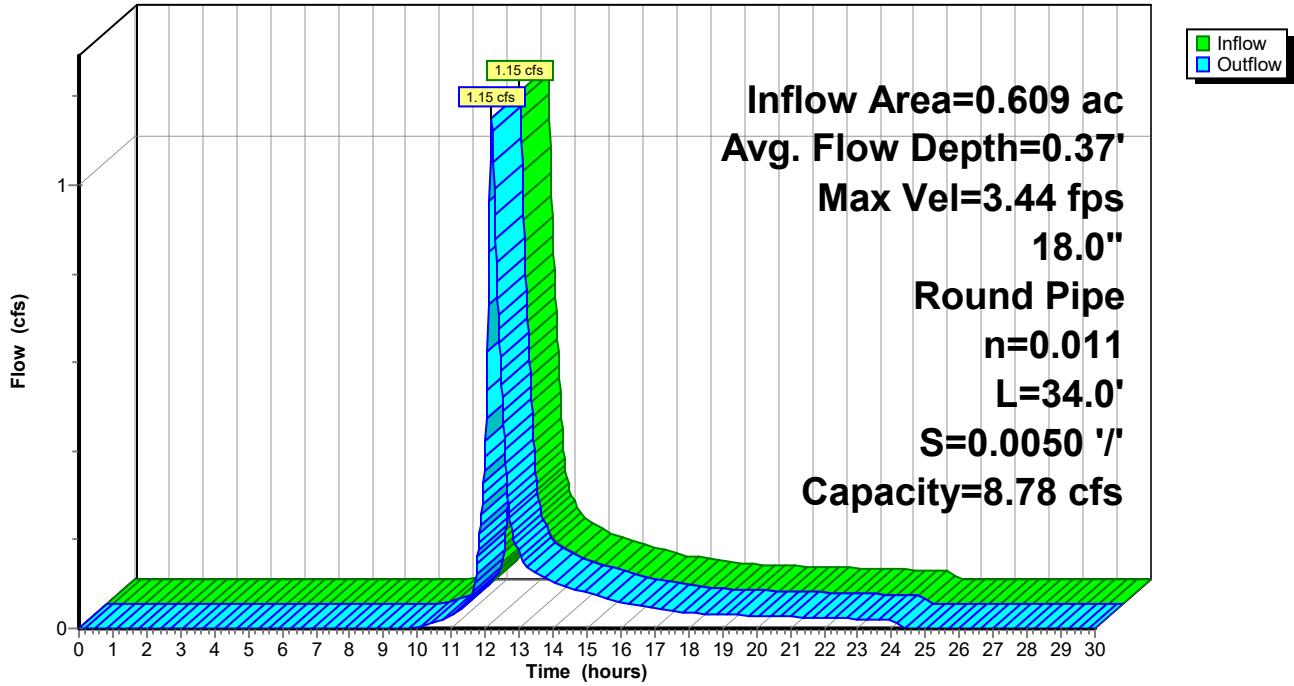
Peak Storage= 11 cf @ 12.18 hrs
 Average Depth at Peak Storage= 0.37'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.78 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 34.0' Slope= 0.0050 '/'
 Inlet Invert= 23.12', Outlet Invert= 22.95'



Reach 21R: MH_2

Hydrograph



Summary for Reach 22R: CB_1

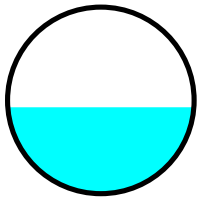
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.887 ac, 60.21% Impervious, Inflow Depth = 2.21" for 10-Year event
 Inflow = 5.45 cfs @ 12.05 hrs, Volume= 0.347 af
 Outflow = 5.42 cfs @ 12.05 hrs, Volume= 0.347 af, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 6.78 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.44 fps, Avg. Travel Time= 0.4 min

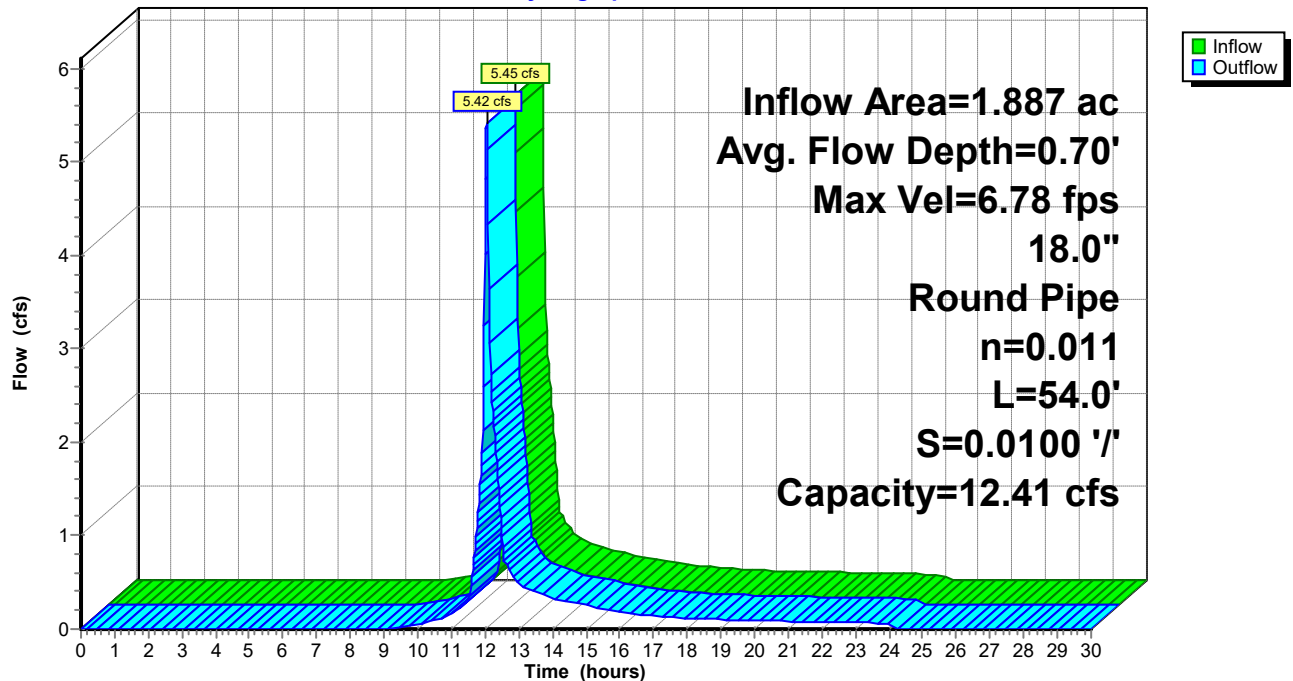
Peak Storage= 43 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.70'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 54.0' Slope= 0.0100 '/'
 Inlet Invert= 27.89', Outlet Invert= 27.35'



Reach 22R: CB_1

Hydrograph



Summary for Reach 23R: CB_2

[52] Hint: Inlet/Outlet conditions not evaluated

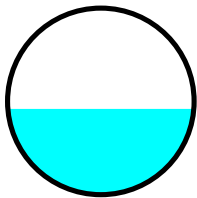
[62] Hint: Exceeded Reach 22R OUTLET depth by 0.01' @ 12.12 hrs

Inflow Area =	1.887 ac, 60.21% Impervious, Inflow Depth = 2.21"	for 10-Year event
Inflow =	5.42 cfs @ 12.05 hrs, Volume=	0.347 af
Outflow =	5.38 cfs @ 12.05 hrs, Volume=	0.347 af, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 6.77 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.44 fps, Avg. Travel Time= 0.2 min

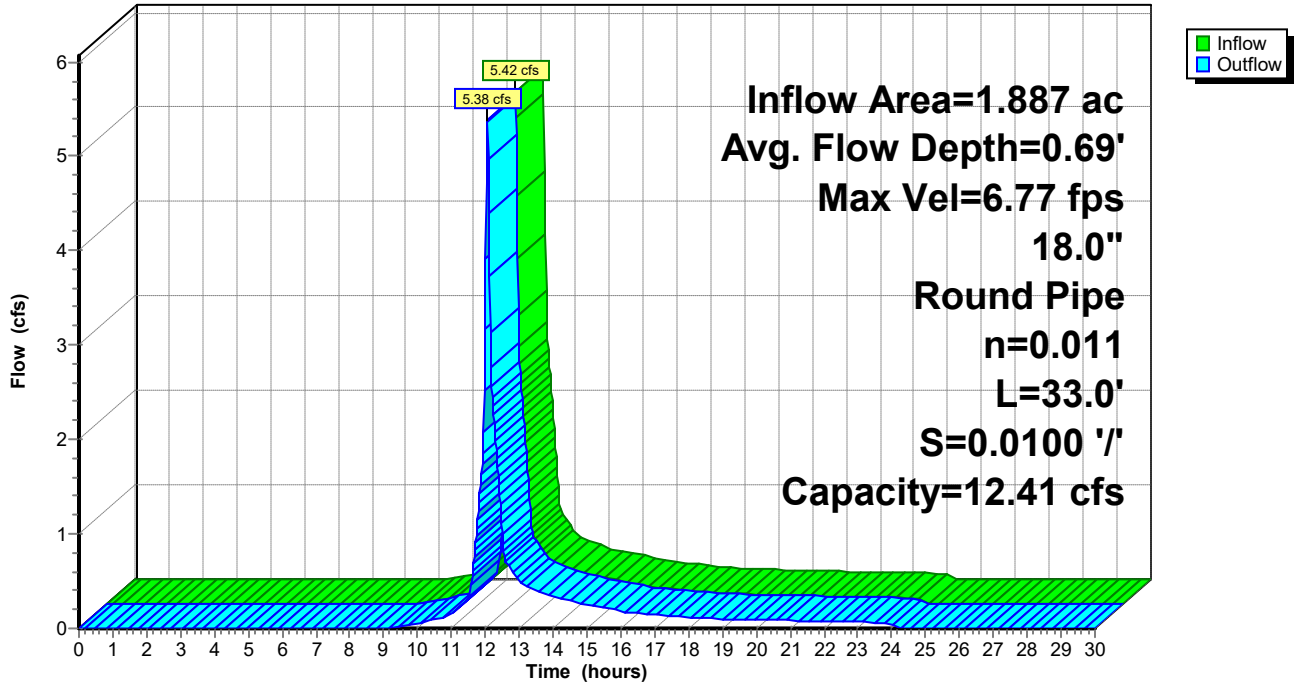
Peak Storage= 26 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.69'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 33.0' Slope= 0.0100 '/'
 Inlet Invert= 27.35', Outlet Invert= 27.02'



Reach 23R: CB_2

Hydrograph



Summary for Reach 24R: CB_3

[52] Hint: Inlet/Outlet conditions not evaluated

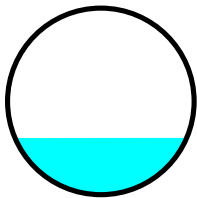
[62] Hint: Exceeded Reach 23R OUTLET depth by 0.01' @ 24.08 hrs

Inflow Area = 1.887 ac, 60.21% Impervious, Inflow Depth = 2.21" for 10-Year event
Inflow = 5.38 cfs @ 12.05 hrs, Volume= 0.347 af
Outflow = 5.35 cfs @ 12.06 hrs, Volume= 0.347 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 6.66 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.34 fps, Avg. Travel Time= 0.7 min

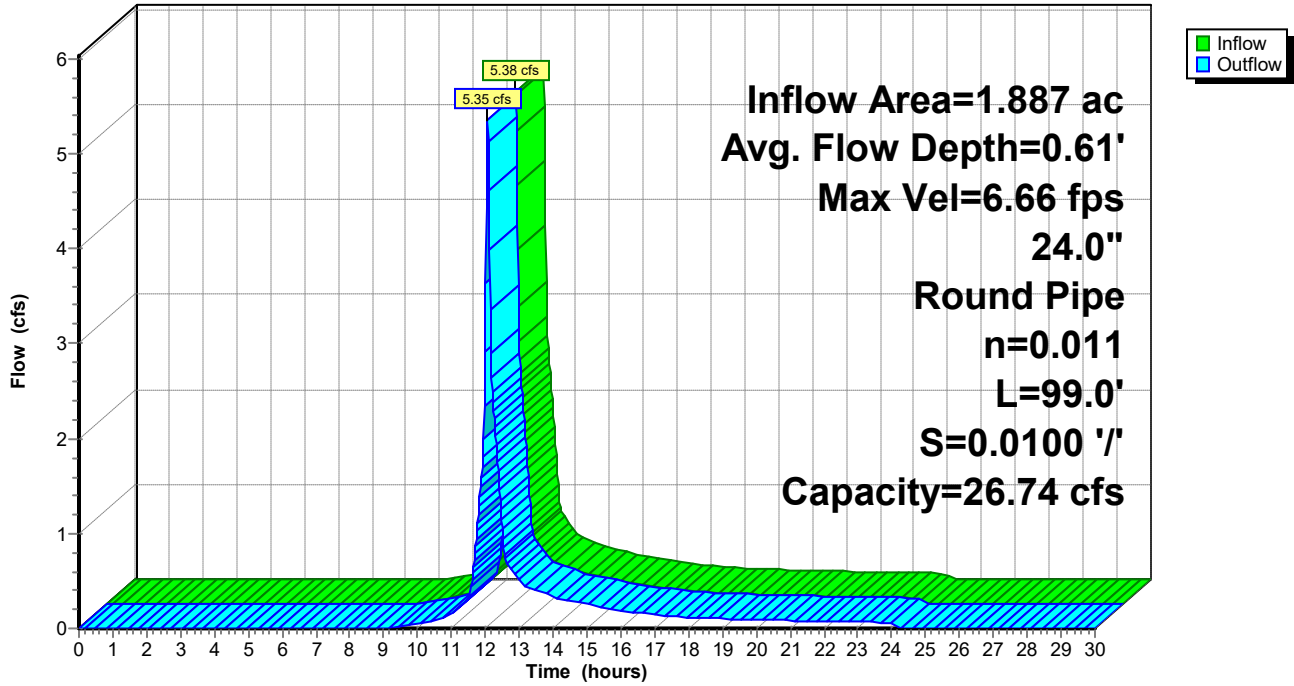
Peak Storage= 80 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.61'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 26.74 cfs

24.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 99.0' Slope= 0.0100 '/'
Inlet Invert= 27.02', Outlet Invert= 26.03'



Reach 24R: CB_3

Hydrograph



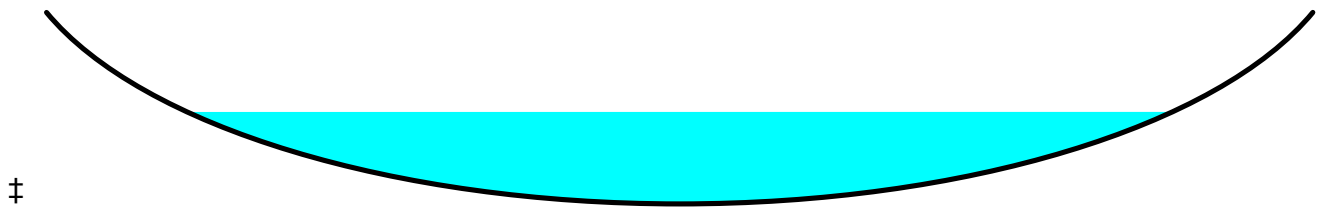
Summary for Reach 25R: SWALE

Inflow Area = 3.024 ac, 47.92% Impervious, Inflow Depth = 1.53" for 10-Year event
 Inflow = 2.92 cfs @ 12.44 hrs, Volume= 0.385 af
 Outflow = 2.92 cfs @ 12.46 hrs, Volume= 0.385 af, Atten= 0%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 3.30 fps, Min. Travel Time= 0.7 min
 Avg. Velocity = 1.38 fps, Avg. Travel Time= 1.8 min

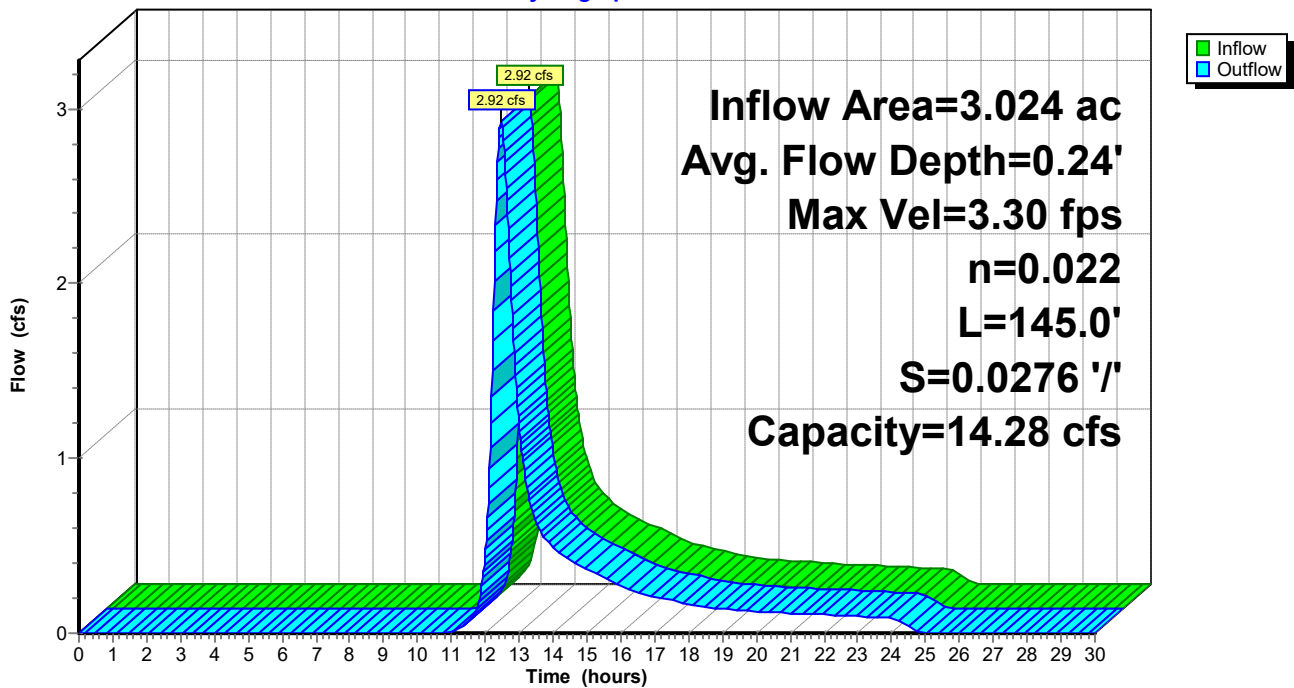
Peak Storage= 129 cf @ 12.45 hrs
 Average Depth at Peak Storage= 0.24'
 Bank-Full Depth= 0.50' Flow Area= 2.7 sf, Capacity= 14.28 cfs

8.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 145.0' Slope= 0.0276 '/'
 Inlet Invert= 34.00', Outlet Invert= 30.00'



Reach 25R: SWALE

Hydrograph



Summary for Pond 16P: INFILTRATION BASIN

Inflow Area = 10.298 ac, 45.73% Impervious, Inflow Depth = 1.53" for 10-Year event
 Inflow = 9.27 cfs @ 12.08 hrs, Volume= 1.313 af
 Outflow = 3.08 cfs @ 12.96 hrs, Volume= 1.313 af, Atten= 67%, Lag= 52.5 min
 Discarded = 3.08 cfs @ 12.96 hrs, Volume= 1.313 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Peak Elev= 22.91' @ 12.96 hrs Surf.Area= 16,070 sf Storage= 13,853 cf

Plug-Flow detention time= 32.4 min calculated for 1.312 af (100% of inflow)
 Center-of-Mass det. time= 32.4 min (898.7 - 866.3)

Volume	Invert	Avail.Storage	Storage Description
#1	22.00'	52,283 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

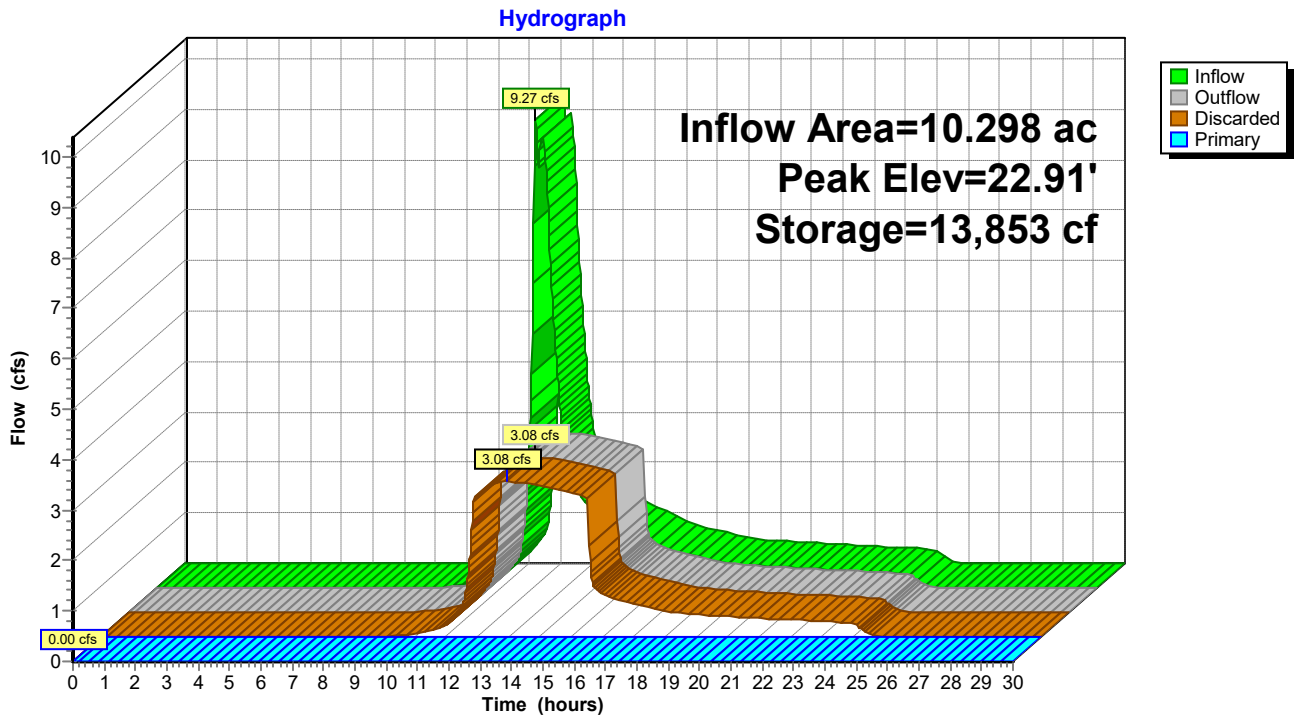
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	14,449	0	0
24.00	18,019	32,468	32,468
25.00	21,610	19,815	52,283

Device	Routing	Invert	Outlet Devices
#1	Discarded	22.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	23.75'	10.0' long x 6.0' breadth Broad-Crested Rectangular Weir
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65			
2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83			

Discarded OutFlow Max=3.08 cfs @ 12.96 hrs HW=22.91' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 3.08 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=22.00' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 16P: INFILTRATION BASIN



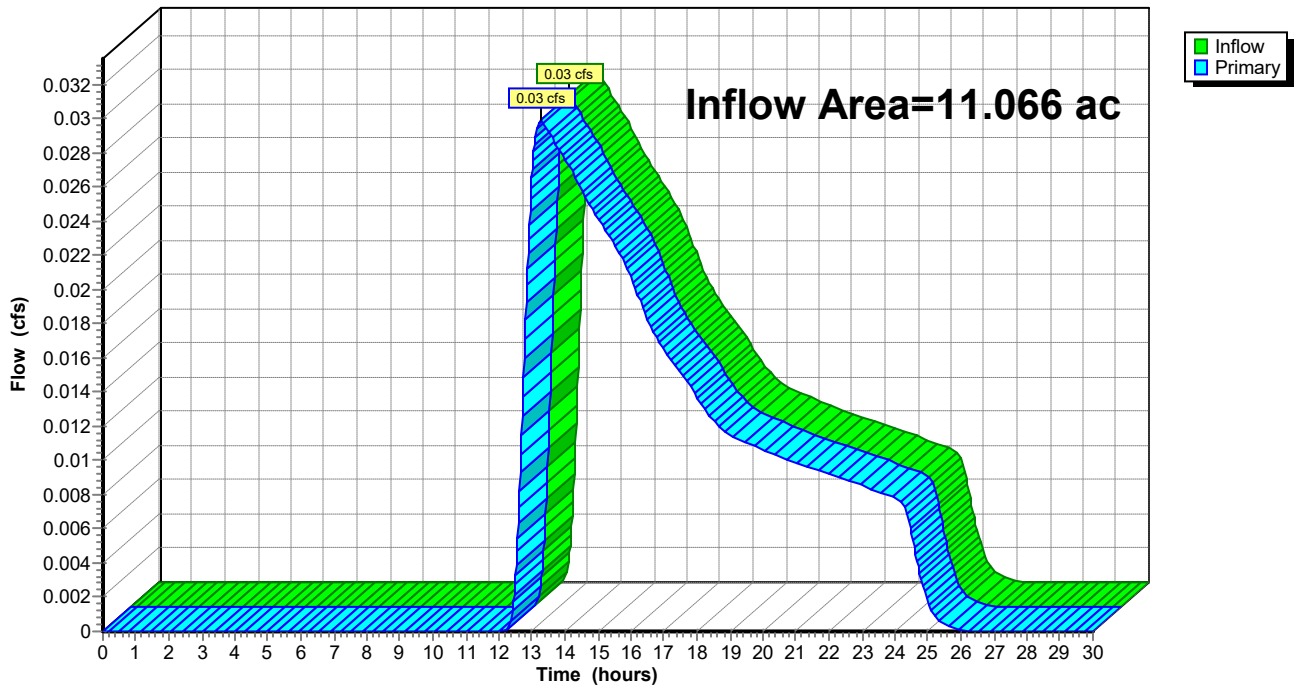
Summary for Link 17L: POST

Inflow Area = 11.066 ac, 43.37% Impervious, Inflow Depth = 0.02" for 10-Year event
Inflow = 0.03 cfs @ 13.29 hrs, Volume= 0.015 af
Primary = 0.03 cfs @ 13.29 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs

Link 17L: POST

Hydrograph



Baypointe CEDA

Type III 24-hr 25-Year Rainfall=5.60"

Prepared by {enter your company name here}

Printed 9/30/2021

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Page 60

Time span=0.00-30.00 hrs, dt=0.02 hrs, 1501 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 3: PRE	Runoff Area=483,573 sf 23.58% Impervious Runoff Depth=0.95" Flow Length=1,217' Tc=65.6 min CN=50 Runoff=3.50 cfs 0.882 af
Subcatchment 6S: POST EAST	Runoff Area=26,538 sf 56.45% Impervious Runoff Depth=2.67" Flow Length=518' Tc=11.2 min CN=72 Runoff=1.59 cfs 0.136 af
Subcatchment 7S: POST UNC	Runoff Area=33,460 sf 11.63% Impervious Runoff Depth=0.48" Flow Length=278' Slope=0.0700 '/' Tc=50.5 min CN=42 Runoff=0.10 cfs 0.031 af
Subcatchment 8S: POST CENTER	Runoff Area=18,063 sf 70.19% Impervious Runoff Depth=3.42" Flow Length=230' Tc=5.6 min CN=80 Runoff=1.68 cfs 0.118 af
Subcatchment 9S: POST WEST	Runoff Area=82,197 sf 60.21% Impervious Runoff Depth=2.94" Flow Length=541' Tc=2.8 min CN=75 Runoff=7.30 cfs 0.463 af
Subcatchment 10S: POST PARKING	Runoff Area=124,014 sf 44.37% Impervious Runoff Depth=2.06" Flow Length=575' Tc=21.1 min CN=65 Runoff=4.38 cfs 0.490 af
Subcatchment 12S: POST BPD	Runoff Area=131,718 sf 47.92% Impervious Runoff Depth=2.15" Flow Length=786' Tc=29.2 min CN=66 Runoff=4.23 cfs 0.541 af
Subcatchment 18S: POST BASIN	Runoff Area=66,040 sf 14.91% Impervious Runoff Depth=0.65" Tc=0.0 min UI Adjusted CN=45 Runoff=0.71 cfs 0.082 af
Reach 19R: CB_4	Avg. Flow Depth=0.43' Max Vel=3.81 fps Inflow=1.59 cfs 0.136 af 18.0" Round Pipe n=0.011 L=41.0' S=0.0051 '/' Capacity=8.88 cfs Outflow=1.59 cfs 0.136 af
Reach 20R: MH_1	Avg. Flow Depth=0.43' Max Vel=3.78 fps Inflow=1.59 cfs 0.136 af 18.0" Round Pipe n=0.011 L=93.0' S=0.0051 '/' Capacity=8.83 cfs Outflow=1.58 cfs 0.136 af
Reach 21R: MH_2	Avg. Flow Depth=0.43' Max Vel=3.77 fps Inflow=1.58 cfs 0.136 af 18.0" Round Pipe n=0.011 L=34.0' S=0.0050 '/' Capacity=8.78 cfs Outflow=1.58 cfs 0.136 af
Reach 22R: CB_1	Avg. Flow Depth=0.83' Max Vel=7.30 fps Inflow=7.30 cfs 0.463 af 18.0" Round Pipe n=0.011 L=54.0' S=0.0100 '/' Capacity=12.41 cfs Outflow=7.26 cfs 0.463 af
Reach 23R: CB_2	Avg. Flow Depth=0.82' Max Vel=7.28 fps Inflow=7.26 cfs 0.463 af 18.0" Round Pipe n=0.011 L=33.0' S=0.0100 '/' Capacity=12.41 cfs Outflow=7.21 cfs 0.463 af
Reach 24R: CB_3	Avg. Flow Depth=0.71' Max Vel=7.22 fps Inflow=7.21 cfs 0.463 af 24.0" Round Pipe n=0.011 L=99.0' S=0.0100 '/' Capacity=26.74 cfs Outflow=7.17 cfs 0.463 af
Reach 25R: SWALE	Avg. Flow Depth=0.28' Max Vel=3.69 fps Inflow=4.23 cfs 0.541 af n=0.022 L=145.0' S=0.0276 '/' Capacity=14.28 cfs Outflow=4.23 cfs 0.541 af
Pond 16P: INFILTRATION BASIN	Peak Elev=23.55' Storage=24,474 cf Inflow=13.33 cfs 1.830 af Discarded=3.29 cfs 1.830 af Primary=0.00 cfs 0.000 af Outflow=3.29 cfs 1.830 af

Baypointe CEDA

Type III 24-hr 25-Year Rainfall=5.60"

Prepared by {enter your company name here}

Printed 9/30/2021

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Page 61

Link 17L: POST

Inflow=0.10 cfs 0.031 af

Primary=0.10 cfs 0.031 af

Total Runoff Area = 22.167 ac Runoff Volume = 2.742 af Average Runoff Depth = 1.48"
66.54% Pervious = 14.751 ac 33.46% Impervious = 7.417 ac

Summary for Subcatchment 3: PRE

Runoff = 3.50 cfs @ 13.05 hrs, Volume= 0.882 af, Depth= 0.95"

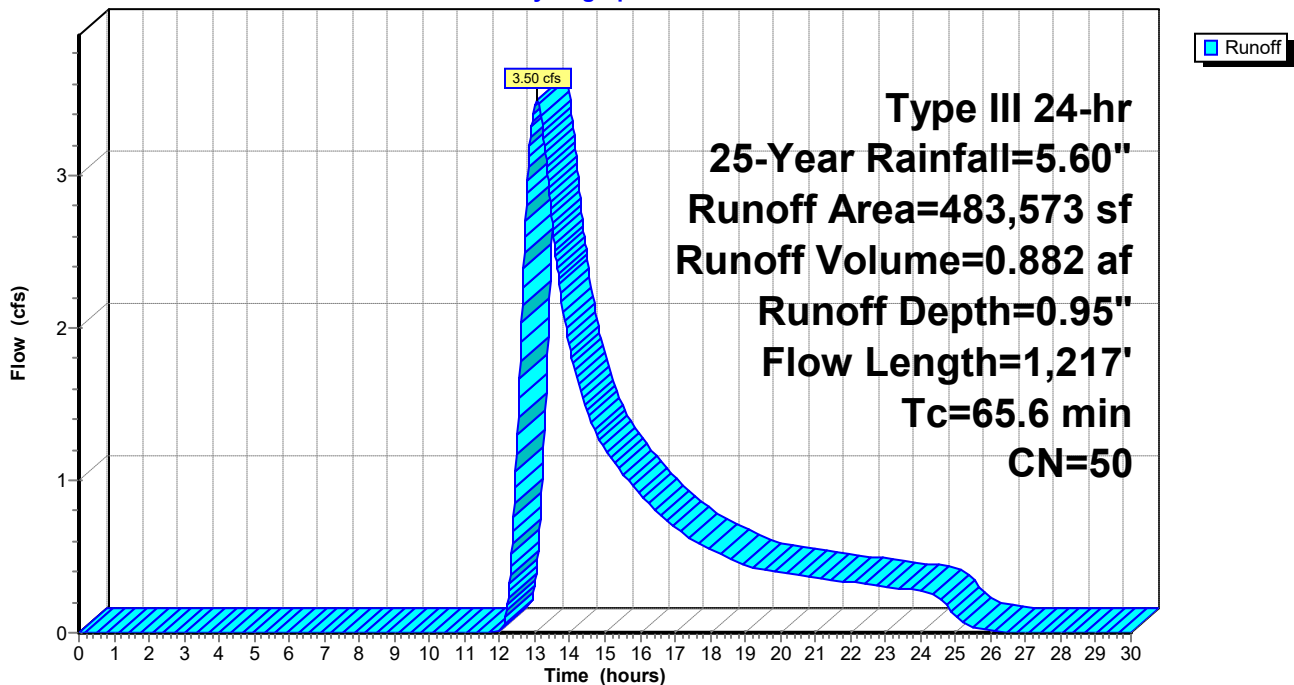
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 25-Year Rainfall=5.60"

Area (sf)	CN	Description
130,944	30	Woods, Good, HSG A
238,593	39	>75% Grass cover, Good, HSG A
* 112,792	98	Roads/Driveways/SWalk
* 1,244	98	Existing Roofs
483,573	50	Weighted Average
369,537	36	76.42% Pervious Area
114,036	98	23.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.0	267	0.0500	0.08		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	224	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
5.3	726	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
65.6	1,217	Total			

Subcatchment 3: PRE

Hydrograph



Summary for Subcatchment 6S: POST EAST

Runoff = 1.59 cfs @ 12.16 hrs, Volume= 0.136 af, Depth= 2.67"

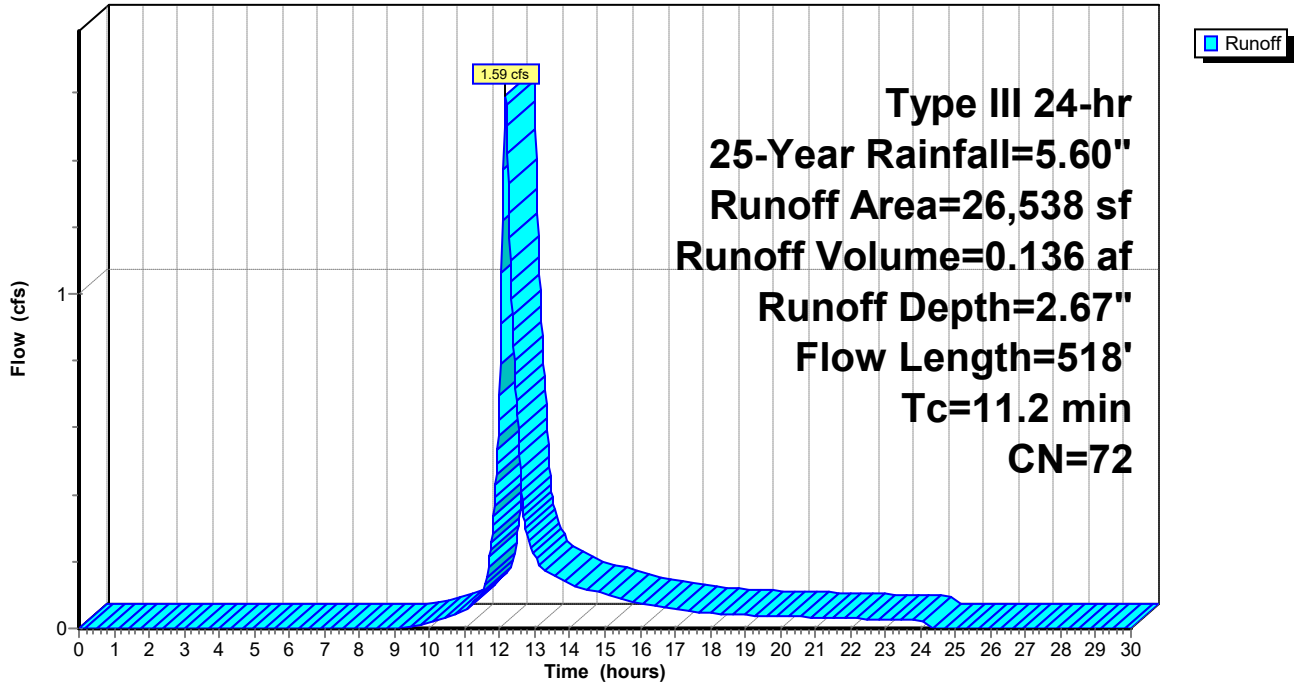
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 25-Year Rainfall=5.60"

Area (sf)	CN	Description
14,982	98	Unconnected pavement, HSG A
11,556	39	>75% Grass cover, Good, HSG A
26,538	72	Weighted Average
11,556	39	43.55% Pervious Area
14,982	98	56.45% Impervious Area
14,982		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	119	0.0700	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.7	182	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	48	0.1700	6.64		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.6	169	0.0100	4.54	3.56	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Concrete pipe, bends & connections
11.2	518	Total			

Subcatchment 6S: POST EAST

Hydrograph



Summary for Subcatchment 7S: POST UNC

Runoff = 0.10 cfs @ 12.97 hrs, Volume= 0.031 af, Depth= 0.48"

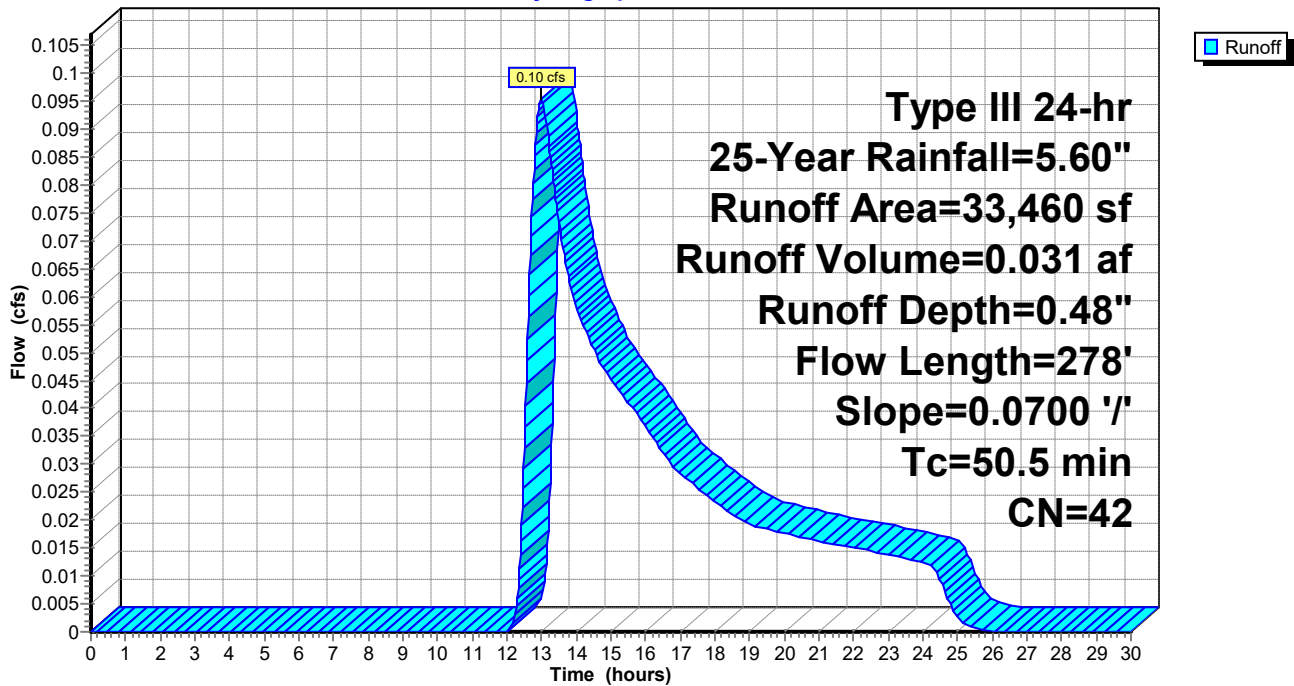
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.60"

Area (sf)	CN	Description
14,286	30	Woods, Good, HSG A
3,892	98	Roofs, HSG A
15,282	39	>75% Grass cover, Good, HSG A
33,460	42	Weighted Average
29,568	35	88.37% Pervious Area
3,892	98	11.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.5	278	0.0700	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"

Subcatchment 7S: POST UNC

Hydrograph



Summary for Subcatchment 8S: POST CENTER

Runoff = 1.68 cfs @ 12.08 hrs, Volume= 0.118 af, Depth= 3.42"

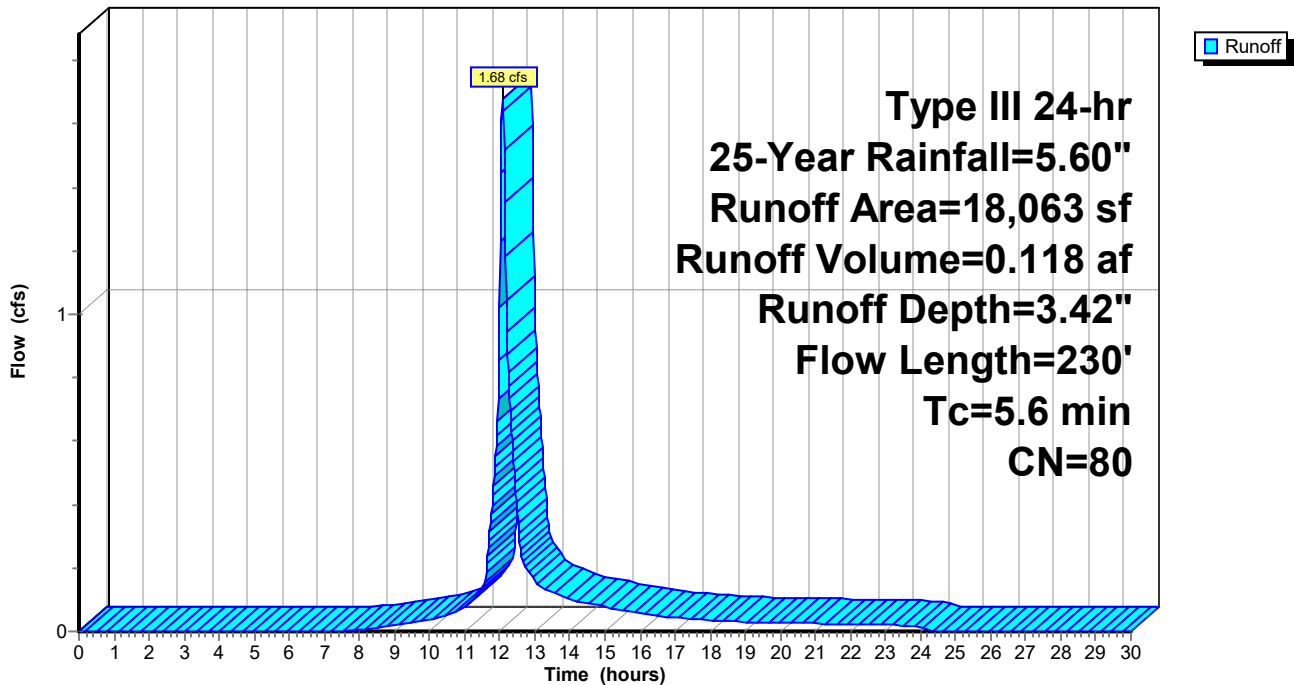
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.60"

Area (sf)	CN	Description
12,678	98	Unconnected pavement, HSG A
5,385	39	>75% Grass cover, Good, HSG A
18,063	80	Weighted Average
5,385	39	29.81% Pervious Area
12,678	98	70.19% Impervious Area
12,678		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	38	0.0500	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.1	192	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.6	230	Total			

Subcatchment 8S: POST CENTER

Hydrograph



Summary for Subcatchment 9S: POST WEST

Runoff = 7.30 cfs @ 12.04 hrs, Volume= 0.463 af, Depth= 2.94"

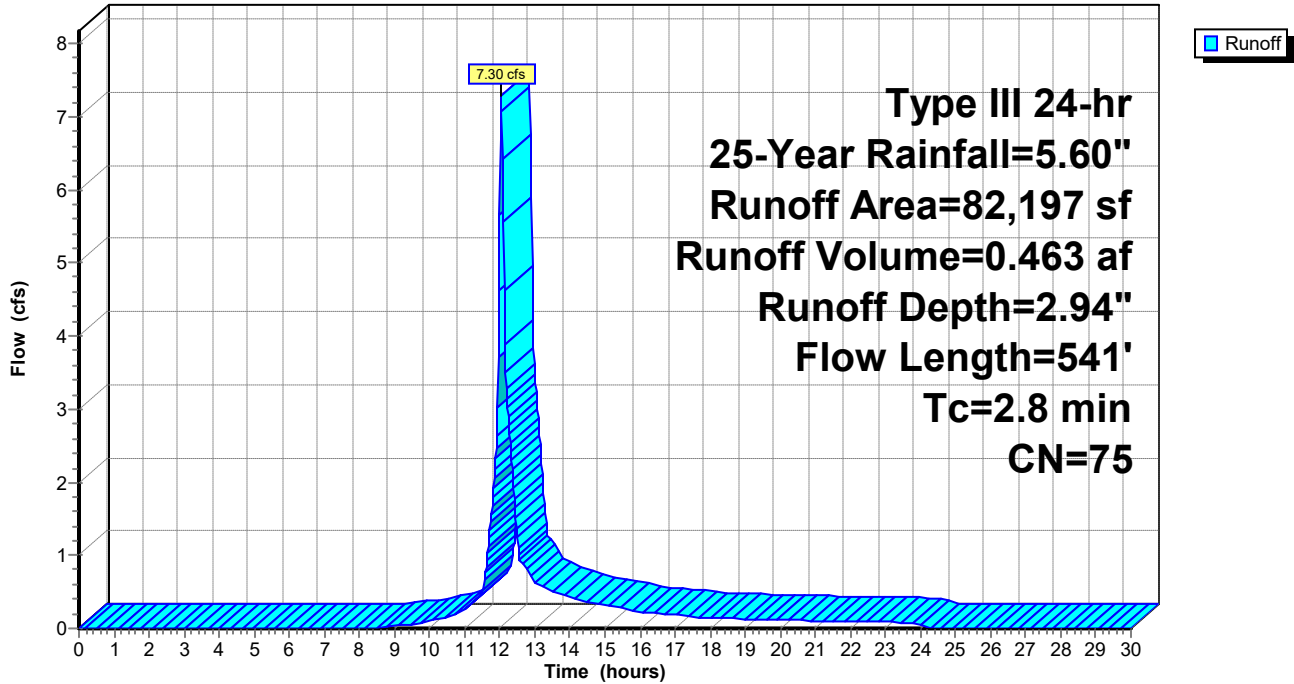
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.60"

Area (sf)	CN	Description
49,494	98	Unconnected pavement, HSG A
32,703	39	>75% Grass cover, Good, HSG A
82,197	75	Weighted Average
32,703	39	39.79% Pervious Area
49,494	98	60.21% Impervious Area
49,494		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	85	0.0200	1.35		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
1.5	266	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	20	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.1	71	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.2	99	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
2.8	541	Total			

Subcatchment 9S: POST WEST

Hydrograph



Summary for Subcatchment 10S: POST PARKING

Runoff = 4.38 cfs @ 12.31 hrs, Volume= 0.490 af, Depth= 2.06"

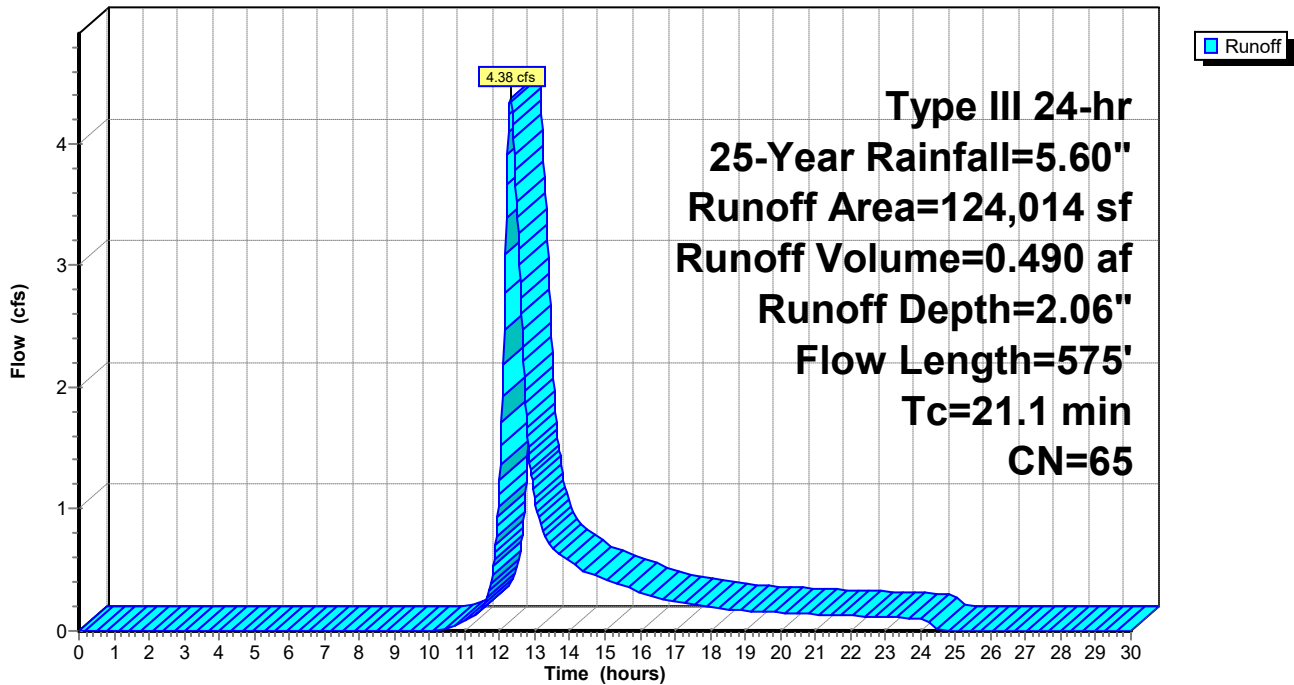
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 25-Year Rainfall=5.60"

	Area (sf)	CN	Description
*	14,043	98	Existing Impervious, HSG A
	68,984	39	>75% Grass cover, Good, HSG A
	40,987	98	Unconnected pavement, HSG A
	124,014	65	Weighted Average
	68,984	39	55.63% Pervious Area
	55,030	98	44.37% Impervious Area
	40,987		74.48% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	212	0.0400	0.18		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.7	363	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
21.1	575	Total			

Subcatchment 10S: POST PARKING

Hydrograph



Summary for Subcatchment 12S: POST BPD

Runoff = 4.23 cfs @ 12.43 hrs, Volume= 0.541 af, Depth= 2.15"

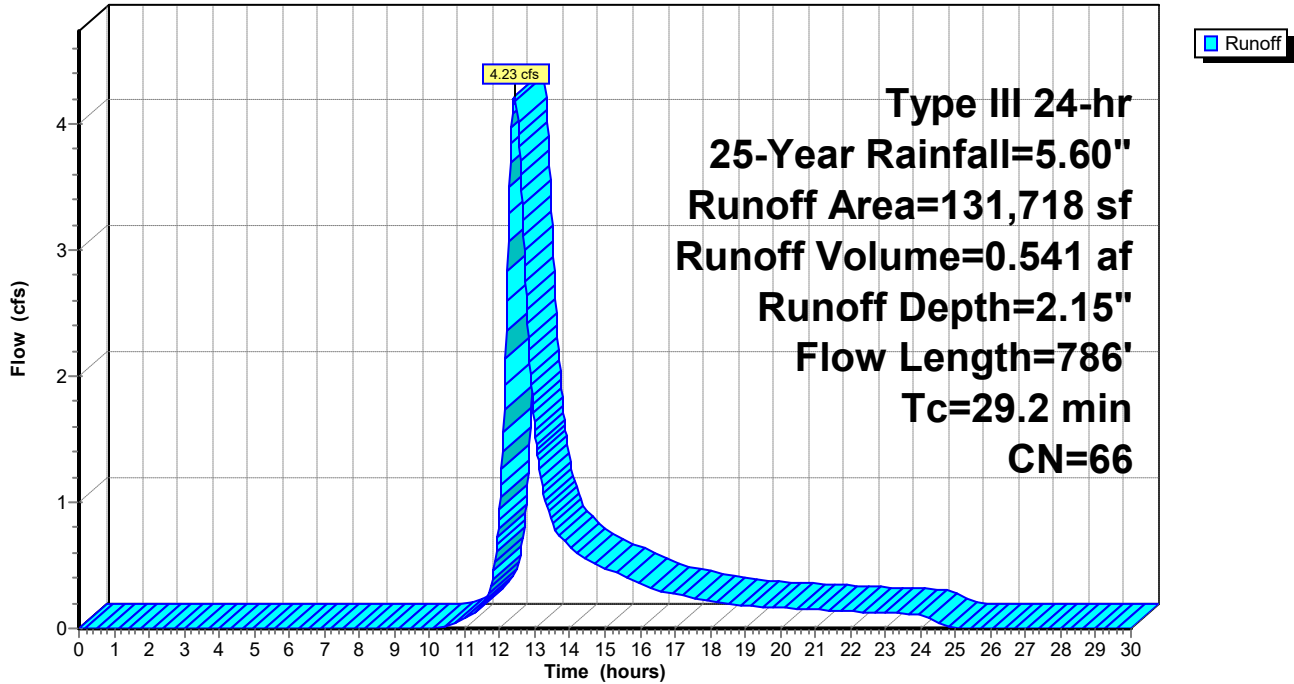
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 25-Year Rainfall=5.60"

Area (sf)	CN	Description
* 43,950	98	Existing Impervious, HSG A
56,854	39	>75% Grass cover, Good, HSG A
11,751	30	Woods, Good, HSG A
19,163	98	Unconnected pavement, HSG A
131,718	66	Weighted Average
68,605	37	52.08% Pervious Area
63,113	98	47.92% Impervious Area
19,163		30.36% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	225	0.0200	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.4	303	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	113	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.4	145	0.0300	5.59	14.90	Parabolic Channel, W=8.00' D=0.50' Area=2.7 sf Perim=8.1' n= 0.022 Earth, clean & straight
29.2	786	Total			

Subcatchment 12S: POST BPD

Hydrograph



Summary for Subcatchment 18S: POST BASIN

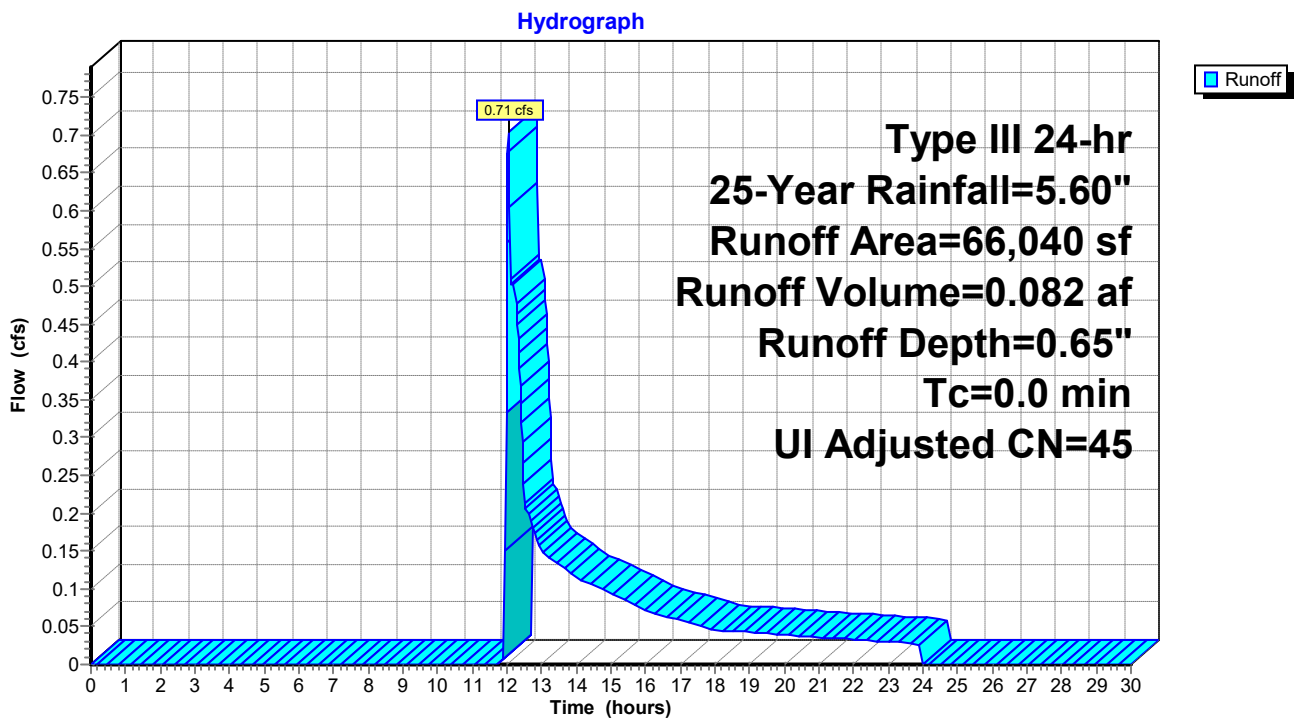
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.71 cfs @ 12.04 hrs, Volume= 0.082 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 25-Year Rainfall=5.60"

	Area (sf)	CN	Adj	Description
*	3,821	98		Existing Roof, HSG A
	6,024	98		Unconnected pavement, HSG A
	56,195	39		>75% Grass cover, Good, HSG A
	66,040	48	45	Weighted Average, UI Adjusted
	56,195	39	39	85.09% Pervious Area
	9,845	98	98	14.91% Impervious Area
	6,024			61.19% Unconnected

Subcatchment 18S: POST BASIN



Summary for Reach 19R: CB_4

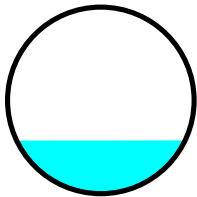
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.609 ac, 56.45% Impervious, Inflow Depth = 2.67" for 25-Year event
 Inflow = 1.59 cfs @ 12.16 hrs, Volume= 0.136 af
 Outflow = 1.59 cfs @ 12.16 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 3.81 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.44 fps, Avg. Travel Time= 0.5 min

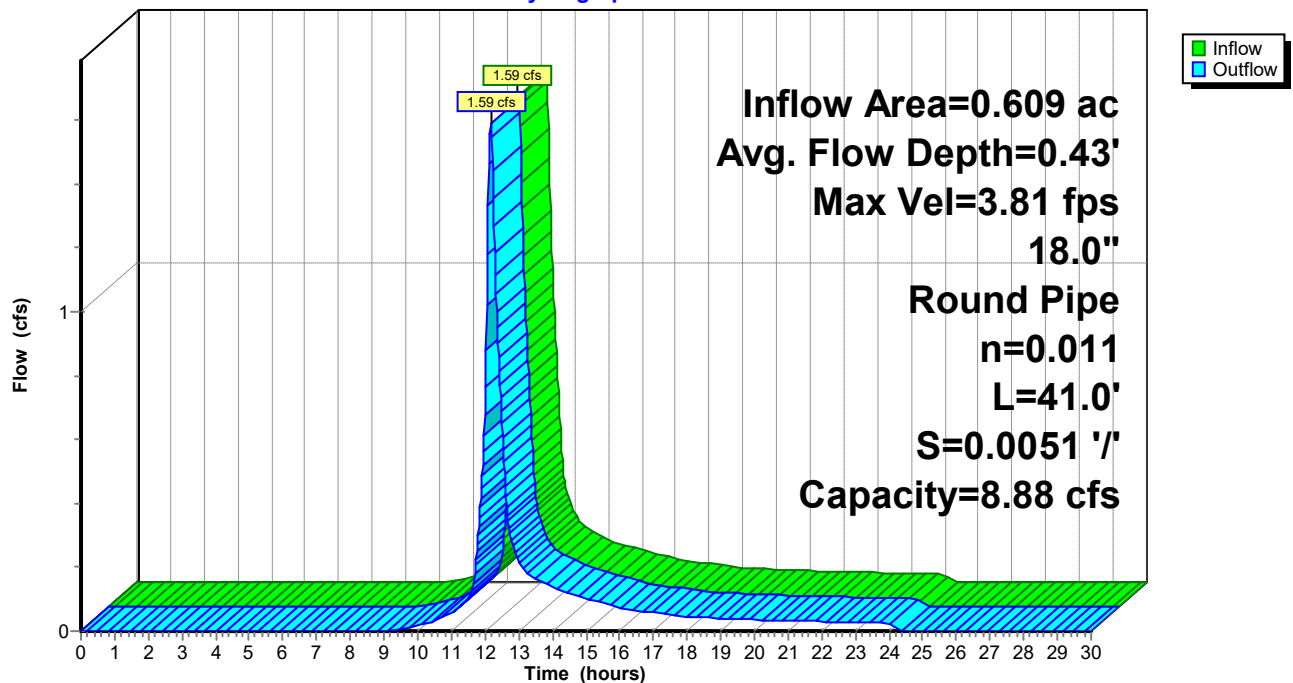
Peak Storage= 17 cf @ 12.16 hrs
 Average Depth at Peak Storage= 0.43'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.88 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 41.0' Slope= 0.0051 '/'
 Inlet Invert= 23.80', Outlet Invert= 23.59'



Reach 19R: CB_4

Hydrograph



Summary for Reach 20R: MH_1

[52] Hint: Inlet/Outlet conditions not evaluated

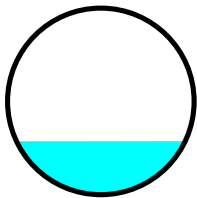
[62] Hint: Exceeded Reach 19R OUTLET depth by 0.01' @ 12.24 hrs

Inflow Area = 0.609 ac, 56.45% Impervious, Inflow Depth = 2.67" for 25-Year event
Inflow = 1.59 cfs @ 12.16 hrs, Volume= 0.136 af
Outflow = 1.58 cfs @ 12.18 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.78 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.43 fps, Avg. Travel Time= 1.1 min

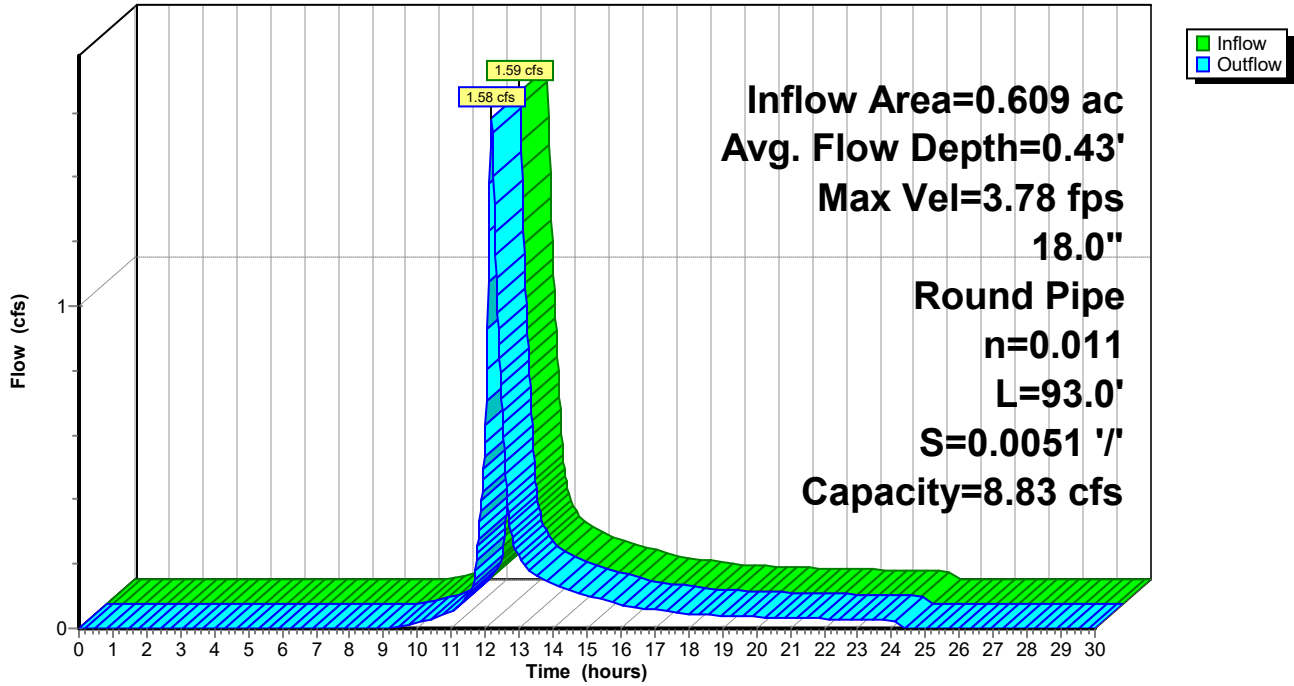
Peak Storage= 39 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.43'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.83 cfs

18.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 93.0' Slope= 0.0051 '/'
Inlet Invert= 23.59', Outlet Invert= 23.12'



Reach 20R: MH_1

Hydrograph



Summary for Reach 21R: MH_2

[52] Hint: Inlet/Outlet conditions not evaluated

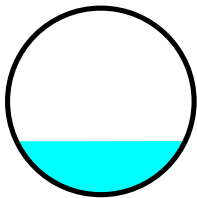
[62] Hint: Exceeded Reach 20R OUTLET depth by 0.01' @ 12.26 hrs

Inflow Area =	0.609 ac, 56.45% Impervious, Inflow Depth = 2.67"	for 25-Year event
Inflow =	1.58 cfs @ 12.18 hrs, Volume=	0.136 af
Outflow =	1.58 cfs @ 12.18 hrs, Volume=	0.136 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 3.77 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.42 fps, Avg. Travel Time= 0.4 min

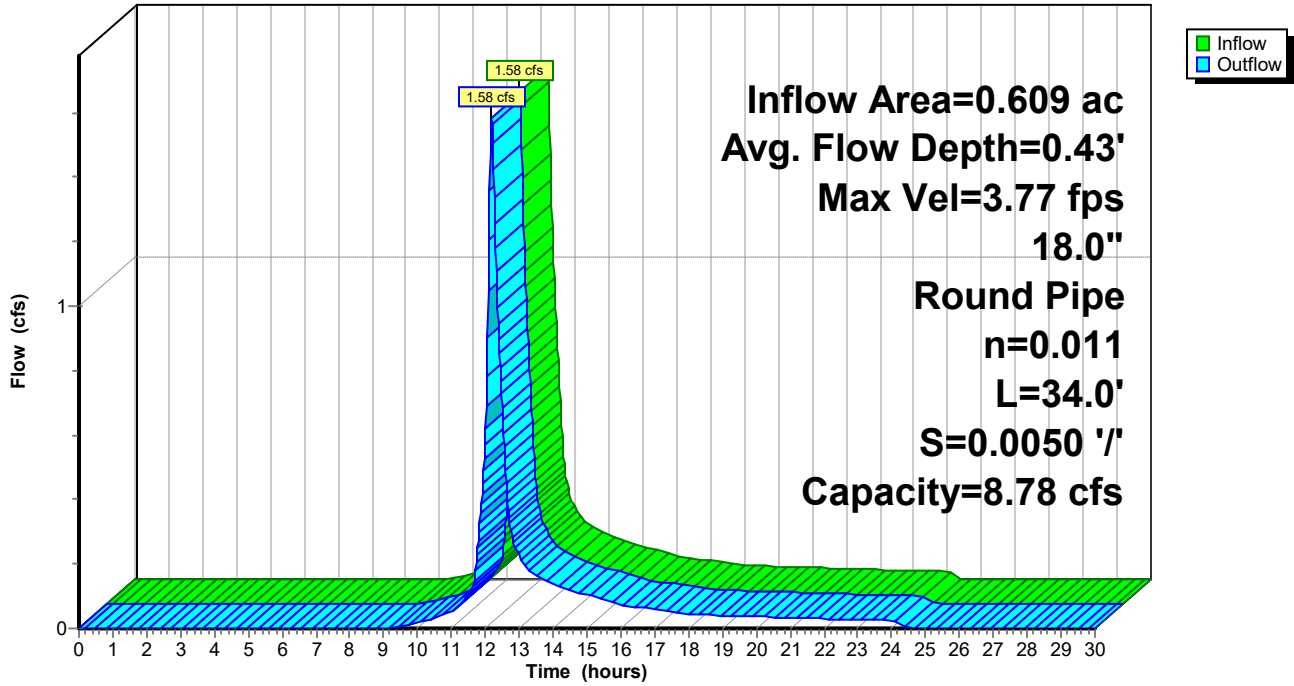
Peak Storage= 14 cf @ 12.18 hrs
 Average Depth at Peak Storage= 0.43'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.78 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 34.0' Slope= 0.0050 '/'
 Inlet Invert= 23.12', Outlet Invert= 22.95'



Reach 21R: MH_2

Hydrograph



Summary for Reach 22R: CB_1

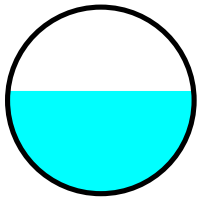
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.887 ac, 60.21% Impervious, Inflow Depth = 2.94" for 25-Year event
 Inflow = 7.30 cfs @ 12.04 hrs, Volume= 0.463 af
 Outflow = 7.26 cfs @ 12.05 hrs, Volume= 0.463 af, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 7.30 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.60 fps, Avg. Travel Time= 0.3 min

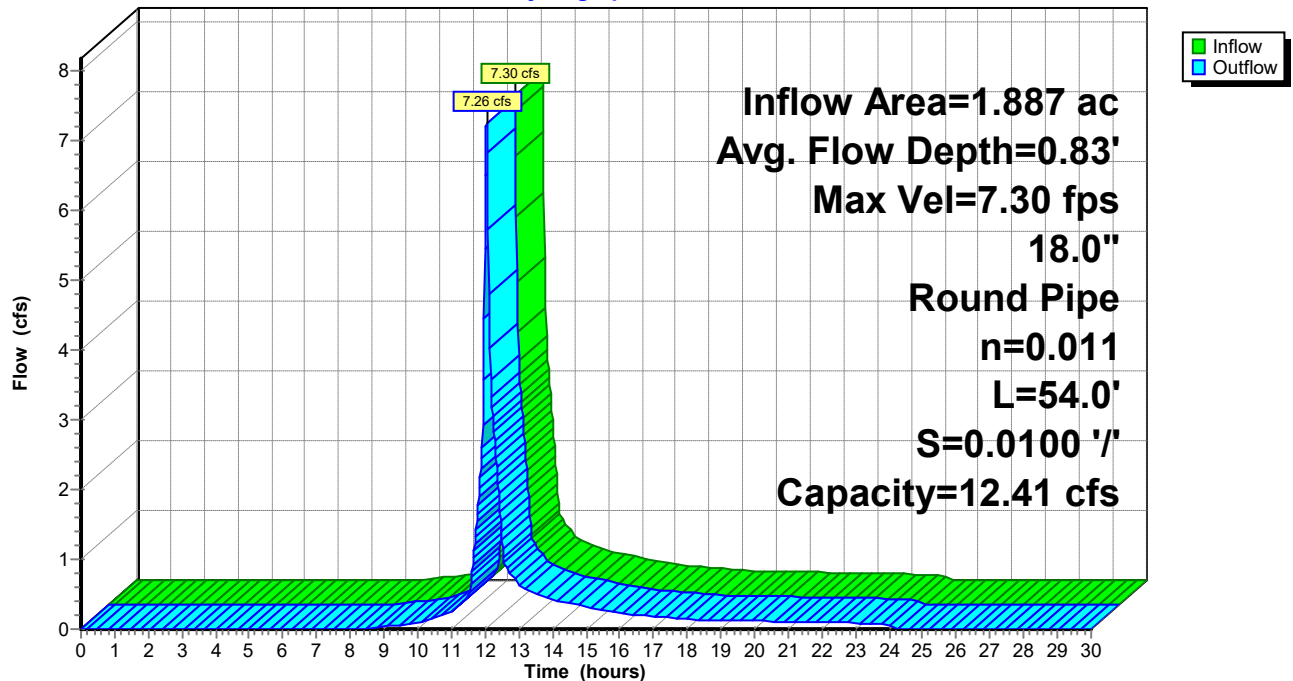
Peak Storage= 54 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.83'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 54.0' Slope= 0.0100 '/'
 Inlet Invert= 27.89', Outlet Invert= 27.35'



Reach 22R: CB_1

Hydrograph



Summary for Reach 23R: CB_2

[52] Hint: Inlet/Outlet conditions not evaluated

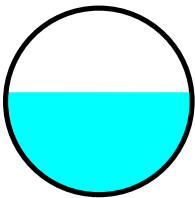
[62] Hint: Exceeded Reach 22R OUTLET depth by 0.01' @ 12.12 hrs

Inflow Area =	1.887 ac, 60.21% Impervious, Inflow Depth = 2.94"	for 25-Year event
Inflow =	7.26 cfs @ 12.05 hrs, Volume=	0.463 af
Outflow =	7.21 cfs @ 12.05 hrs, Volume=	0.463 af, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 7.28 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.60 fps, Avg. Travel Time= 0.2 min

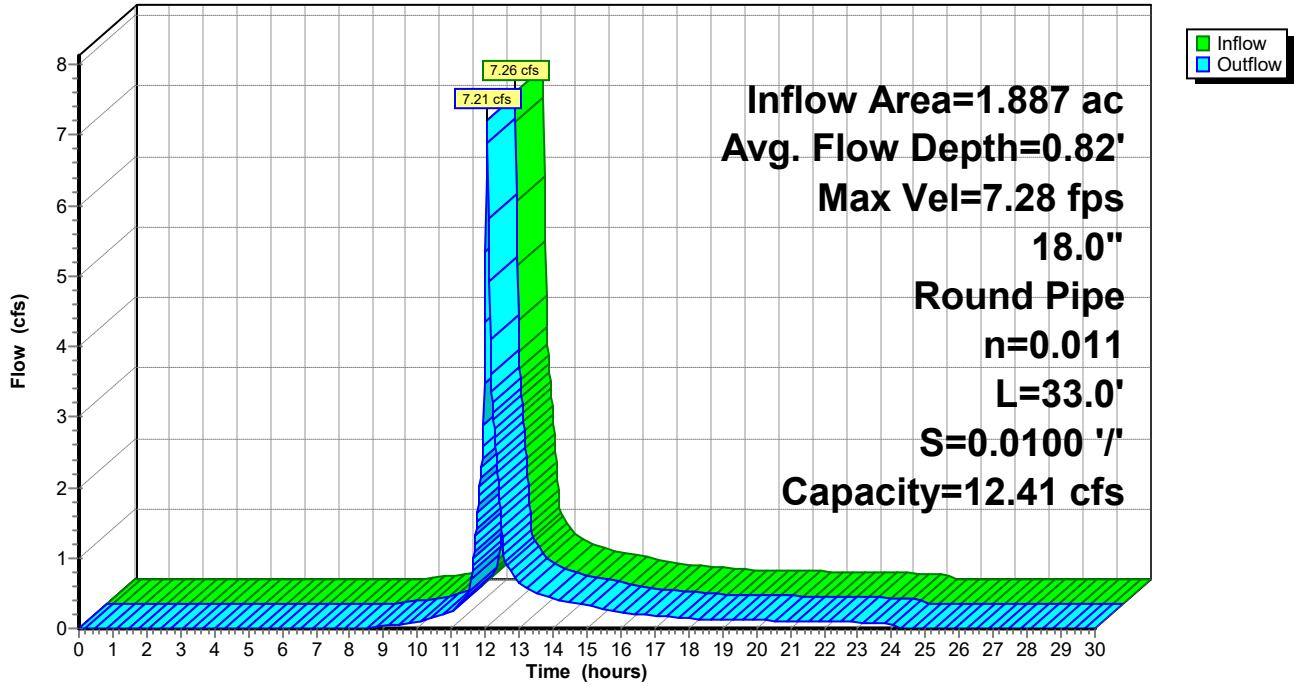
Peak Storage= 33 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.82'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 33.0' Slope= 0.0100 '/'
 Inlet Invert= 27.35', Outlet Invert= 27.02'



Reach 23R: CB_2

Hydrograph



Summary for Reach 24R: CB_3

[52] Hint: Inlet/Outlet conditions not evaluated

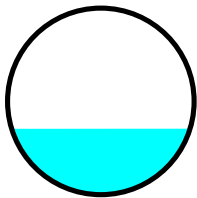
[62] Hint: Exceeded Reach 23R OUTLET depth by 0.01' @ 24.08 hrs

Inflow Area =	1.887 ac, 60.21% Impervious, Inflow Depth = 2.94"	for 25-Year event
Inflow =	7.21 cfs @ 12.05 hrs, Volume=	0.463 af
Outflow =	7.17 cfs @ 12.06 hrs, Volume=	0.463 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 7.22 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.50 fps, Avg. Travel Time= 0.7 min

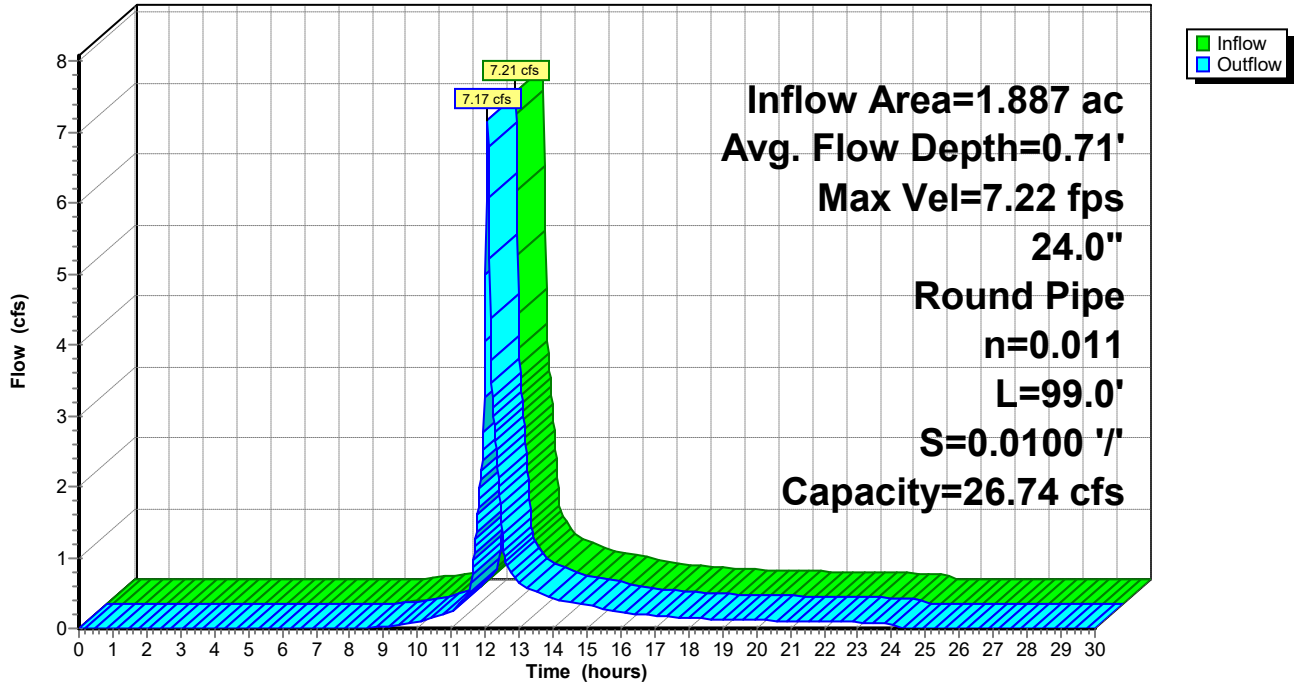
Peak Storage= 99 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.71'
 Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 26.74 cfs

24.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 99.0' Slope= 0.0100 '/'
 Inlet Invert= 27.02', Outlet Invert= 26.03'



Reach 24R: CB_3

Hydrograph



Summary for Reach 25R: SWALE

Inflow Area = 3.024 ac, 47.92% Impervious, Inflow Depth = 2.15" for 25-Year event
Inflow = 4.23 cfs @ 12.43 hrs, Volume= 0.541 af
Outflow = 4.23 cfs @ 12.45 hrs, Volume= 0.541 af, Atten= 0%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.69 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.49 fps, Avg. Travel Time= 1.6 min

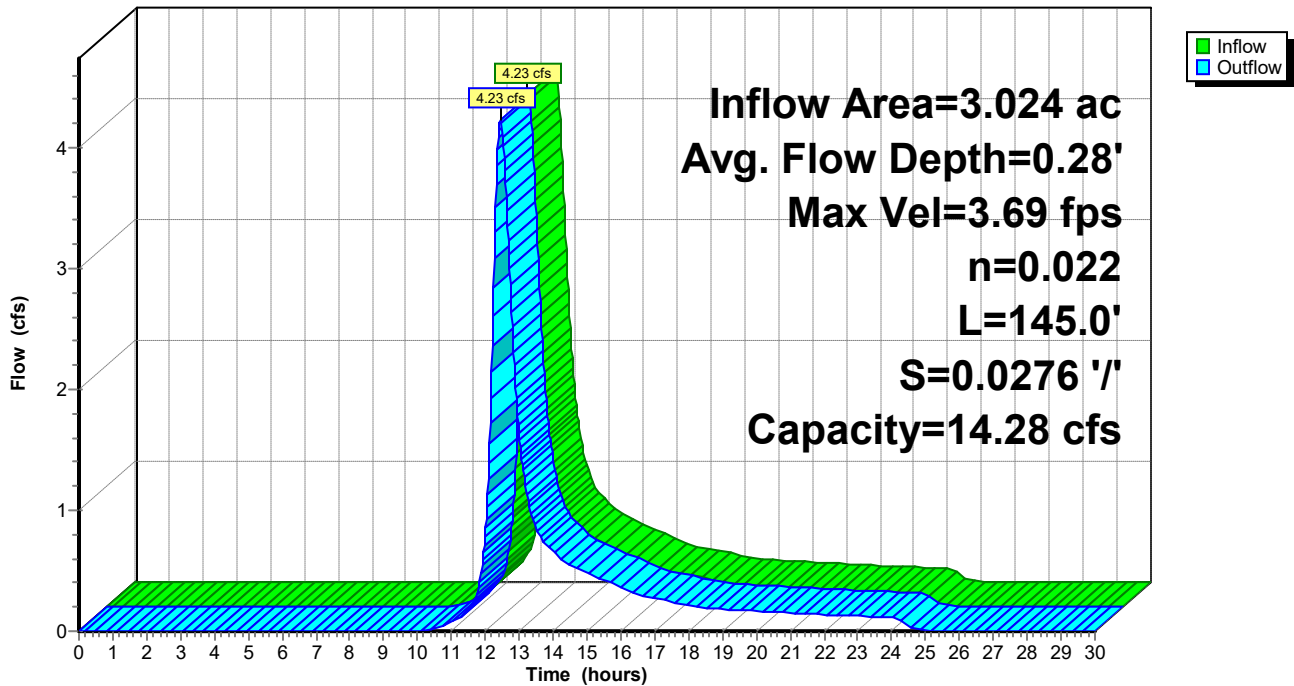
Peak Storage= 166 cf @ 12.44 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 0.50' Flow Area= 2.7 sf, Capacity= 14.28 cfs

8.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 145.0' Slope= 0.0276 '/'
Inlet Invert= 34.00', Outlet Invert= 30.00'



Reach 25R: SWALE

Hydrograph



Summary for Pond 16P: INFILTRATION BASIN

[63] Warning: Exceeded Reach 21R INLET depth by 0.27' @ 13.20 hrs

Inflow Area = 10.298 ac, 45.73% Impervious, Inflow Depth = 2.13" for 25-Year event
 Inflow = 13.33 cfs @ 12.08 hrs, Volume= 1.830 af
 Outflow = 3.29 cfs @ 13.13 hrs, Volume= 1.830 af, Atten= 75%, Lag= 63.1 min
 Discarded = 3.29 cfs @ 13.13 hrs, Volume= 1.830 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Peak Elev= 23.55' @ 13.13 hrs Surf.Area= 17,209 sf Storage= 24,474 cf

Plug-Flow detention time= 61.5 min calculated for 1.829 af (100% of inflow)
 Center-of-Mass det. time= 61.5 min (918.6 - 857.2)

Volume	Invert	Avail.Storage	Storage Description
#1	22.00'	52,283 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	14,449	0	0
24.00	18,019	32,468	32,468
25.00	21,610	19,815	52,283

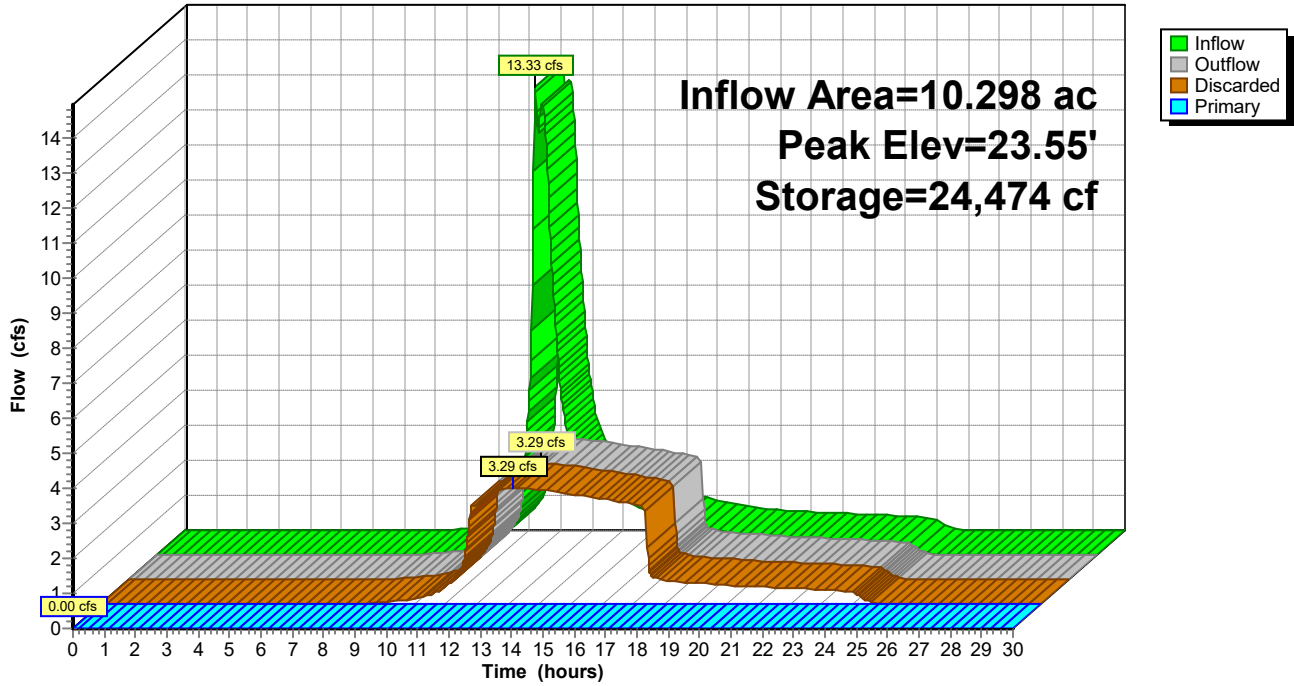
Device	Routing	Invert	Outlet Devices
#1	Discarded	22.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	23.75'	10.0' long x 6.0' breadth Broad-Crested Rectangular Weir
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65			
2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83			

Discarded OutFlow Max=3.29 cfs @ 13.13 hrs HW=23.55' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 3.29 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=22.00' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 16P: INFILTRATION BASIN

Hydrograph



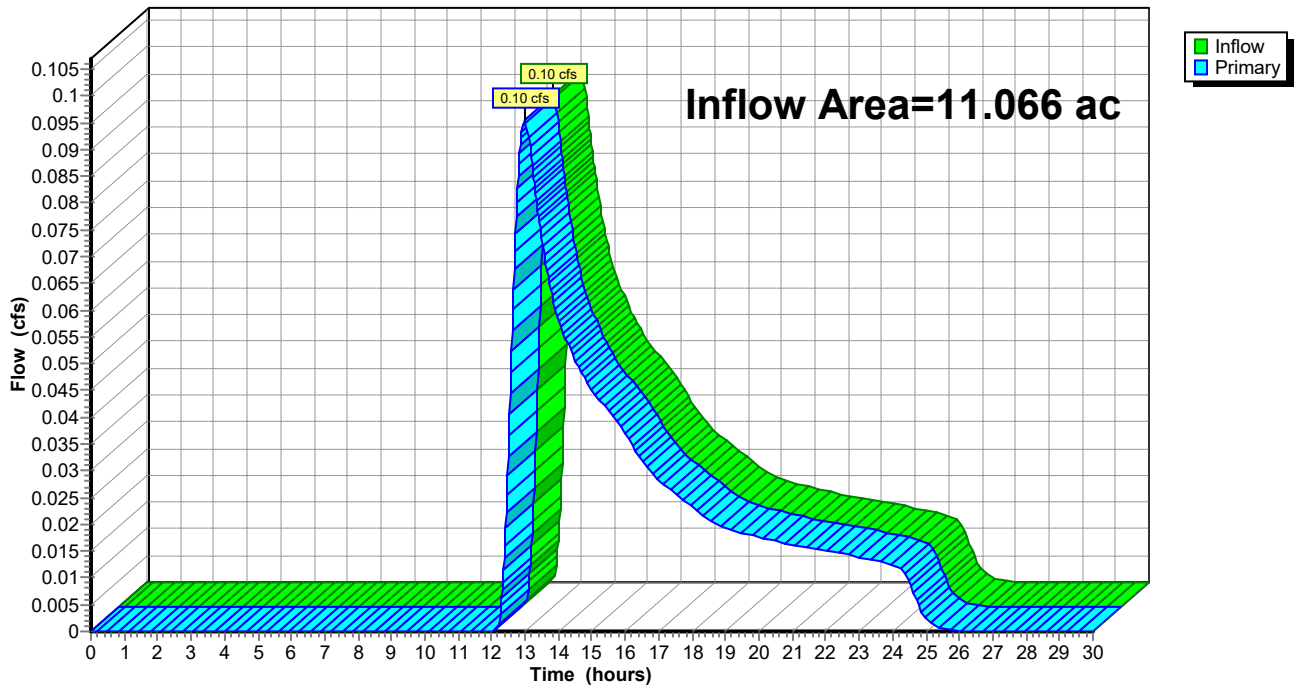
Summary for Link 17L: POST

Inflow Area = 11.066 ac, 43.37% Impervious, Inflow Depth = 0.03" for 25-Year event
Inflow = 0.10 cfs @ 12.97 hrs, Volume= 0.031 af
Primary = 0.10 cfs @ 12.97 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs

Link 17L: POST

Hydrograph



Baypointe CEDA

Type III 24-hr 100-Year Rainfall=7.00"

Prepared by {enter your company name here}

Printed 9/30/2021

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Page 87

Time span=0.00-30.00 hrs, dt=0.02 hrs, 1501 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 3: PRE	Runoff Area=483,573 sf 23.58% Impervious Runoff Depth=1.67" Flow Length=1,217' Tc=65.6 min CN=50 Runoff=6.97 cfs 1.542 af
Subcatchment 6S: POST EAST	Runoff Area=26,538 sf 56.45% Impervious Runoff Depth=3.83" Flow Length=518' Tc=11.2 min CN=72 Runoff=2.30 cfs 0.194 af
Subcatchment 7S: POST UNC	Runoff Area=33,460 sf 11.63% Impervious Runoff Depth=1.00" Flow Length=278' Slope=0.0700 '/' Tc=50.5 min CN=42 Runoff=0.27 cfs 0.064 af
Subcatchment 8S: POST CENTER	Runoff Area=18,063 sf 70.19% Impervious Runoff Depth=4.69" Flow Length=230' Tc=5.6 min CN=80 Runoff=2.29 cfs 0.162 af
Subcatchment 9S: POST WEST	Runoff Area=82,197 sf 60.21% Impervious Runoff Depth=4.15" Flow Length=541' Tc=2.8 min CN=75 Runoff=10.28 cfs 0.652 af
Subcatchment 10S: POST PARKING	Runoff Area=124,014 sf 44.37% Impervious Runoff Depth=3.10" Flow Length=575' Tc=21.1 min CN=65 Runoff=6.74 cfs 0.736 af
Subcatchment 12S: POST BPD	Runoff Area=131,718 sf 47.92% Impervious Runoff Depth=3.20" Flow Length=786' Tc=29.2 min CN=66 Runoff=6.44 cfs 0.807 af
Subcatchment 18S: POST BASIN	Runoff Area=66,040 sf 14.91% Impervious Runoff Depth=1.24" Tc=0.0 min UI Adjusted CN=45 Runoff=1.96 cfs 0.156 af
Reach 19R: CB_4	Avg. Flow Depth=0.52' Max Vel=4.22 fps Inflow=2.30 cfs 0.194 af 18.0" Round Pipe n=0.011 L=41.0' S=0.0051 '/' Capacity=8.88 cfs Outflow=2.30 cfs 0.194 af
Reach 20R: MH_1	Avg. Flow Depth=0.52' Max Vel=4.20 fps Inflow=2.30 cfs 0.194 af 18.0" Round Pipe n=0.011 L=93.0' S=0.0051 '/' Capacity=8.83 cfs Outflow=2.28 cfs 0.194 af
Reach 21R: MH_2	Avg. Flow Depth=0.52' Max Vel=4.17 fps Inflow=2.28 cfs 0.194 af 18.0" Round Pipe n=0.011 L=34.0' S=0.0050 '/' Capacity=8.78 cfs Outflow=2.28 cfs 0.194 af
Reach 22R: CB_1	Avg. Flow Depth=1.04' Max Vel=7.85 fps Inflow=10.28 cfs 0.652 af 18.0" Round Pipe n=0.011 L=54.0' S=0.0100 '/' Capacity=12.41 cfs Outflow=10.22 cfs 0.652 af
Reach 23R: CB_2	Avg. Flow Depth=1.04' Max Vel=7.83 fps Inflow=10.22 cfs 0.652 af 18.0" Round Pipe n=0.011 L=33.0' S=0.0100 '/' Capacity=12.41 cfs Outflow=10.18 cfs 0.652 af
Reach 24R: CB_3	Avg. Flow Depth=0.85' Max Vel=7.92 fps Inflow=10.18 cfs 0.652 af 24.0" Round Pipe n=0.011 L=99.0' S=0.0100 '/' Capacity=26.74 cfs Outflow=10.09 cfs 0.652 af
Reach 25R: SWALE	Avg. Flow Depth=0.35' Max Vel=4.20 fps Inflow=6.44 cfs 0.807 af n=0.022 L=145.0' S=0.0276 '/' Capacity=14.28 cfs Outflow=6.43 cfs 0.807 af
Pond 16P: INFILTRATION BASIN	Peak Elev=24.14' Storage=34,949 cf Inflow=20.27 cfs 2.709 af Discarded=3.54 cfs 2.357 af Primary=6.00 cfs 0.352 af Outflow=9.54 cfs 2.709 af

Baypointe CEDA

Type III 24-hr 100-Year Rainfall=7.00"

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Page 88

Link 17L: POST

Inflow=6.25 cfs 0.415 af
Primary=6.25 cfs 0.415 af

Total Runoff Area = 22.167 ac Runoff Volume = 4.314 af Average Runoff Depth = 2.34"
66.54% Pervious = 14.751 ac 33.46% Impervious = 7.417 ac

Summary for Subcatchment 3: PRE

Runoff = 6.97 cfs @ 12.99 hrs, Volume= 1.542 af, Depth= 1.67"

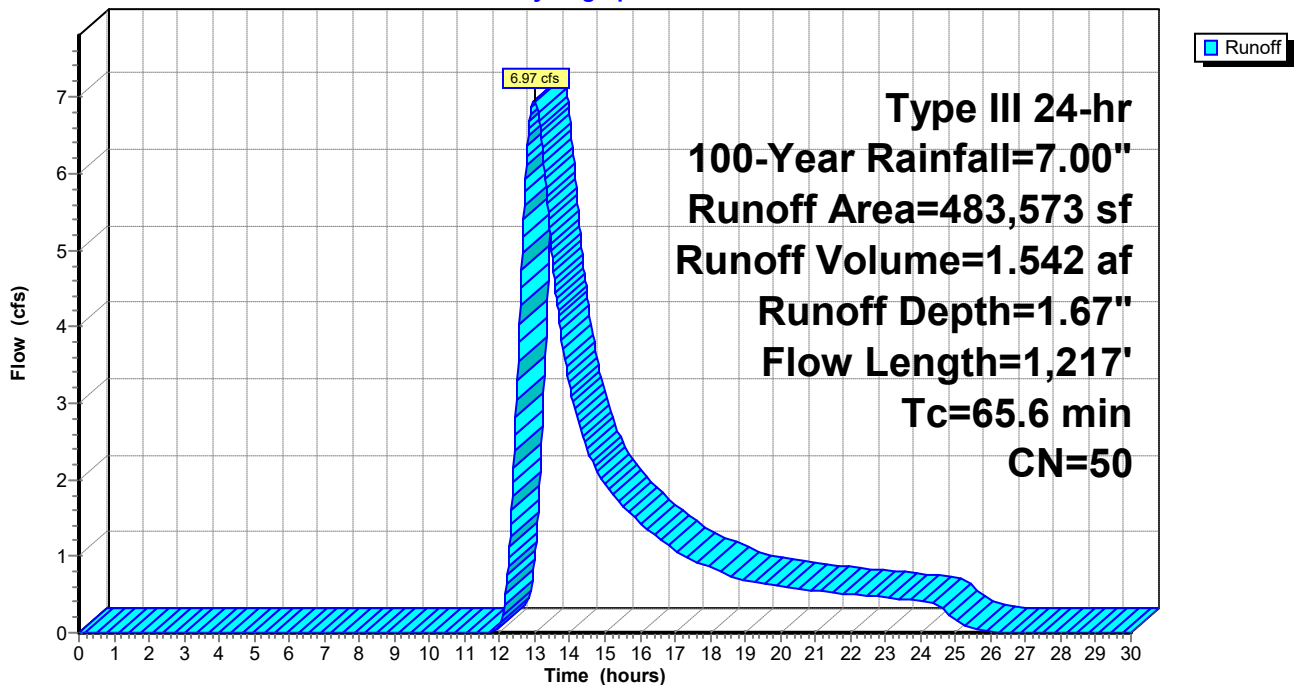
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.00"

Area (sf)	CN	Description
130,944	30	Woods, Good, HSG A
238,593	39	>75% Grass cover, Good, HSG A
* 112,792	98	Roads/Driveways/SWalk
* 1,244	98	Existing Roofs
483,573	50	Weighted Average
369,537	36	76.42% Pervious Area
114,036	98	23.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.0	267	0.0500	0.08		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	224	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
5.3	726	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
65.6	1,217	Total			

Subcatchment 3: PRE

Hydrograph



Summary for Subcatchment 6S: POST EAST

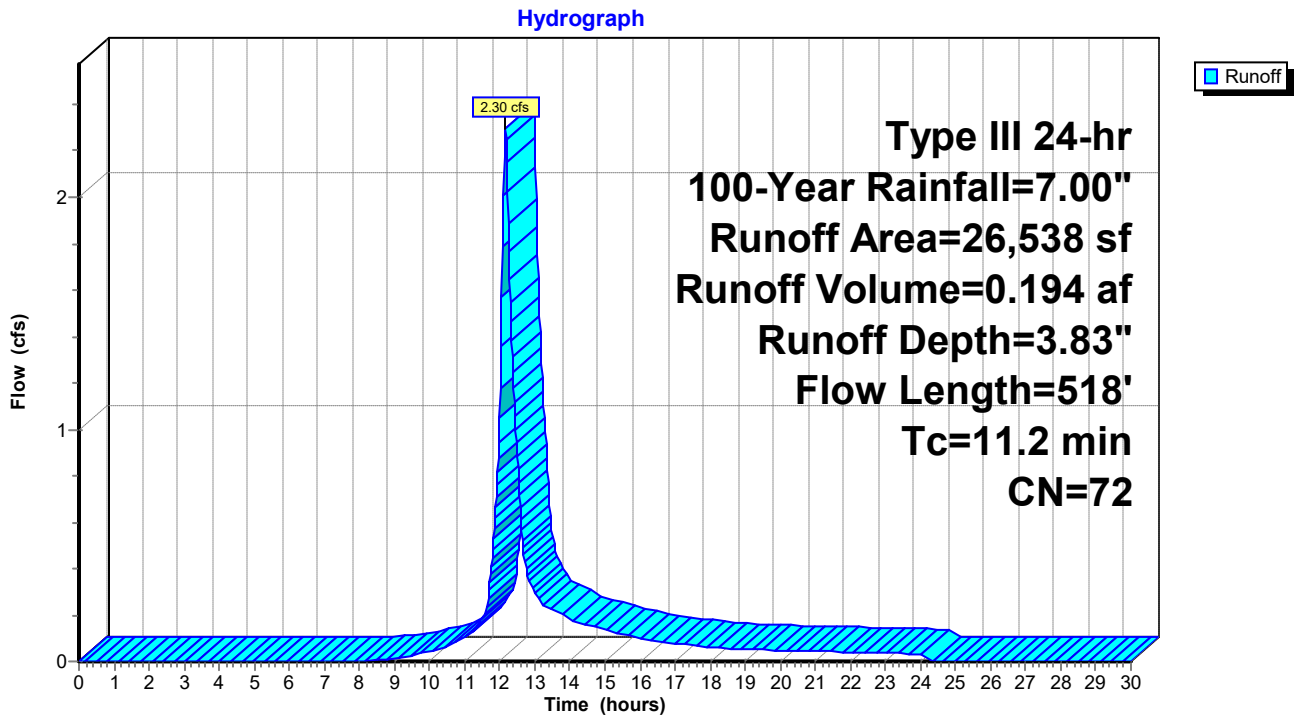
Runoff = 2.30 cfs @ 12.16 hrs, Volume= 0.194 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 100-Year Rainfall=7.00"

Area (sf)	CN	Description
14,982	98	Unconnected pavement, HSG A
11,556	39	>75% Grass cover, Good, HSG A
26,538	72	Weighted Average
11,556	39	43.55% Pervious Area
14,982	98	56.45% Impervious Area
14,982		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	119	0.0700	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.7	182	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	48	0.1700	6.64		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.6	169	0.0100	4.54	3.56	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Concrete pipe, bends & connections
11.2	518	Total			

Subcatchment 6S: POST EAST



Summary for Subcatchment 7S: POST UNC

Runoff = 0.27 cfs @ 12.86 hrs, Volume= 0.064 af, Depth= 1.00"

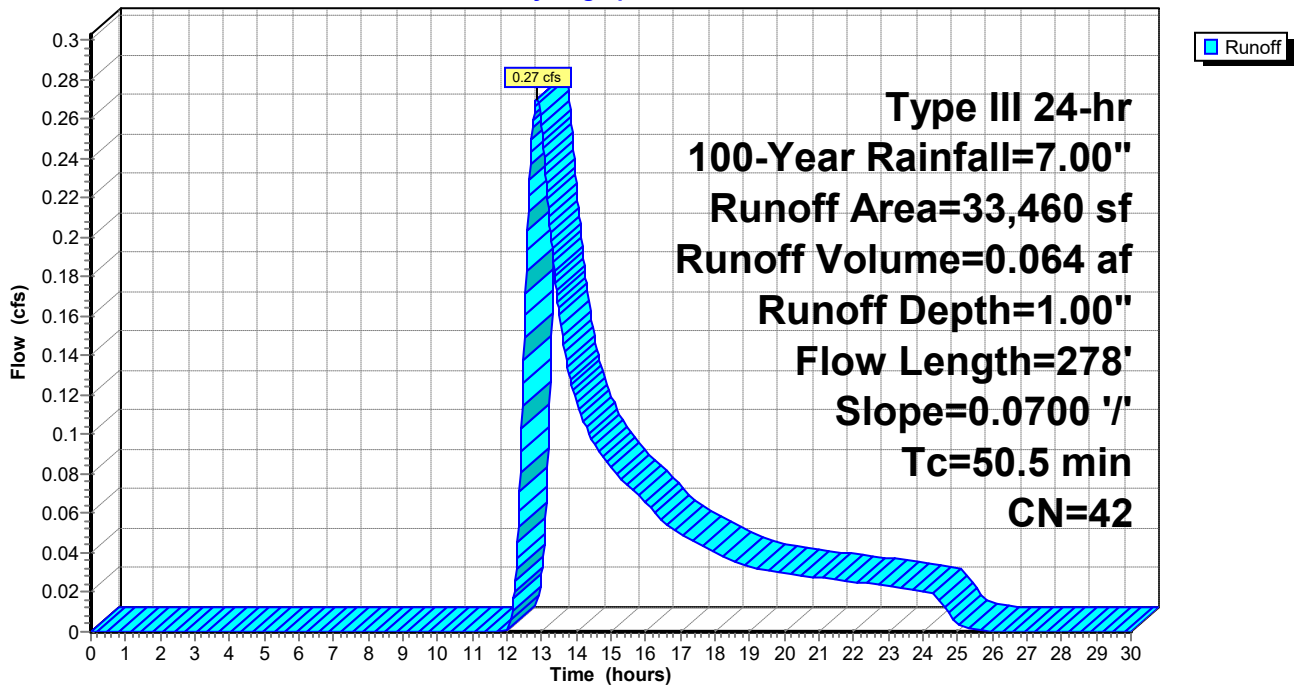
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.00"

Area (sf)	CN	Description
14,286	30	Woods, Good, HSG A
3,892	98	Roofs, HSG A
15,282	39	>75% Grass cover, Good, HSG A
33,460	42	Weighted Average
29,568	35	88.37% Pervious Area
3,892	98	11.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.5	278	0.0700	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"

Subcatchment 7S: POST UNC

Hydrograph



Summary for Subcatchment 8S: POST CENTER

Runoff = 2.29 cfs @ 12.08 hrs, Volume= 0.162 af, Depth= 4.69"

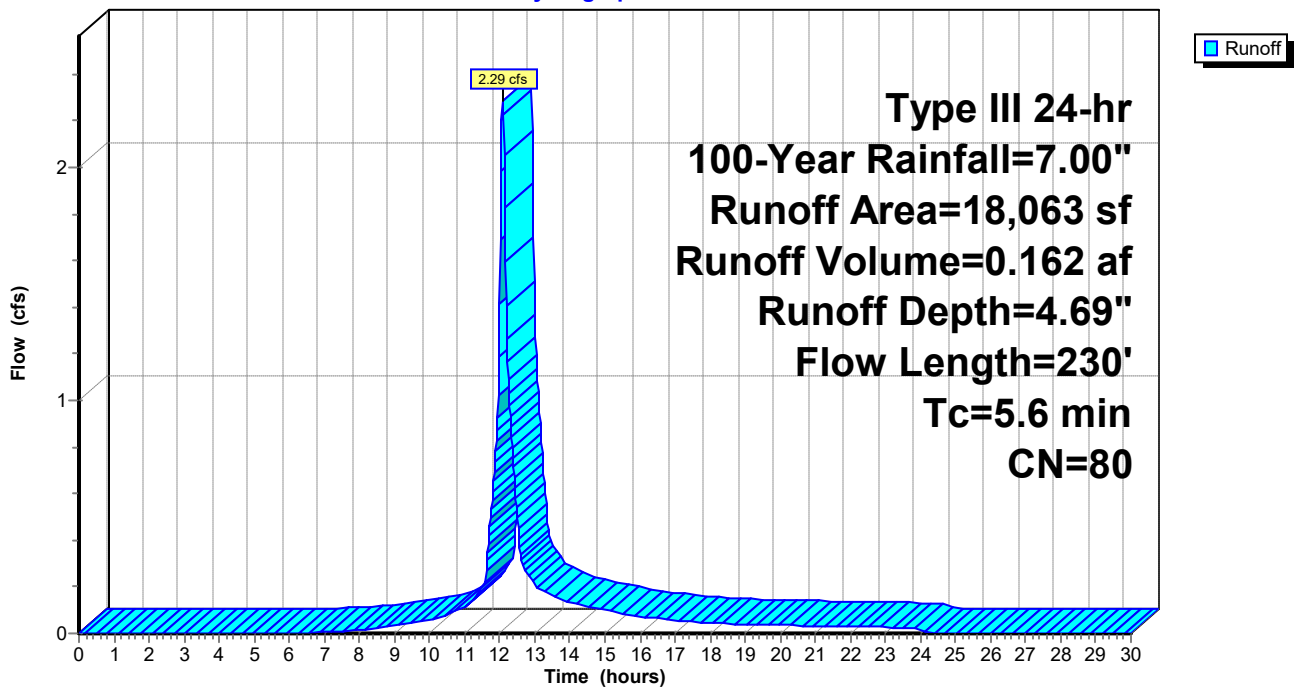
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.00"

Area (sf)	CN	Description
12,678	98	Unconnected pavement, HSG A
5,385	39	>75% Grass cover, Good, HSG A
18,063	80	Weighted Average
5,385	39	29.81% Pervious Area
12,678	98	70.19% Impervious Area
12,678		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	38	0.0500	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.1	192	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.6	230	Total			

Subcatchment 8S: POST CENTER

Hydrograph



Summary for Subcatchment 9S: POST WEST

Runoff = 10.28 cfs @ 12.04 hrs, Volume= 0.652 af, Depth= 4.15"

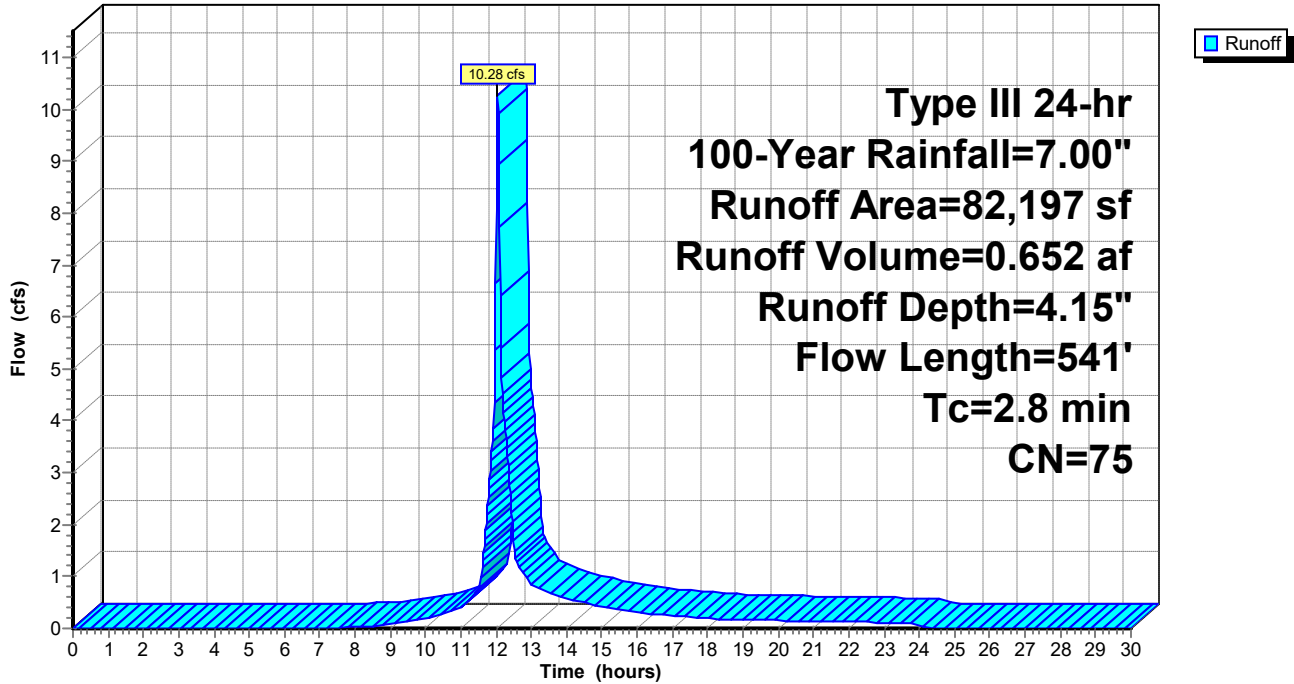
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.00"

Area (sf)	CN	Description
49,494	98	Unconnected pavement, HSG A
32,703	39	>75% Grass cover, Good, HSG A
82,197	75	Weighted Average
32,703	39	39.79% Pervious Area
49,494	98	60.21% Impervious Area
49,494		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	85	0.0200	1.35		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
1.5	266	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	20	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.1	71	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.2	99	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
2.8	541	Total			

Subcatchment 9S: POST WEST

Hydrograph



Summary for Subcatchment 10S: POST PARKING

Runoff = 6.74 cfs @ 12.30 hrs, Volume= 0.736 af, Depth= 3.10"

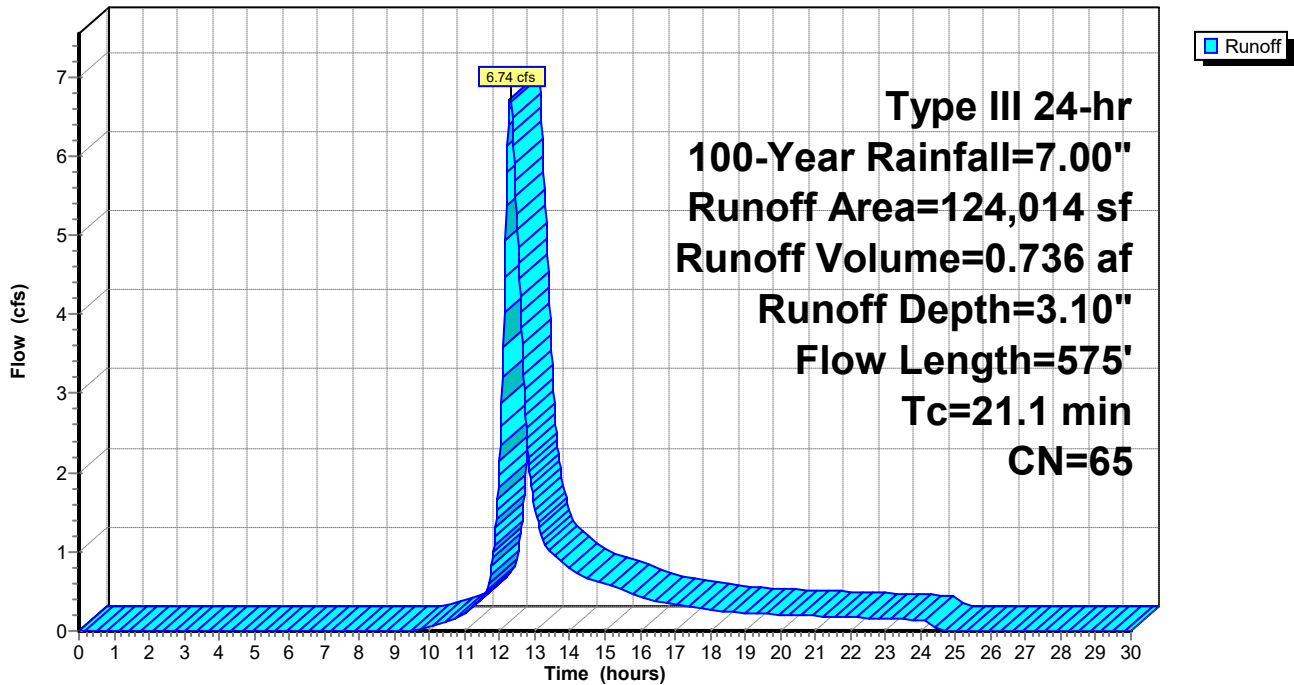
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.00"

	Area (sf)	CN	Description
*	14,043	98	Existing Impervious, HSG A
	68,984	39	>75% Grass cover, Good, HSG A
	40,987	98	Unconnected pavement, HSG A
	124,014	65	Weighted Average
	68,984	39	55.63% Pervious Area
	55,030	98	44.37% Impervious Area
	40,987		74.48% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	212	0.0400	0.18		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.7	363	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
21.1	575	Total			

Subcatchment 10S: POST PARKING

Hydrograph



Summary for Subcatchment 12S: POST BPD

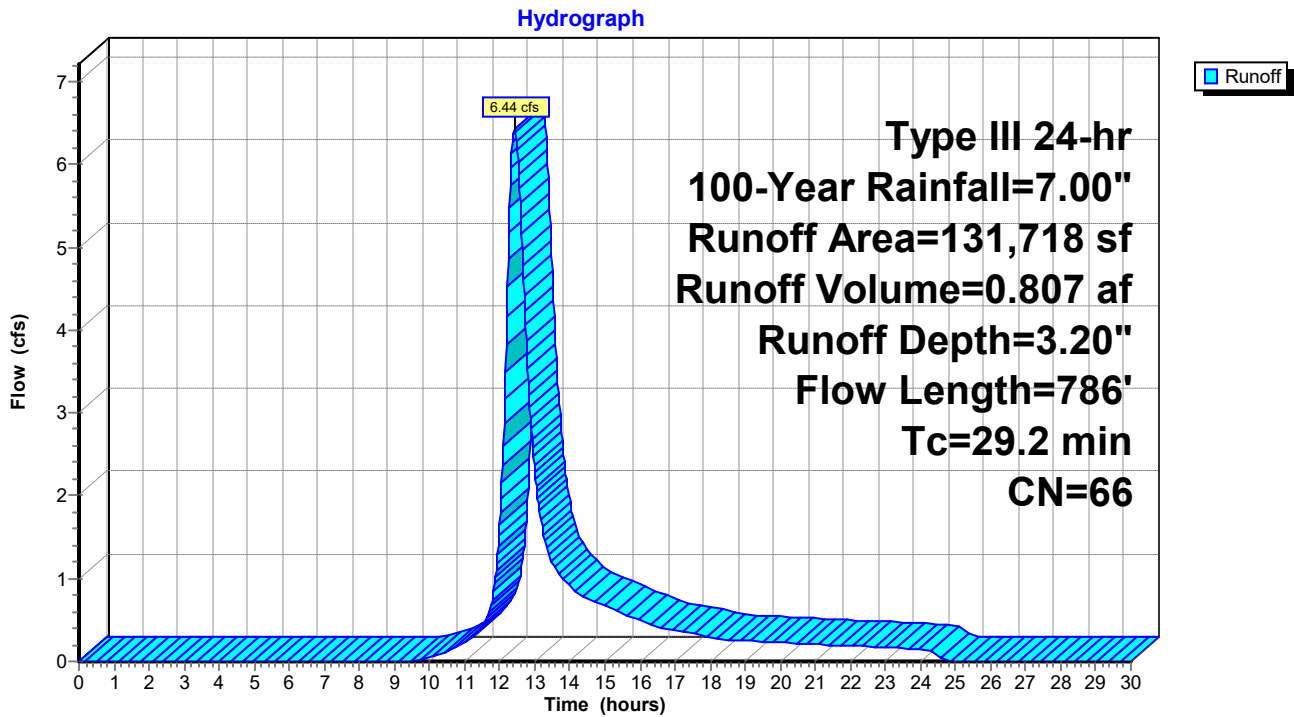
Runoff = 6.44 cfs @ 12.42 hrs, Volume= 0.807 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 100-Year Rainfall=7.00"

Area (sf)	CN	Description
* 43,950	98	Existing Impervious, HSG A
56,854	39	>75% Grass cover, Good, HSG A
11,751	30	Woods, Good, HSG A
19,163	98	Unconnected pavement, HSG A
131,718	66	Weighted Average
68,605	37	52.08% Pervious Area
63,113	98	47.92% Impervious Area
19,163		30.36% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	225	0.0200	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.4	303	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	113	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.4	145	0.0300	5.59	14.90	Parabolic Channel, W=8.00' D=0.50' Area=2.7 sf Perim=8.1' n= 0.022 Earth, clean & straight
29.2	786	Total			

Subcatchment 12S: POST BPD



Summary for Subcatchment 18S: POST BASIN

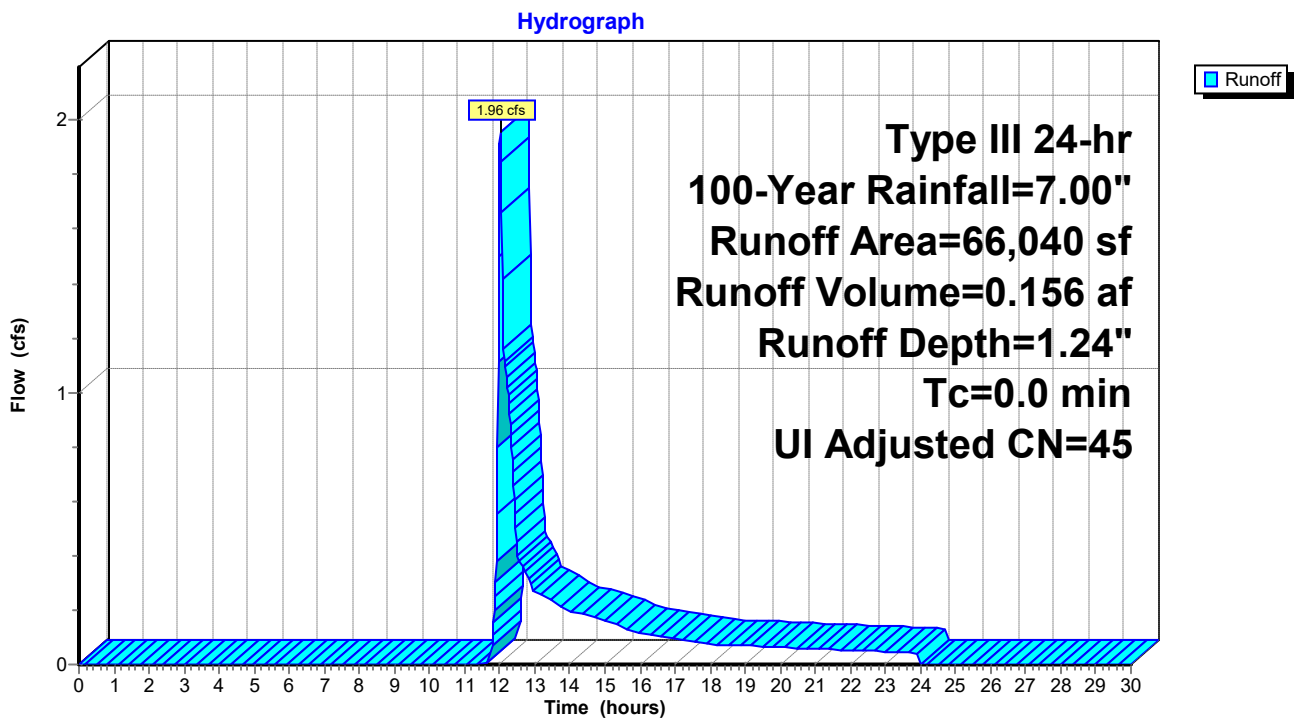
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.96 cfs @ 12.02 hrs, Volume= 0.156 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 100-Year Rainfall=7.00"

	Area (sf)	CN	Adj	Description
*	3,821	98		Existing Roof, HSG A
	6,024	98		Unconnected pavement, HSG A
	56,195	39		>75% Grass cover, Good, HSG A
	66,040	48	45	Weighted Average, UI Adjusted
	56,195	39	39	85.09% Pervious Area
	9,845	98	98	14.91% Impervious Area
	6,024			61.19% Unconnected

Subcatchment 18S: POST BASIN



Summary for Reach 19R: CB_4

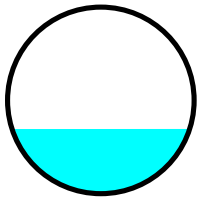
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.609 ac, 56.45% Impervious, Inflow Depth = 3.83" for 100-Year event
Inflow = 2.30 cfs @ 12.16 hrs, Volume= 0.194 af
Outflow = 2.30 cfs @ 12.16 hrs, Volume= 0.194 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 4.22 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.56 fps, Avg. Travel Time= 0.4 min

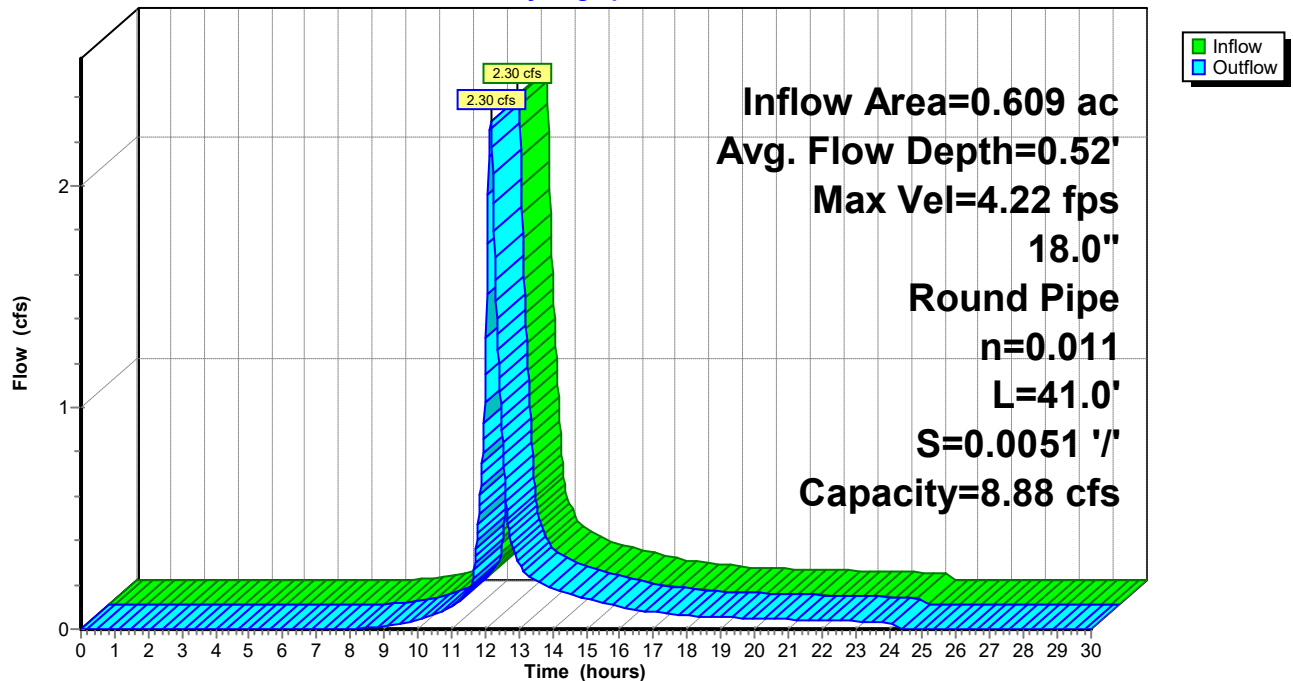
Peak Storage= 22 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.52'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.88 cfs

18.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 41.0' Slope= 0.0051 '/
Inlet Invert= 23.80', Outlet Invert= 23.59'



Reach 19R: CB_4

Hydrograph



Summary for Reach 20R: MH_1

[52] Hint: Inlet/Outlet conditions not evaluated

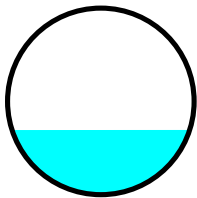
[62] Hint: Exceeded Reach 19R OUTLET depth by 0.01' @ 12.24 hrs

Inflow Area = 0.609 ac, 56.45% Impervious, Inflow Depth = 3.83" for 100-Year event
Inflow = 2.30 cfs @ 12.16 hrs, Volume= 0.194 af
Outflow = 2.28 cfs @ 12.17 hrs, Volume= 0.194 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 4.20 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.55 fps, Avg. Travel Time= 1.0 min

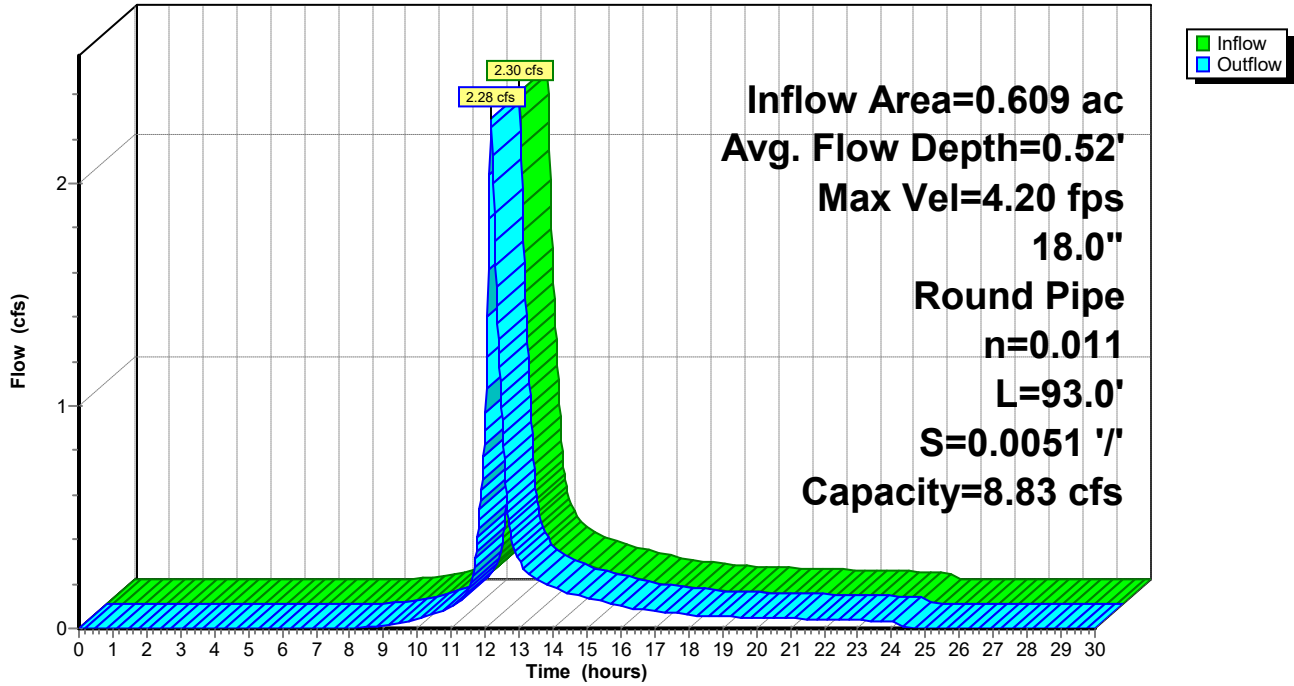
Peak Storage= 51 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.52'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.83 cfs

18.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 93.0' Slope= 0.0051 '/'
Inlet Invert= 23.59', Outlet Invert= 23.12'



Reach 20R: MH_1

Hydrograph



Summary for Reach 21R: MH_2

[52] Hint: Inlet/Outlet conditions not evaluated

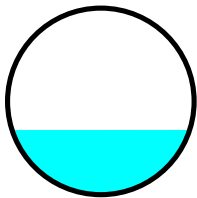
[62] Hint: Exceeded Reach 20R OUTLET depth by 0.01' @ 12.26 hrs

Inflow Area = 0.609 ac, 56.45% Impervious, Inflow Depth = 3.83" for 100-Year event
Inflow = 2.28 cfs @ 12.17 hrs, Volume= 0.194 af
Outflow = 2.28 cfs @ 12.18 hrs, Volume= 0.194 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 4.17 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.54 fps, Avg. Travel Time= 0.4 min

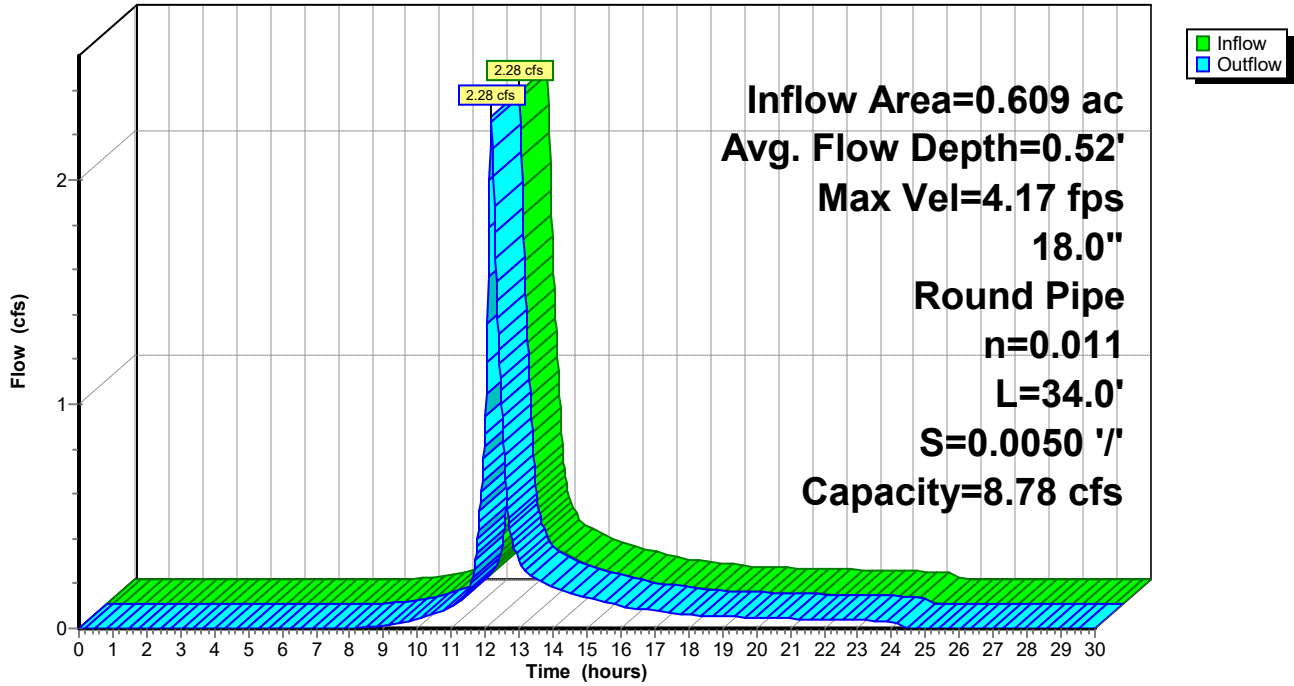
Peak Storage= 19 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.52'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.78 cfs

18.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 34.0' Slope= 0.0050 '/'
Inlet Invert= 23.12', Outlet Invert= 22.95'



Reach 21R: MH_2

Hydrograph



Summary for Reach 22R: CB_1

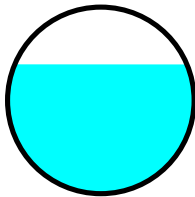
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.887 ac, 60.21% Impervious, Inflow Depth = 4.15" for 100-Year event
 Inflow = 10.28 cfs @ 12.04 hrs, Volume= 0.652 af
 Outflow = 10.22 cfs @ 12.05 hrs, Volume= 0.652 af, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 7.85 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.81 fps, Avg. Travel Time= 0.3 min

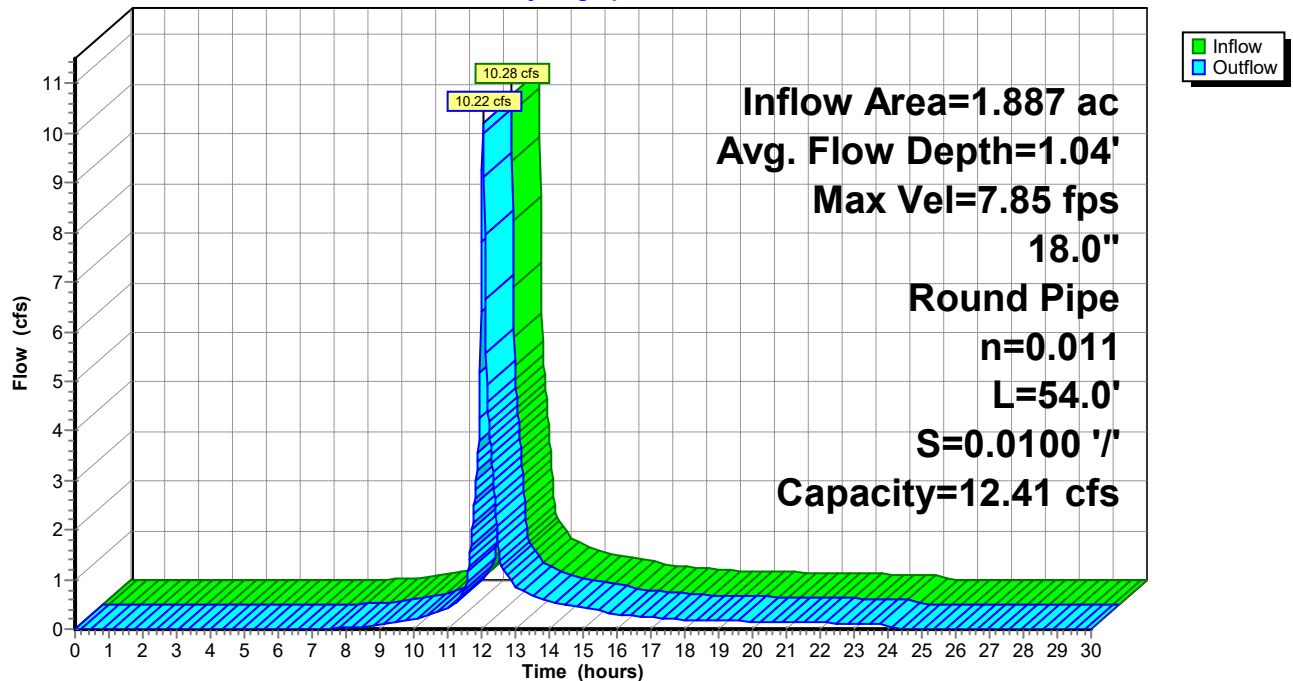
Peak Storage= 71 cf @ 12.05 hrs
 Average Depth at Peak Storage= 1.04'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 54.0' Slope= 0.0100 '/'
 Inlet Invert= 27.89', Outlet Invert= 27.35'



Reach 22R: CB_1

Hydrograph



Summary for Reach 23R: CB_2

[52] Hint: Inlet/Outlet conditions not evaluated

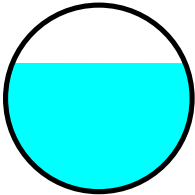
[62] Hint: Exceeded Reach 22R OUTLET depth by 0.01' @ 12.12 hrs

Inflow Area = 1.887 ac, 60.21% Impervious, Inflow Depth = 4.15" for 100-Year event
Inflow = 10.22 cfs @ 12.05 hrs, Volume= 0.652 af
Outflow = 10.18 cfs @ 12.05 hrs, Volume= 0.652 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 7.83 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.81 fps, Avg. Travel Time= 0.2 min

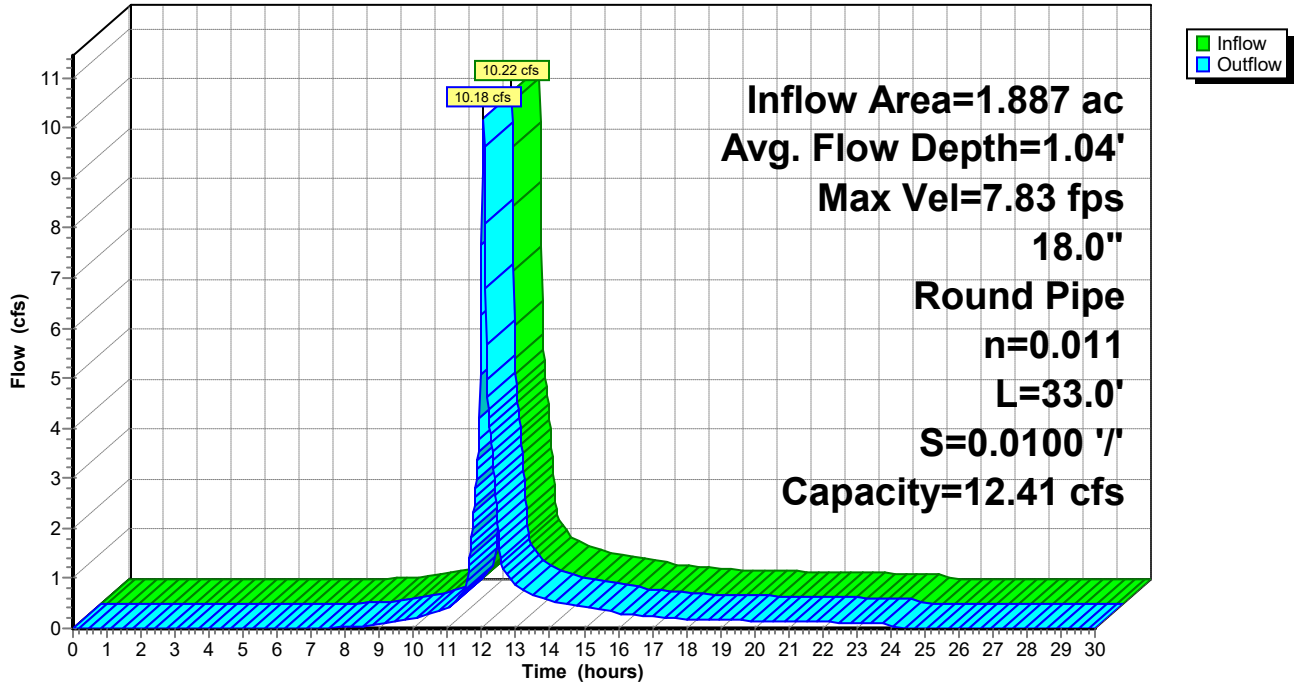
Peak Storage= 43 cf @ 12.05 hrs
Average Depth at Peak Storage= 1.04'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 33.0' Slope= 0.0100 '/'
Inlet Invert= 27.35', Outlet Invert= 27.02'



Reach 23R: CB_2

Hydrograph



Summary for Reach 24R: CB_3

[52] Hint: Inlet/Outlet conditions not evaluated

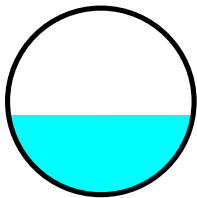
[62] Hint: Exceeded Reach 23R OUTLET depth by 0.01' @ 24.08 hrs

Inflow Area =	1.887 ac, 60.21% Impervious,	Inflow Depth = 4.15"	for 100-Year event
Inflow =	10.18 cfs @ 12.05 hrs,	Volume=	0.652 af
Outflow =	10.09 cfs @ 12.06 hrs,	Volume=	0.652 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 7.92 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.70 fps, Avg. Travel Time= 0.6 min

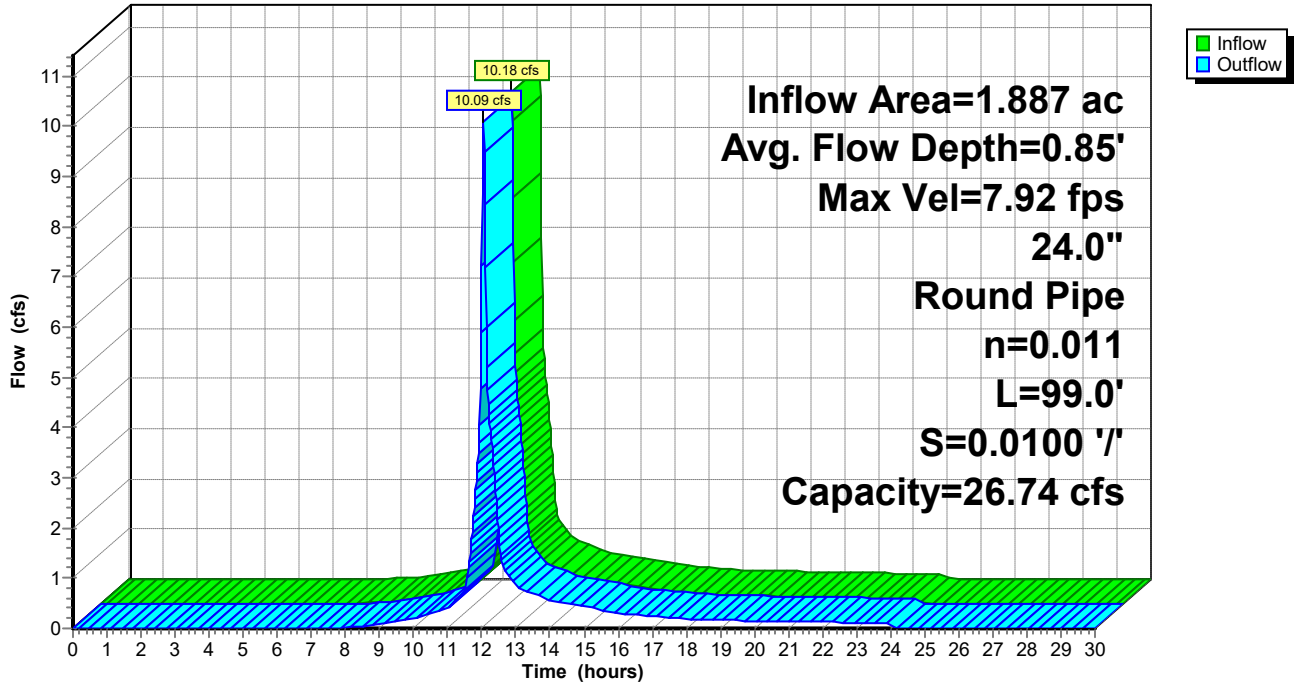
Peak Storage= 127 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.85'
 Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 26.74 cfs

24.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 99.0' Slope= 0.0100 '/'
 Inlet Invert= 27.02', Outlet Invert= 26.03'



Reach 24R: CB_3

Hydrograph



Summary for Reach 25R: SWALE

Inflow Area = 3.024 ac, 47.92% Impervious, Inflow Depth = 3.20" for 100-Year event
Inflow = 6.44 cfs @ 12.42 hrs, Volume= 0.807 af
Outflow = 6.43 cfs @ 12.44 hrs, Volume= 0.807 af, Atten= 0%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 4.20 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.64 fps, Avg. Travel Time= 1.5 min

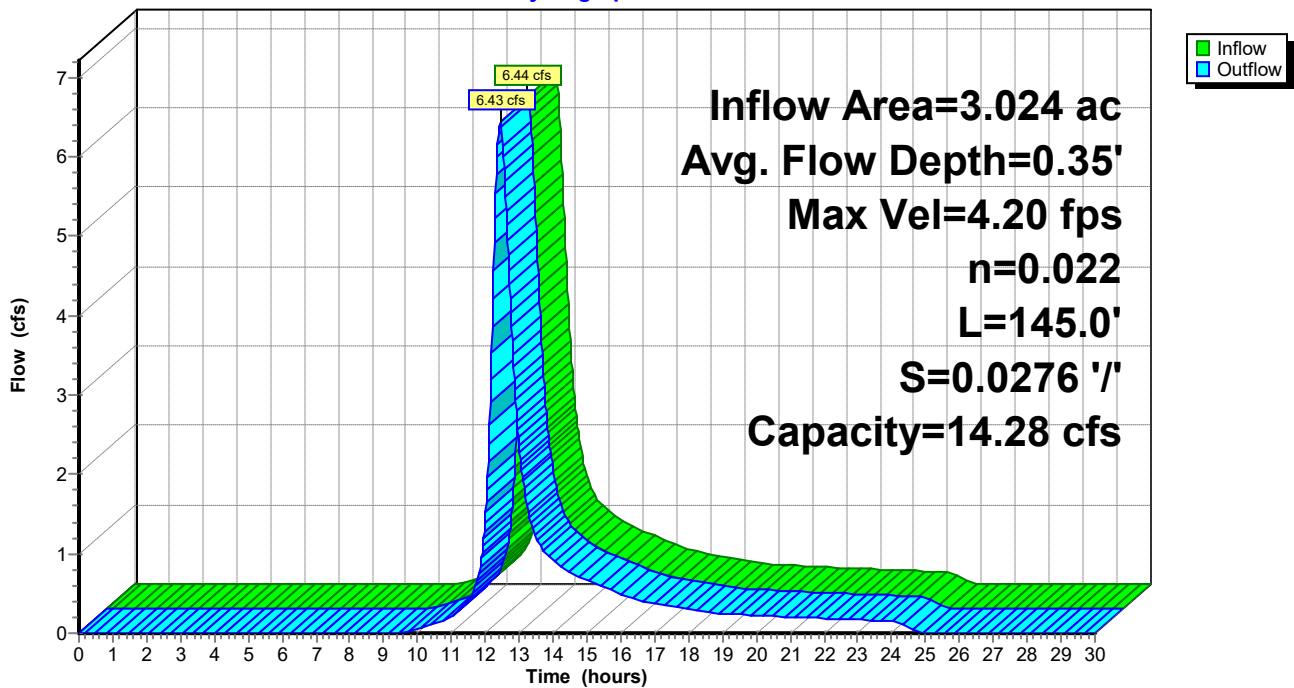
Peak Storage= 222 cf @ 12.43 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 0.50' Flow Area= 2.7 sf, Capacity= 14.28 cfs

8.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 145.0' Slope= 0.0276 '/'
Inlet Invert= 34.00', Outlet Invert= 30.00'



Reach 25R: SWALE

Hydrograph



Summary for Pond 16P: INFILTRATION BASIN

[63] Warning: Exceeded Reach 21R INLET depth by 0.79' @ 12.78 hrs

Inflow Area = 10.298 ac, 45.73% Impervious, Inflow Depth = 3.16" for 100-Year event
 Inflow = 20.27 cfs @ 12.07 hrs, Volume= 2.709 af
 Outflow = 9.54 cfs @ 12.72 hrs, Volume= 2.709 af, Atten= 53%, Lag= 38.8 min
 Discarded = 3.54 cfs @ 12.72 hrs, Volume= 2.357 af
 Primary = 6.00 cfs @ 12.72 hrs, Volume= 0.352 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Peak Elev= 24.14' @ 12.72 hrs Surf.Area= 18,507 sf Storage= 34,949 cf

Plug-Flow detention time= 70.9 min calculated for 2.707 af (100% of inflow)
 Center-of-Mass det. time= 70.9 min (917.4 - 846.5)

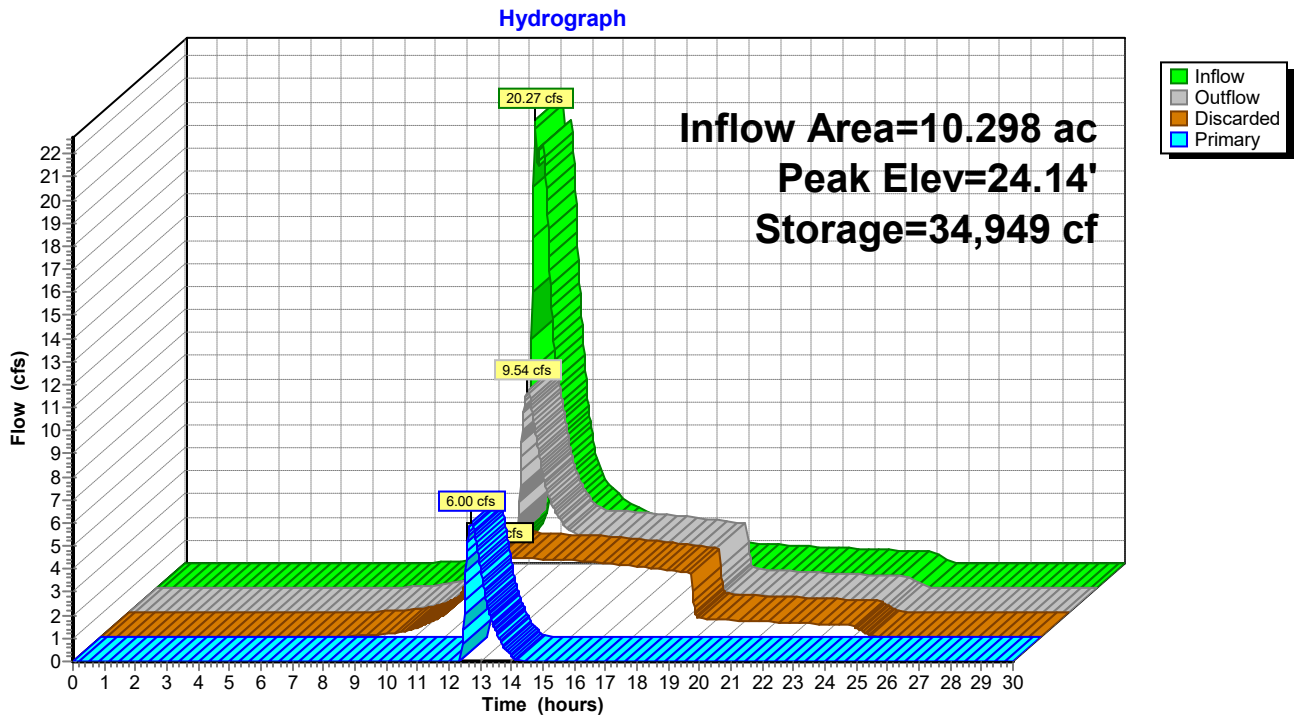
Volume	Invert	Avail.Storage	Storage Description
#1	22.00'	52,283 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	14,449	0	0
24.00	18,019	32,468	32,468
25.00	21,610	19,815	52,283

Device	Routing	Invert	Outlet Devices
#1	Discarded	22.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	23.75'	10.0' long x 6.0' breadth Broad-Crested Rectangular Weir
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65			
2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83			

Discarded OutFlow Max=3.54 cfs @ 12.72 hrs HW=24.14' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 3.54 cfs)

Primary OutFlow Max=5.99 cfs @ 12.72 hrs HW=24.14' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir** (Weir Controls 5.99 cfs @ 1.55 fps)

Pond 16P: INFILTRATION BASIN



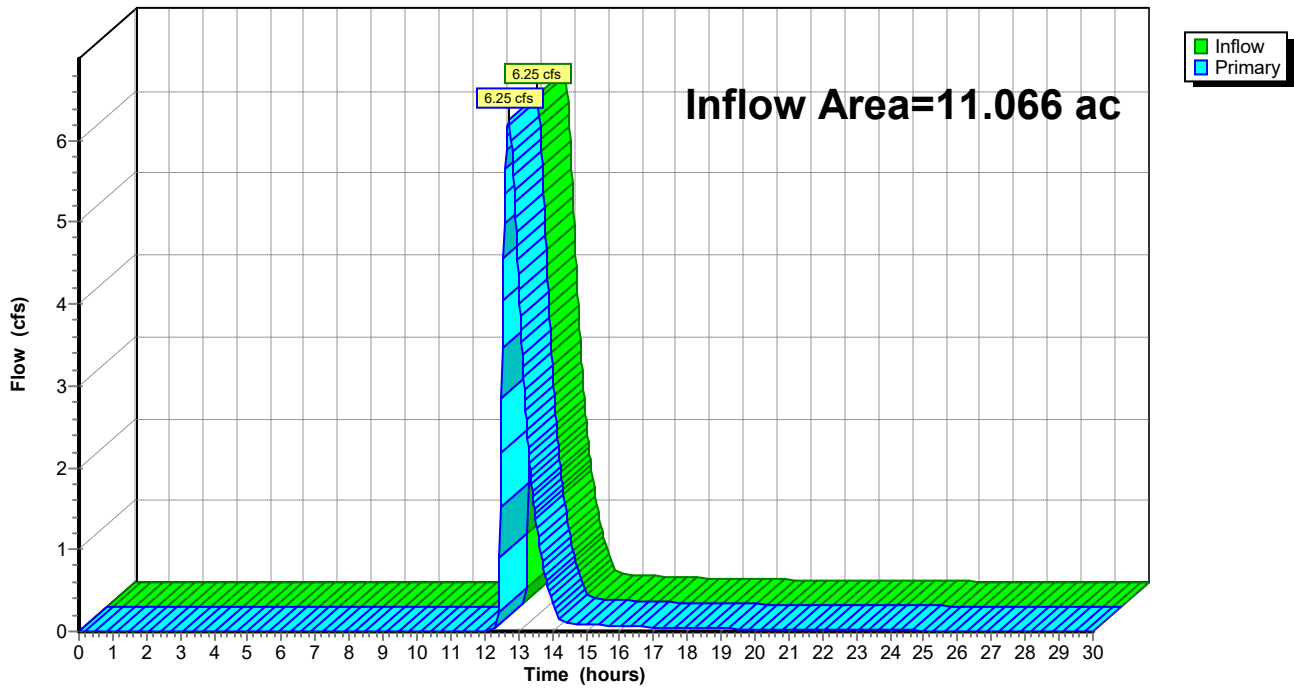
Summary for Link 17L: POST

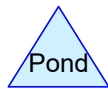
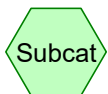
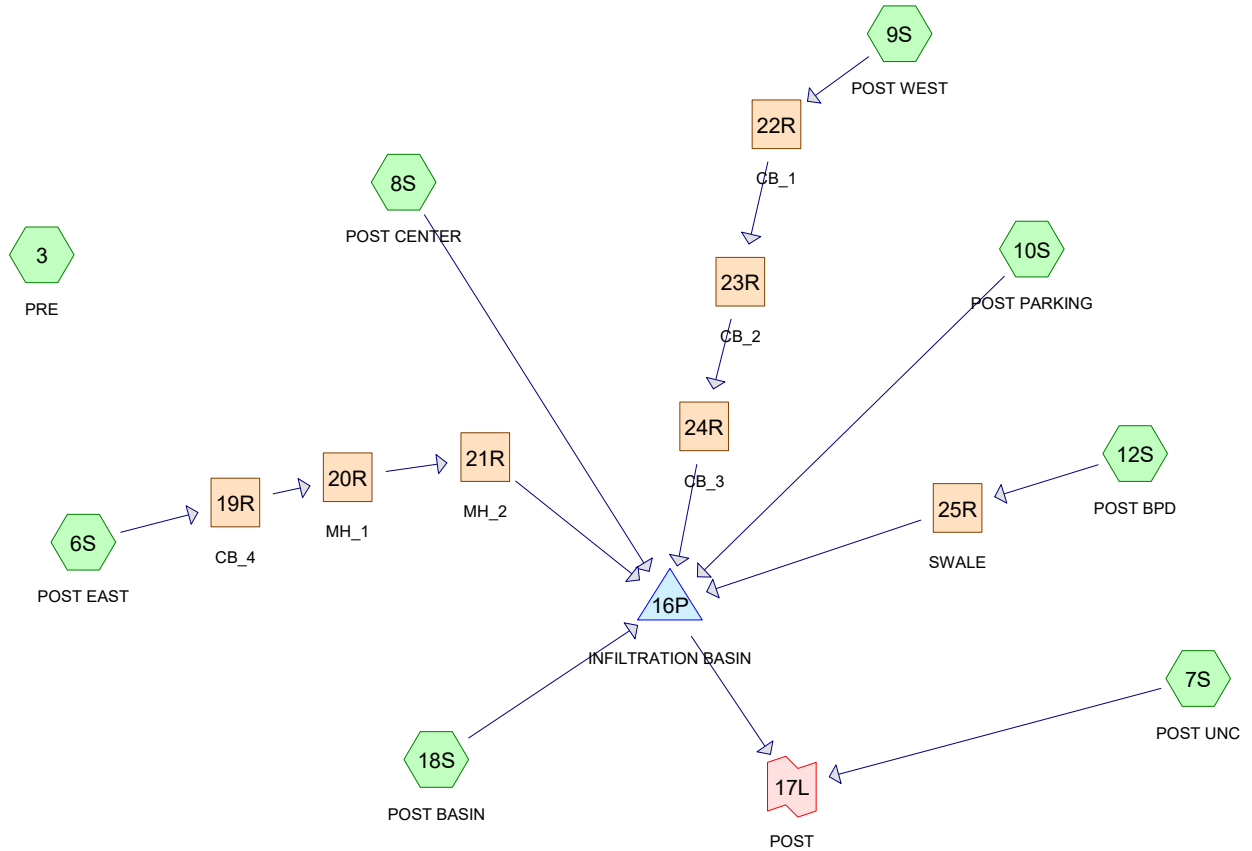
Inflow Area = 11.066 ac, 43.37% Impervious, Inflow Depth = 0.45" for 100-Year event
Inflow = 6.25 cfs @ 12.72 hrs, Volume= 0.415 af
Primary = 6.25 cfs @ 12.72 hrs, Volume= 0.415 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs

Link 17L: POST

Hydrograph





Routing Diagram for Baypointe CEDA
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Baypointe CEDA

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
11.147	39	>75% Grass cover, Good, HSG A (3, 6S, 7S, 8S, 9S, 10S, 12S, 18S)
1.331	98	Existing Impervious, HSG A (10S, 12S)
0.088	98	Existing Roof, HSG A (18S)
0.029	98	Existing Roofs (3)
2.589	98	Roads/Driveways/SWalk (3)
0.089	98	Roofs, HSG A (7S)
3.290	98	Unconnected pavement, HSG A (6S, 8S, 9S, 10S, 12S, 18S)
3.604	30	Woods, Good, HSG A (3, 7S, 12S)
22.167	57	TOTAL AREA

Baypointe CEDA

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
19.549	HSG A	3, 6S, 7S, 8S, 9S, 10S, 12S, 18S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
2.618	Other	3
22.167		TOTAL AREA

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Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
11.147	0.000	0.000	0.000	0.000	11.147	>75% Grass cover, Good	3, 6S, 7S, 8S, 9S, 10S, 12S, 18S
1.331	0.000	0.000	0.000	0.000	1.331	Existing Impervious	10S, 12S
0.088	0.000	0.000	0.000	0.000	0.088	Existing Roof	18S
0.000	0.000	0.000	0.000	0.029	0.029	Existing Roofs	3
0.000	0.000	0.000	0.000	2.589	2.589	Roads/Driveways/SWalk	3
0.089	0.000	0.000	0.000	0.000	0.089	Roofs	7S
3.290	0.000	0.000	0.000	0.000	3.290	Unconnected pavement	6S, 8S, 9S, 10S, 12S, 18S
3.604	0.000	0.000	0.000	0.000	3.604	Woods, Good	3, 7S, 12S
19.549	0.000	0.000	0.000	2.618	22.167	TOTAL AREA	

Baypointe CEDA

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Page 5

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	6S	0.00	0.00	169.0	0.0100	0.013	12.0	0.0	0.0
2	9S	0.00	0.00	20.0	0.0400	0.011	12.0	0.0	0.0
3	9S	0.00	0.00	71.0	0.0400	0.011	12.0	0.0	0.0
4	9S	0.00	0.00	99.0	0.0400	0.011	12.0	0.0	0.0
5	19R	23.80	23.59	41.0	0.0051	0.011	18.0	0.0	0.0
6	20R	23.59	23.12	93.0	0.0051	0.011	18.0	0.0	0.0
7	21R	23.12	22.95	34.0	0.0050	0.011	18.0	0.0	0.0
8	22R	27.89	27.35	54.0	0.0100	0.011	18.0	0.0	0.0
9	23R	27.35	27.02	33.0	0.0100	0.011	18.0	0.0	0.0
10	24R	27.02	26.03	99.0	0.0100	0.011	24.0	0.0	0.0

Baypointe CEDA

Type III 24-hr WQV Rainfall=1.20"

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Page 6

Time span=0.00-30.00 hrs, dt=0.02 hrs, 1501 points
 Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. U1 as Pervious
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 3: PRE Runoff Area=483,573 sf 23.58% Impervious Runoff Depth=0.23"
 Flow Length=1,217' Tc=65.6 min CN=36/98 Runoff=1.09 cfs 0.215 af

Subcatchment 6S: POST EAST Runoff Area=26,538 sf 0.00% Impervious Runoff Depth=0.04"
 Flow Length=518' Tc=11.2 min CN=72/0 Runoff=0.00 cfs 0.002 af

Subcatchment 7S: POST UNC Runoff Area=33,460 sf 11.63% Impervious Runoff Depth=0.11"
 Flow Length=278' Slope=0.0700 '/' Tc=50.5 min CN=35/98 Runoff=0.04 cfs 0.007 af

Subcatchment 8S: POST CENTER Runoff Area=18,063 sf 0.00% Impervious Runoff Depth=0.15"
 Flow Length=230' Tc=5.6 min CN=80/0 Runoff=0.04 cfs 0.005 af

Subcatchment 9S: POST WEST Runoff Area=82,197 sf 0.00% Impervious Runoff Depth=0.07"
 Flow Length=541' Tc=2.8 min CN=75/0 Runoff=0.05 cfs 0.012 af

Subcatchment 10S: POST PARKING Runoff Area=124,014 sf 11.32% Impervious Runoff Depth=0.11"
 Flow Length=575' Tc=21.1 min CN=61/98 Runoff=0.23 cfs 0.026 af

Subcatchment 12S: POST BPD Runoff Area=131,718 sf 33.37% Impervious Runoff Depth=0.33"
 Flow Length=786' Tc=29.2 min CN=51/98 Runoff=0.64 cfs 0.083 af

Subcatchment 18S: POST BASIN Runoff Area=66,040 sf 5.79% Impervious Runoff Depth=0.06"
 Tc=0.0 min CN=45/98 Runoff=0.12 cfs 0.007 af

Reach 19R: CB_4 Avg. Flow Depth=0.02' Max Vel=0.63 fps Inflow=0.00 cfs 0.002 af
 18.0" Round Pipe n=0.011 L=41.0' S=0.0051 '/' Capacity=8.88 cfs Outflow=0.00 cfs 0.002 af

Reach 20R: MH_1 Avg. Flow Depth=0.02' Max Vel=0.63 fps Inflow=0.00 cfs 0.002 af
 18.0" Round Pipe n=0.011 L=93.0' S=0.0051 '/' Capacity=8.83 cfs Outflow=0.00 cfs 0.002 af

Reach 21R: MH_2 Avg. Flow Depth=0.02' Max Vel=0.63 fps Inflow=0.00 cfs 0.002 af
 18.0" Round Pipe n=0.011 L=34.0' S=0.0050 '/' Capacity=8.78 cfs Outflow=0.00 cfs 0.002 af

Reach 22R: CB_1 Avg. Flow Depth=0.07' Max Vel=1.70 fps Inflow=0.05 cfs 0.012 af
 18.0" Round Pipe n=0.011 L=54.0' S=0.0100 '/' Capacity=12.41 cfs Outflow=0.05 cfs 0.012 af

Reach 23R: CB_2 Avg. Flow Depth=0.07' Max Vel=1.70 fps Inflow=0.05 cfs 0.012 af
 18.0" Round Pipe n=0.011 L=33.0' S=0.0100 '/' Capacity=12.41 cfs Outflow=0.05 cfs 0.012 af

Reach 24R: CB_3 Avg. Flow Depth=0.06' Max Vel=1.63 fps Inflow=0.05 cfs 0.012 af
 24.0" Round Pipe n=0.011 L=99.0' S=0.0100 '/' Capacity=26.74 cfs Outflow=0.05 cfs 0.012 af

Reach 25R: SWALE Avg. Flow Depth=0.12' Max Vel=2.06 fps Inflow=0.64 cfs 0.083 af
 n=0.022 L=145.0' S=0.0276 '/' Capacity=14.28 cfs Outflow=0.64 cfs 0.083 af

Pond 16P: INFILTRATION BASIN Peak Elev=22.01' Storage=145 cf Inflow=0.94 cfs 0.136 af
 Discarded=0.93 cfs 0.136 af Primary=0.00 cfs 0.000 af Outflow=0.93 cfs 0.136 af

Baypointe CEDA

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Type III 24-hr WQV Rainfall=1.20"

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Page 7

Link 17L: POST

Inflow=0.04 cfs 0.007 af

Primary=0.04 cfs 0.007 af

Total Runoff Area = 22.167 ac Runoff Volume = 0.358 af Average Runoff Depth = 0.19"
81.39% Pervious = 18.041 ac 18.61% Impervious = 4.126 ac

Summary for Subcatchment 3: PRE

Runoff = 1.09 cfs @ 12.84 hrs, Volume= 0.215 af, Depth= 0.23"

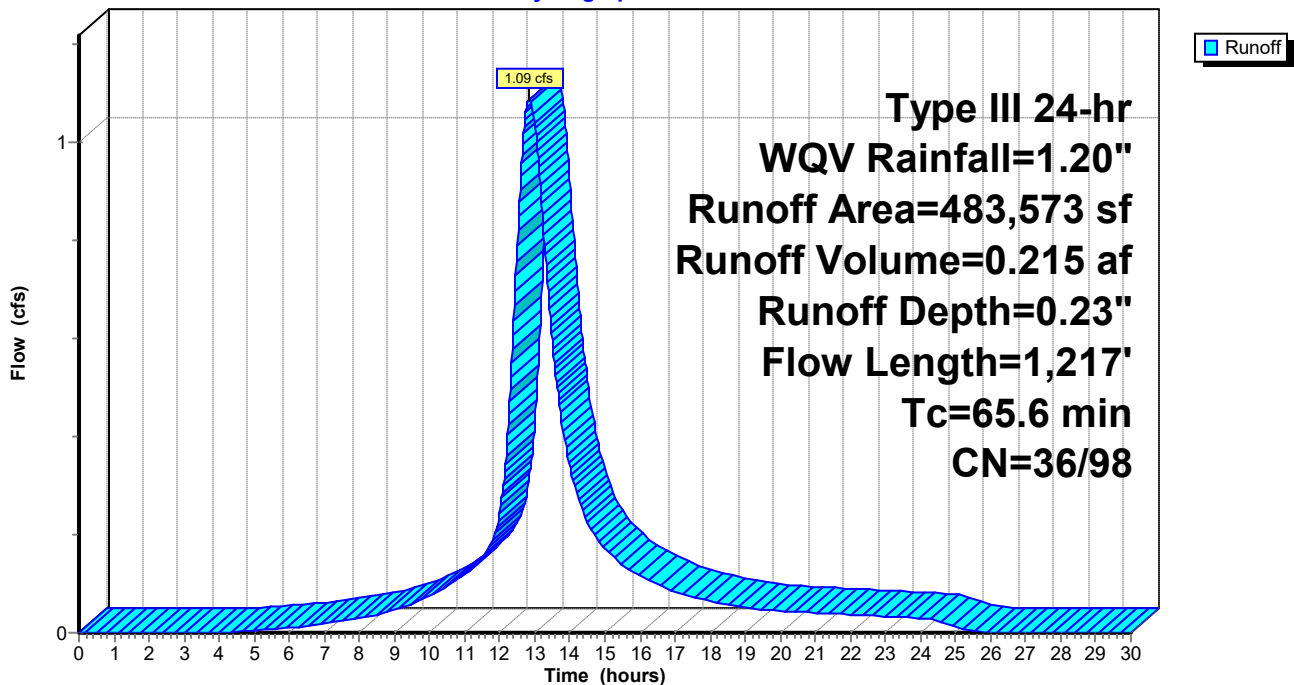
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-30.00 hrs, dt= 0.02 hr
Type III 24-hr WQV Rainfall=1.20"

Area (sf)	CN	Description
130,944	30	Woods, Good, HSG A
238,593	39	>75% Grass cover, Good, HSG A
* 112,792	98	Roads/Driveways/SWalk
* 1,244	98	Existing Roofs
483,573	50	Weighted Average
369,537	36	76.42% Pervious Area
114,036	98	23.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.0	267	0.0500	0.08		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	224	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
5.3	726	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
65.6	1,217	Total			

Subcatchment 3: PRE

Hydrograph



Summary for Subcatchment 6S: POST EAST

Runoff = 0.00 cfs @ 13.72 hrs, Volume= 0.002 af, Depth= 0.04"

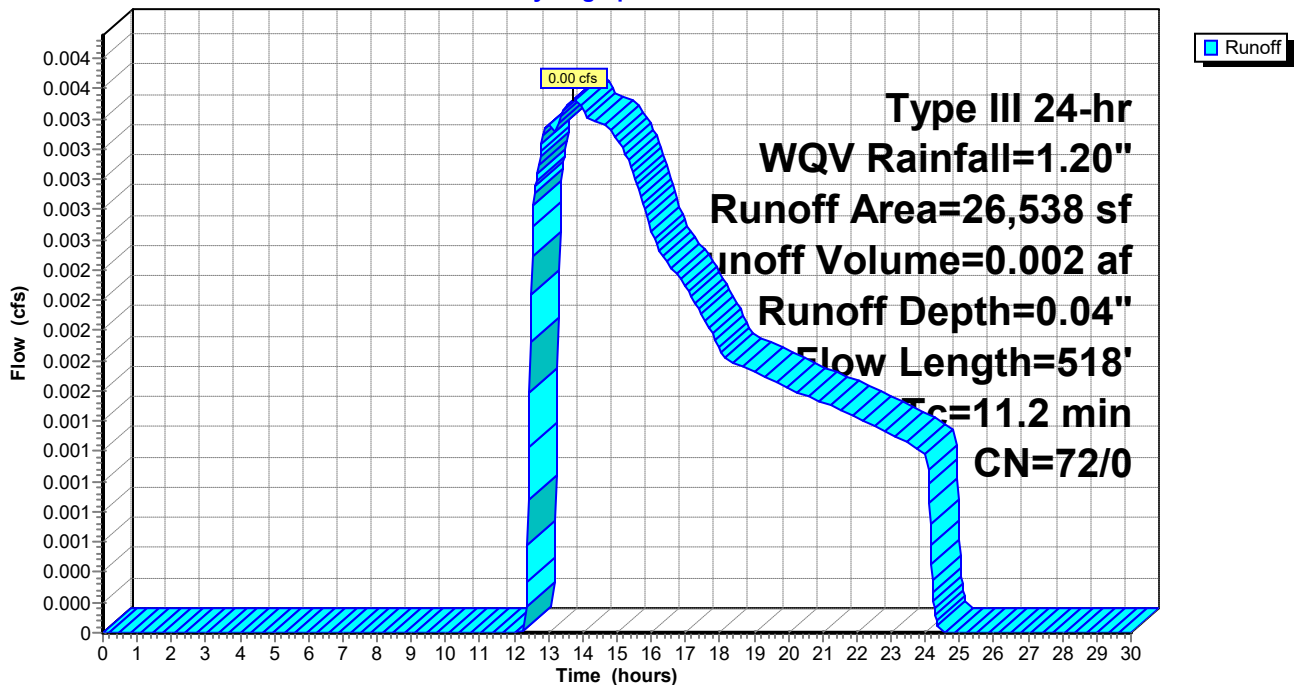
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-30.00 hrs, dt= 0.02 hr
Type III 24-hr WQV Rainfall=1.20"

Area (sf)	CN	Description
14,982	98	Unconnected pavement, HSG A
11,556	39	>75% Grass cover, Good, HSG A
26,538	72	Weighted Average
26,538	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	119	0.0700	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.7	182	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	48	0.1700	6.64		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.6	169	0.0100	4.54	3.56	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Concrete pipe, bends & connections
11.2	518	Total			

Subcatchment 6S: POST EAST

Hydrograph



Summary for Subcatchment 7S: POST UNC

Runoff = 0.04 cfs @ 12.65 hrs, Volume= 0.007 af, Depth= 0.11"

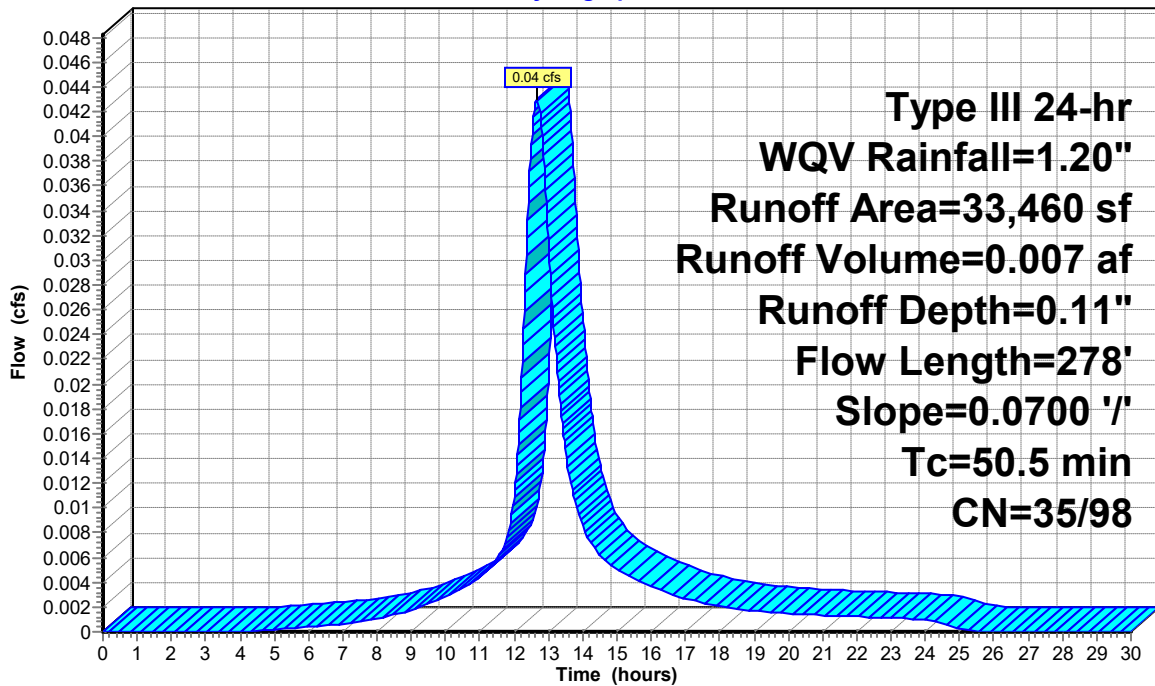
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-30.00 hrs, dt= 0.02 h
Type III 24-hr WQV Rainfall=1.20"

Area (sf)	CN	Description
14,286	30	Woods, Good, HSG A
3,892	98	Roofs, HSG A
15,282	39	>75% Grass cover, Good, HSG A
33,460	42	Weighted Average
29,568	35	88.37% Pervious Area
3,892	98	11.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.5	278	0.0700	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"

Subcatchment 7S: POST UNC

Hydrograph



Runoff

Summary for Subcatchment 8S: POST CENTER

Runoff = 0.04 cfs @ 12.12 hrs, Volume= 0.005 af, Depth= 0.15"

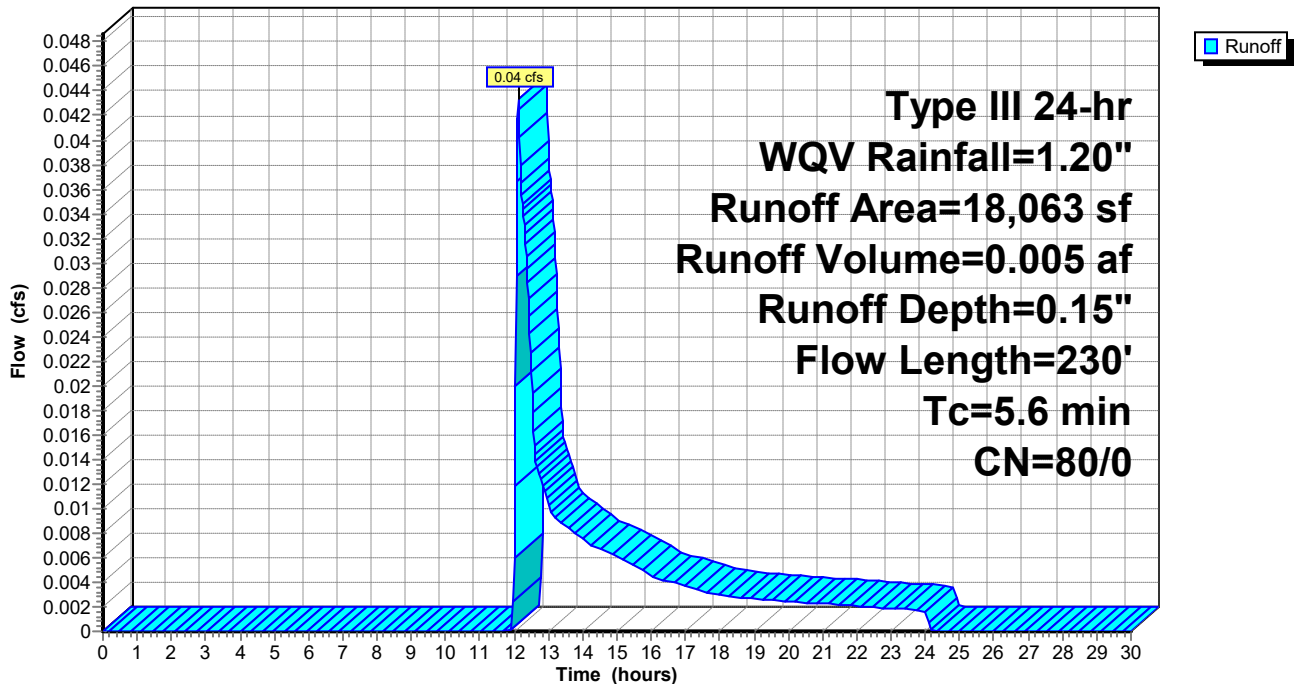
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-30.00 hrs, dt= 0.02 hr
 Type III 24-hr WQV Rainfall=1.20"

Area (sf)	CN	Description
12,678	98	Unconnected pavement, HSG A
5,385	39	>75% Grass cover, Good, HSG A
18,063	80	Weighted Average
18,063	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	38	0.0500	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.1	192	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.6	230	Total			

Subcatchment 8S: POST CENTER

Hydrograph



Summary for Subcatchment 9S: POST WEST

Runoff = 0.05 cfs @ 12.33 hrs, Volume= 0.012 af, Depth= 0.07"

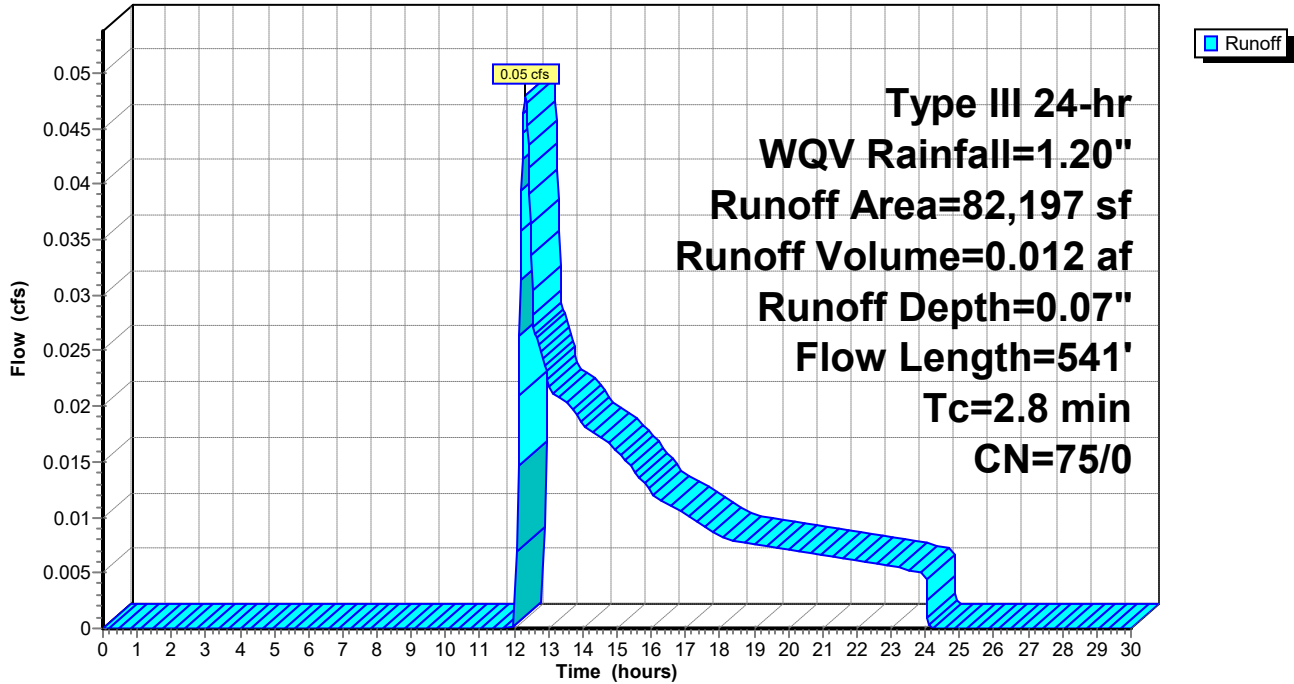
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-30.00 hrs, dt= 0.02 hr
 Type III 24-hr WQV Rainfall=1.20"

Area (sf)	CN	Description
49,494	98	Unconnected pavement, HSG A
32,703	39	>75% Grass cover, Good, HSG A
82,197	75	Weighted Average
82,197	75	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	85	0.0200	1.35		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
1.5	266	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	20	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.1	71	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.2	99	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
2.8	541	Total			

Subcatchment 9S: POST WEST

Hydrograph



Summary for Subcatchment 10S: POST PARKING

Runoff = 0.23 cfs @ 12.28 hrs, Volume= 0.026 af, Depth= 0.11"

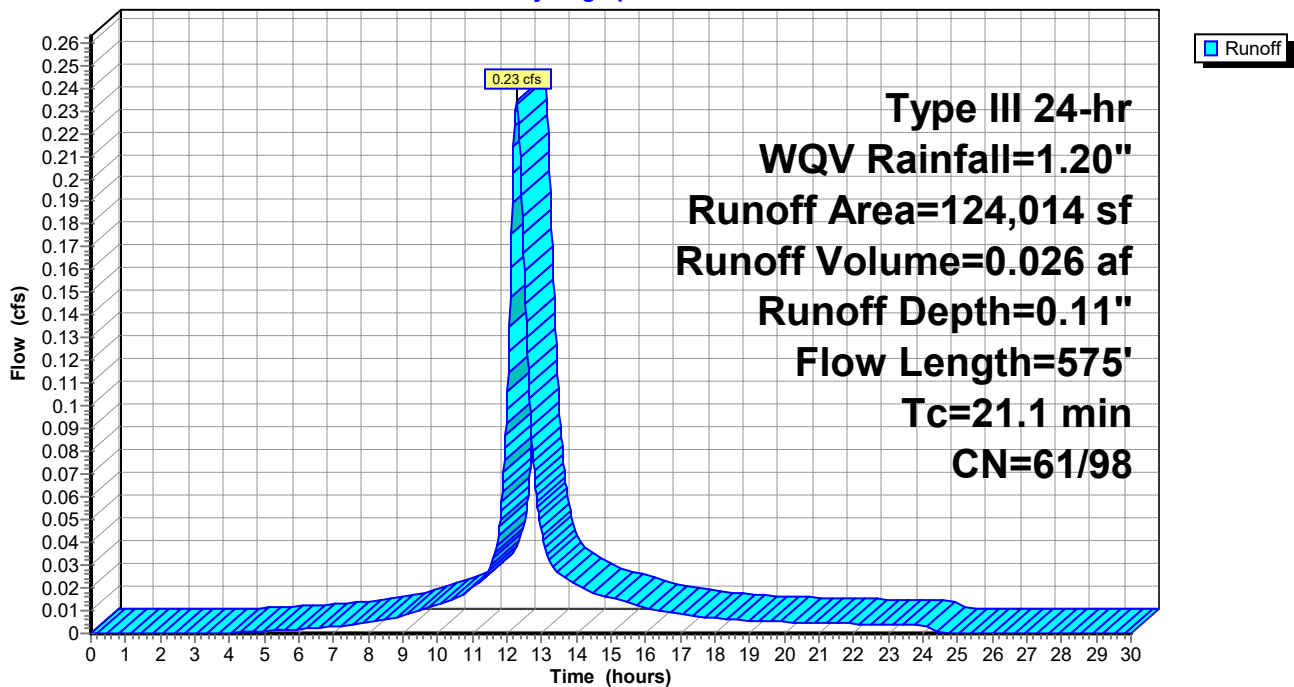
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-30.00 hrs, dt= 0.02 h
Type III 24-hr WQV Rainfall=1.20"

	Area (sf)	CN	Description
*	14,043	98	Existing Impervious, HSG A
	68,984	39	>75% Grass cover, Good, HSG A
	40,987	98	Unconnected pavement, HSG A
	124,014	65	Weighted Average
	109,971	61	88.68% Pervious Area
	14,043	98	11.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	212	0.0400	0.18		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.7	363	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
21.1	575	Total			

Subcatchment 10S: POST PARKING

Hydrograph



Summary for Subcatchment 12S: POST BPD

Runoff = 0.64 cfs @ 12.38 hrs, Volume= 0.083 af, Depth= 0.33"

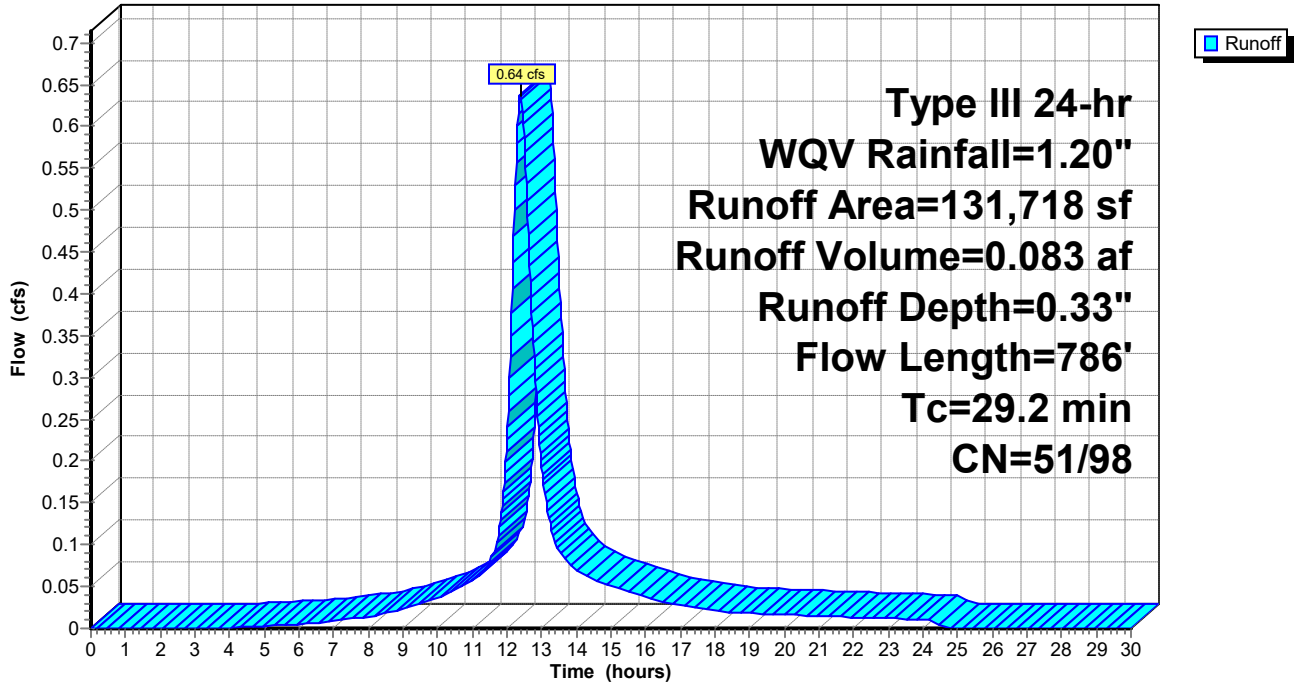
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-30.00 hrs, dt= 0.02 hr
 Type III 24-hr WQV Rainfall=1.20"

Area (sf)	CN	Description
* 43,950	98	Existing Impervious, HSG A
56,854	39	>75% Grass cover, Good, HSG A
11,751	30	Woods, Good, HSG A
19,163	98	Unconnected pavement, HSG A
131,718	66	Weighted Average
87,768	51	66.63% Pervious Area
43,950	98	33.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	225	0.0200	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.4	303	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	113	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.4	145	0.0300	5.59	14.90	Parabolic Channel, W=8.00' D=0.50' Area=2.7 sf Perim=8.1' n= 0.022 Earth, clean & straight
29.2	786	Total			

Subcatchment 12S: POST BPD

Hydrograph



Summary for Subcatchment 18S: POST BASIN

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

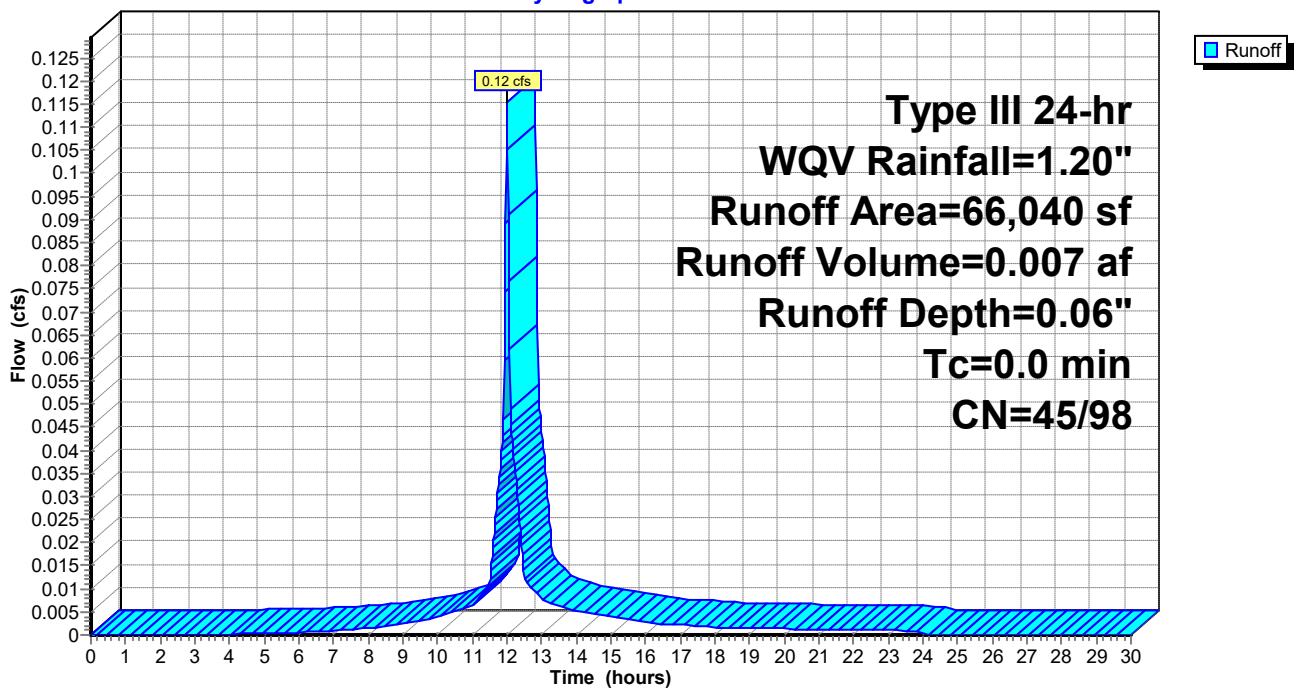
Runoff = 0.12 cfs @ 12.00 hrs, Volume= 0.007 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-30.00 hrs, dt= 0.02 h
 Type III 24-hr WQV Rainfall=1.20"

	Area (sf)	CN	Description
*	3,821	98	Existing Roof, HSG A
	6,024	98	Unconnected pavement, HSG A
	56,195	39	>75% Grass cover, Good, HSG A
	66,040	48	Weighted Average
	62,219	45	94.21% Pervious Area
	3,821	98	5.79% Impervious Area

Subcatchment 18S: POST BASIN

Hydrograph



Summary for Reach 19R: CB_4

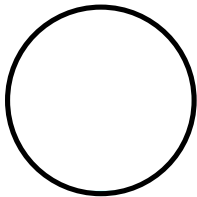
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.609 ac, 0.00% Impervious, Inflow Depth = 0.04" for WQV event
 Inflow = 0.00 cfs @ 13.72 hrs, Volume= 0.002 af
 Outflow = 0.00 cfs @ 13.75 hrs, Volume= 0.002 af, Atten= 0%, Lag= 2.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 0.63 fps, Min. Travel Time= 1.1 min
 Avg. Velocity = 0.53 fps, Avg. Travel Time= 1.3 min

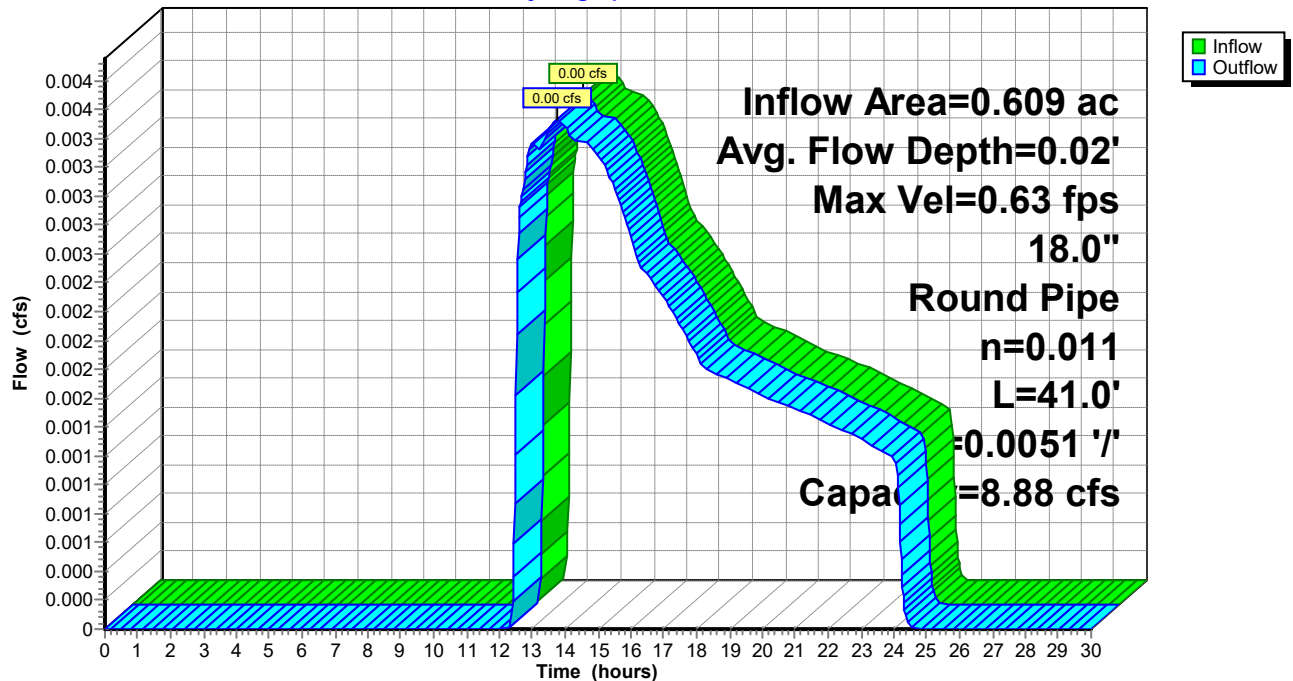
Peak Storage= 0 cf @ 13.74 hrs
 Average Depth at Peak Storage= 0.02'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.88 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 41.0' Slope= 0.0051 '/'
 Inlet Invert= 23.80', Outlet Invert= 23.59'



Reach 19R: CB_4

Hydrograph



Summary for Reach 20R: MH_1

[52] Hint: Inlet/Outlet conditions not evaluated

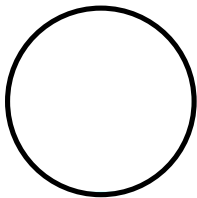
[61] Hint: Exceeded Reach 19R outlet invert by 0.02' @ 13.80 hrs

Inflow Area = 0.609 ac, 0.00% Impervious, Inflow Depth = 0.04" for WQV event
Inflow = 0.00 cfs @ 13.75 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 13.84 hrs, Volume= 0.002 af, Atten= 0%, Lag= 4.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.63 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.53 fps, Avg. Travel Time= 2.9 min

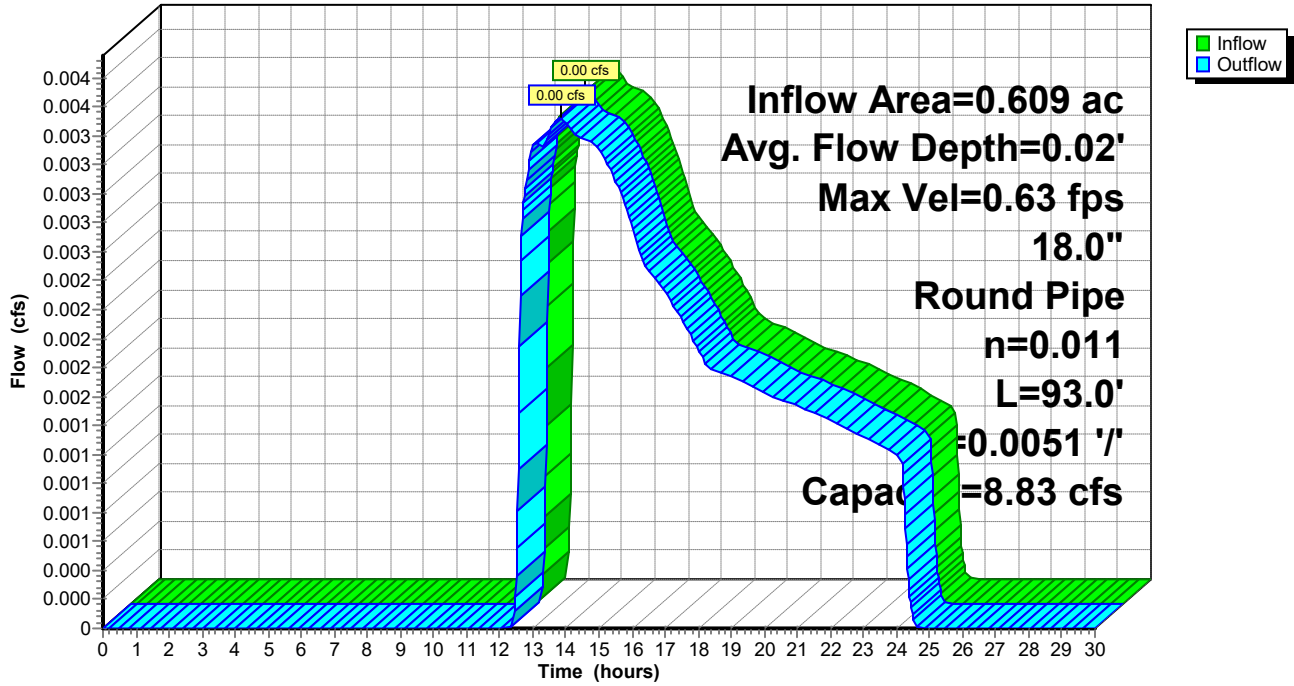
Peak Storage= 1 cf @ 13.80 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.83 cfs

18.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 93.0' Slope= 0.0051 '/'
Inlet Invert= 23.59', Outlet Invert= 23.12'



Reach 20R: MH_1

Hydrograph



Summary for Reach 21R: MH_2

[52] Hint: Inlet/Outlet conditions not evaluated

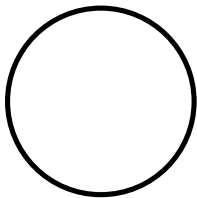
[61] Hint: Exceeded Reach 20R outlet invert by 0.02' @ 13.84 hrs

Inflow Area = 0.609 ac, 0.00% Impervious, Inflow Depth = 0.04" for WQV event
Inflow = 0.00 cfs @ 13.84 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 13.86 hrs, Volume= 0.002 af, Atten= 0%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.63 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 0.52 fps, Avg. Travel Time= 1.1 min

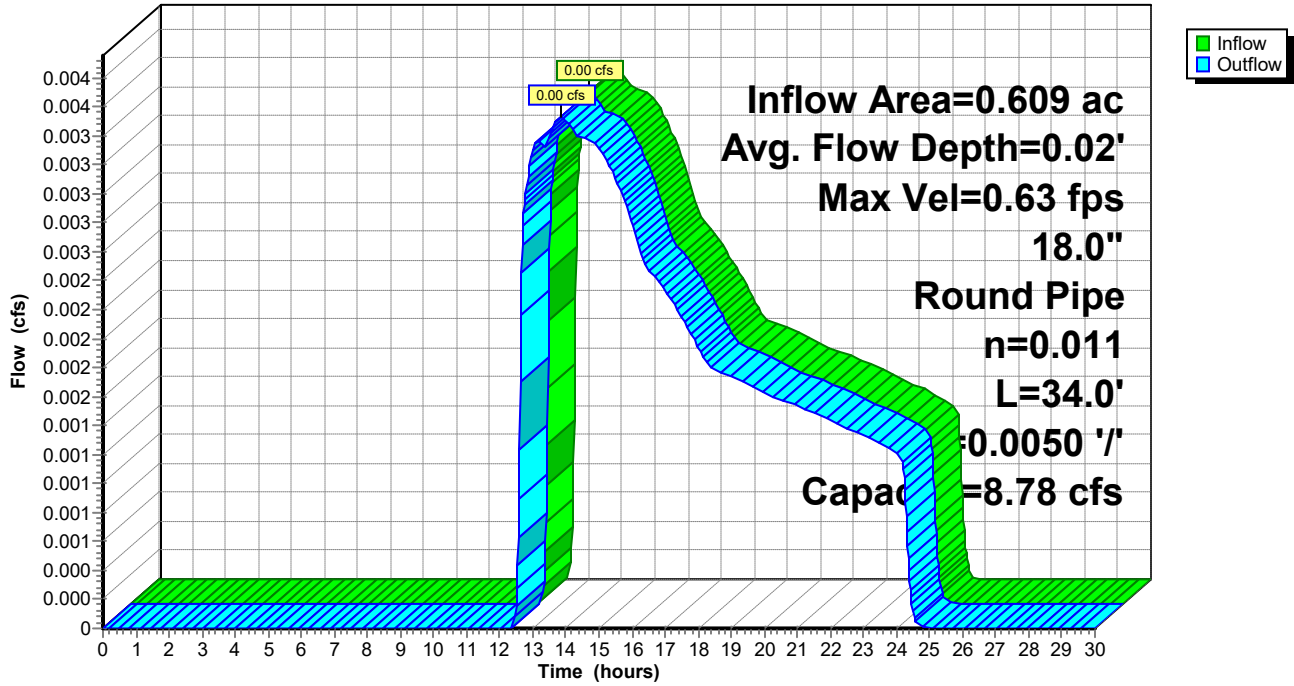
Peak Storage= 0 cf @ 13.85 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.78 cfs

18.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 34.0' Slope= 0.0050 '/'
Inlet Invert= 23.12', Outlet Invert= 22.95'



Reach 21R: MH_2

Hydrograph



Summary for Reach 22R: CB_1

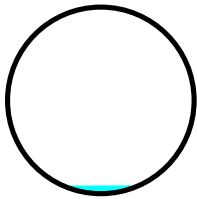
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.887 ac, 0.00% Impervious, Inflow Depth = 0.07" for WQV event
 Inflow = 0.05 cfs @ 12.33 hrs, Volume= 0.012 af
 Outflow = 0.05 cfs @ 12.35 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 1.70 fps, Min. Travel Time= 0.5 min
 Avg. Velocity = 1.07 fps, Avg. Travel Time= 0.8 min

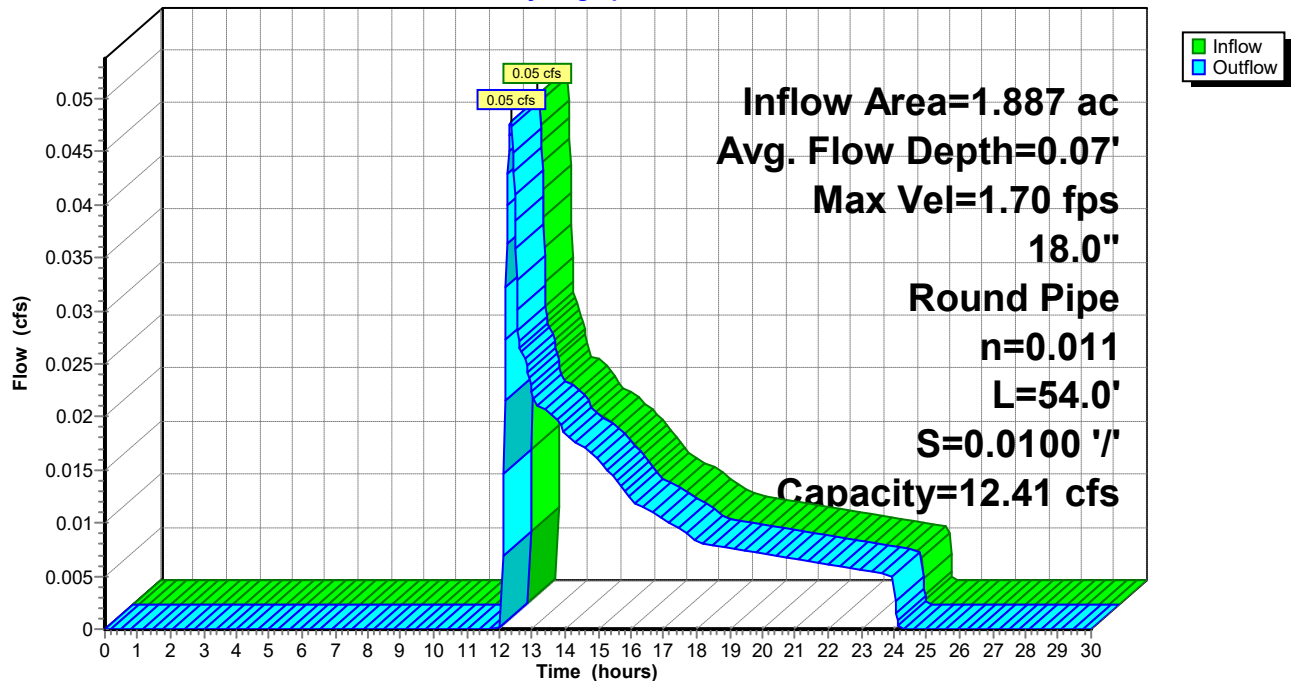
Peak Storage= 2 cf @ 12.34 hrs
 Average Depth at Peak Storage= 0.07'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 54.0' Slope= 0.0100 '/'
 Inlet Invert= 27.89', Outlet Invert= 27.35'



Reach 22R: CB_1

Hydrograph



Summary for Reach 23R: CB_2

[52] Hint: Inlet/Outlet conditions not evaluated

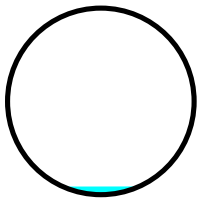
[62] Hint: Exceeded Reach 22R OUTLET depth by 0.01' @ 24.08 hrs

Inflow Area = 1.887 ac, 0.00% Impervious, Inflow Depth = 0.07" for WQV event
Inflow = 0.05 cfs @ 12.35 hrs, Volume= 0.012 af
Outflow = 0.05 cfs @ 12.36 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 1.70 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 0.5 min

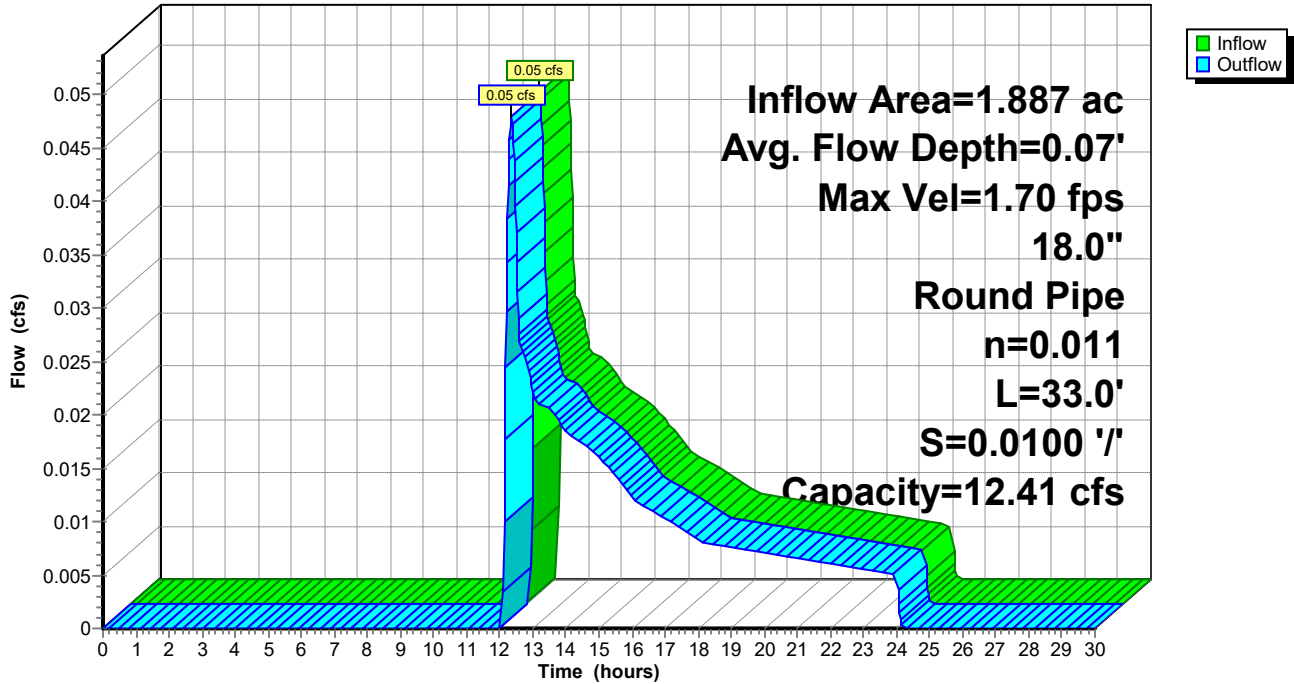
Peak Storage= 1 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 33.0' Slope= 0.0100 '/'
Inlet Invert= 27.35', Outlet Invert= 27.02'



Reach 23R: CB_2

Hydrograph



Summary for Reach 24R: CB_3

[52] Hint: Inlet/Outlet conditions not evaluated

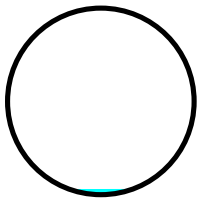
[61] Hint: Exceeded Reach 23R outlet invert by 0.06' @ 12.36 hrs

Inflow Area = 1.887 ac, 0.00% Impervious, Inflow Depth = 0.07" for WQV event
Inflow = 0.05 cfs @ 12.36 hrs, Volume= 0.012 af
Outflow = 0.05 cfs @ 12.38 hrs, Volume= 0.012 af, Atten= 0%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Max. Velocity= 1.63 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.05 fps, Avg. Travel Time= 1.6 min

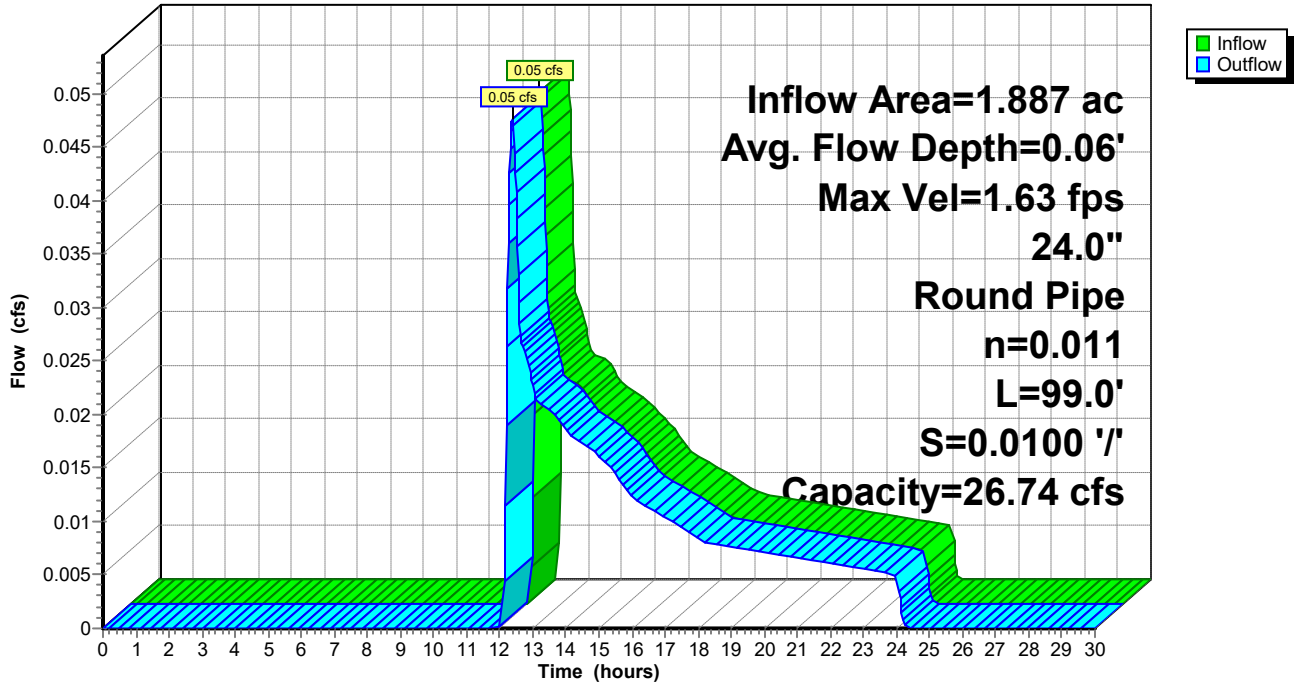
Peak Storage= 3 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 26.74 cfs

24.0" Round Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 99.0' Slope= 0.0100 '/'
Inlet Invert= 27.02', Outlet Invert= 26.03'



Reach 24R: CB_3

Hydrograph



Summary for Reach 25R: SWALE

Inflow Area = 3.024 ac, 33.37% Impervious, Inflow Depth = 0.33" for WQV event
 Inflow = 0.64 cfs @ 12.38 hrs, Volume= 0.083 af
 Outflow = 0.64 cfs @ 12.42 hrs, Volume= 0.083 af, Atten= 0%, Lag= 2.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 2.06 fps, Min. Travel Time= 1.2 min
 Avg. Velocity = 0.75 fps, Avg. Travel Time= 3.2 min

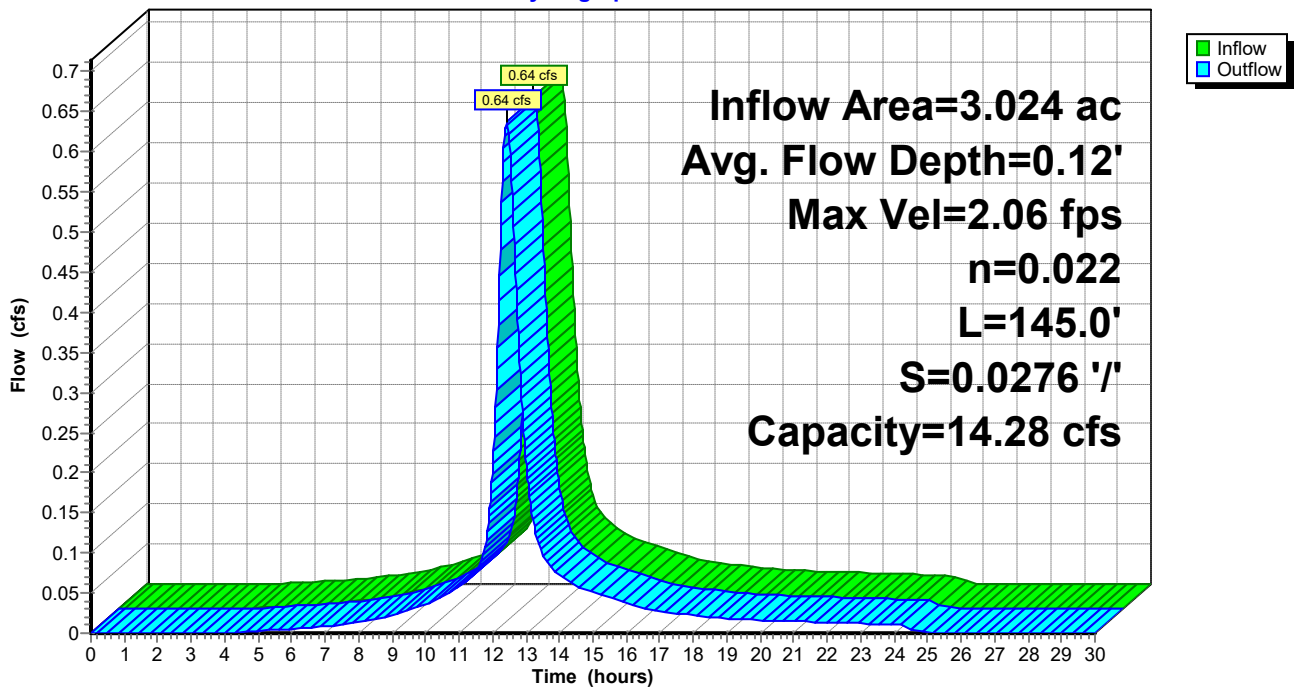
Peak Storage= 45 cf @ 12.40 hrs
 Average Depth at Peak Storage= 0.12'
 Bank-Full Depth= 0.50' Flow Area= 2.7 sf, Capacity= 14.28 cfs

8.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 145.0' Slope= 0.0276 '/'
 Inlet Invert= 34.00', Outlet Invert= 30.00'



Reach 25R: SWALE

Hydrograph



Summary for Pond 16P: INFILTRATION BASIN

Inflow Area = 10.298 ac, 13.78% Impervious, Inflow Depth = 0.16" for WQV event
 Inflow = 0.94 cfs @ 12.37 hrs, Volume= 0.136 af
 Outflow = 0.93 cfs @ 12.41 hrs, Volume= 0.136 af, Atten= 1%, Lag= 2.7 min
 Discarded = 0.93 cfs @ 12.41 hrs, Volume= 0.136 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Peak Elev= 22.01' @ 12.41 hrs Surf.Area= 14,467 sf Storage= 145 cf

Plug-Flow detention time= 2.6 min calculated for 0.135 af (100% of inflow)
 Center-of-Mass det. time= 2.6 min (828.2 - 825.6)

Volume	Invert	Avail.Storage	Storage Description
#1	22.00'	52,283 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

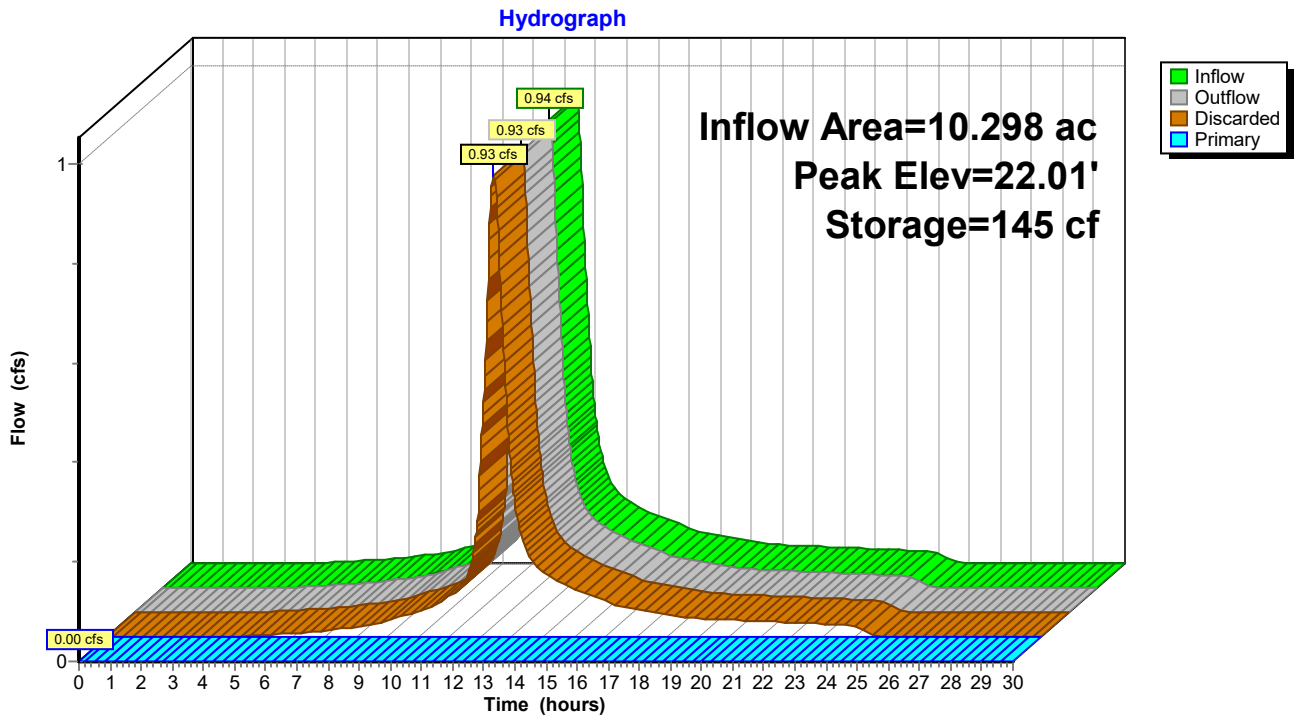
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	14,449	0	0
24.00	18,019	32,468	32,468
25.00	21,610	19,815	52,283

Device	Routing	Invert	Outlet Devices
#1	Discarded	22.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	23.75'	10.0' long x 6.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65
			2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=2.77 cfs @ 12.41 hrs HW=22.01' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 2.77 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=22.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 16P: INFILTRATION BASIN



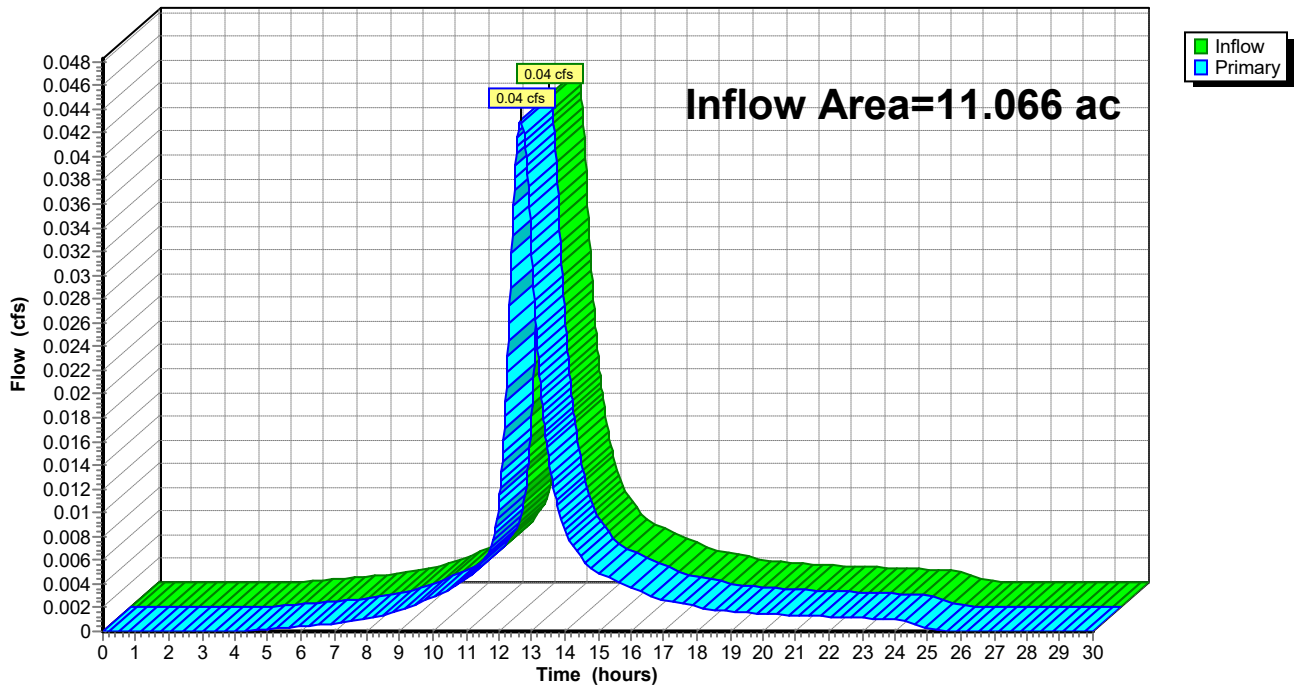
Summary for Link 17L: POST

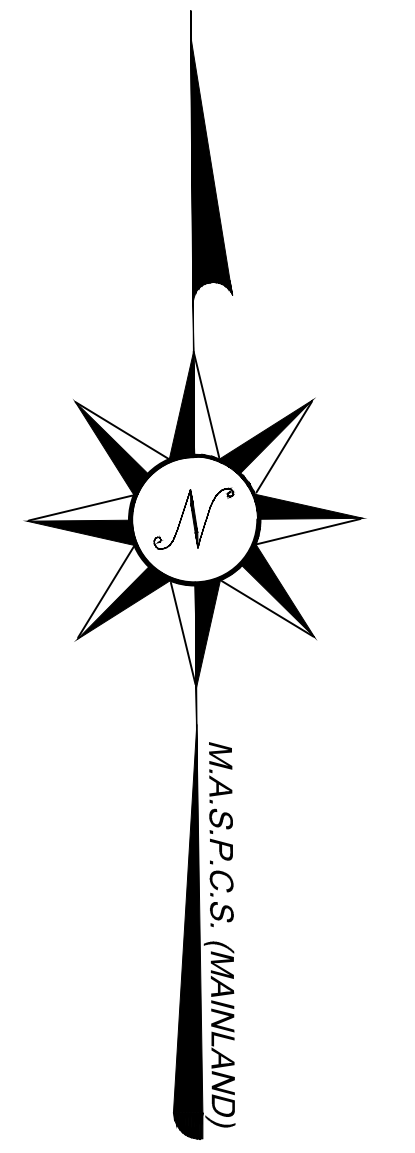
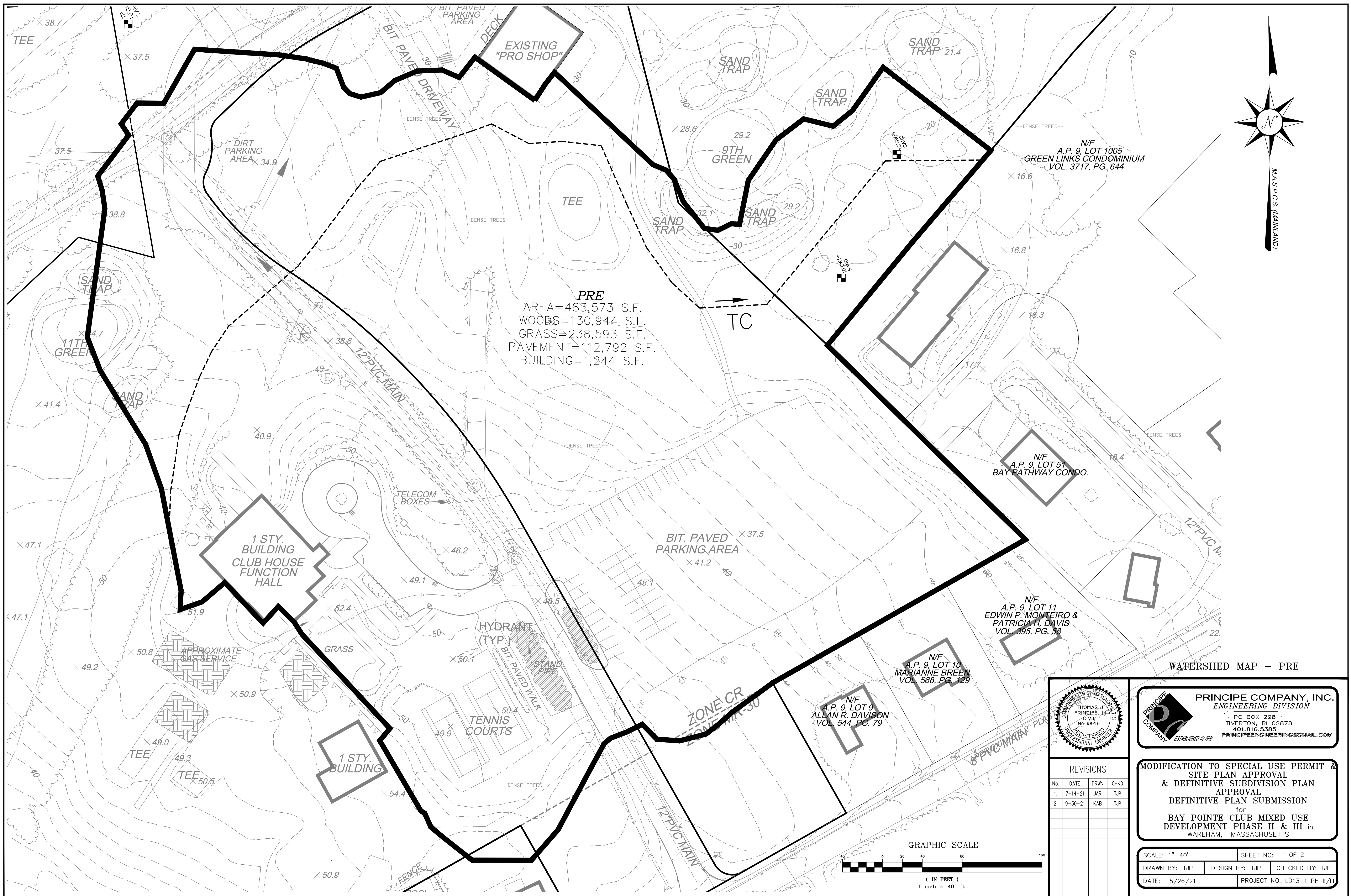
Inflow Area = 11.066 ac, 13.63% Impervious, Inflow Depth = 0.01" for WQV event
Inflow = 0.04 cfs @ 12.65 hrs, Volume= 0.007 af
Primary = 0.04 cfs @ 12.65 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs

Link 17L: POST

Hydrograph





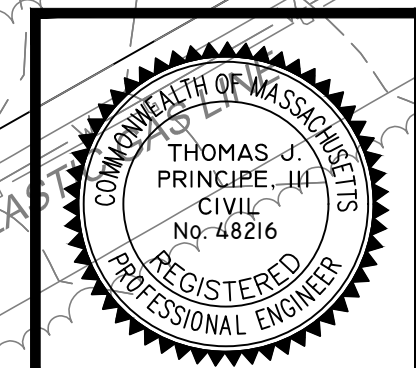
N/F
 A.P. 9, LOT 1005
 GREEN LINKS CONDOMINIUM
 VOL. 3717, PG. 644

N/F
 A.P. 9, LOT 51
 BAY PATHWAY CONDO.

N/F
 A.P. 9, LOT 11
 EDWIN P. MONTEIRO &
 PATRICIA H. DAVIS
 VOL. 395, PG. 38

N/F
 A.P. 9, LOT 10
 MARIANNE BREEN
 VOL. 568, PG. 129

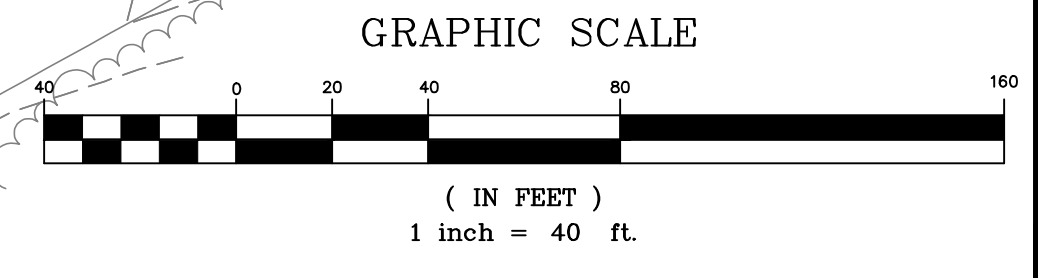
N/F
 A.P. 9, LOT 9
 ALLAN R. DAVISON
 VOL. 544, PG. 79



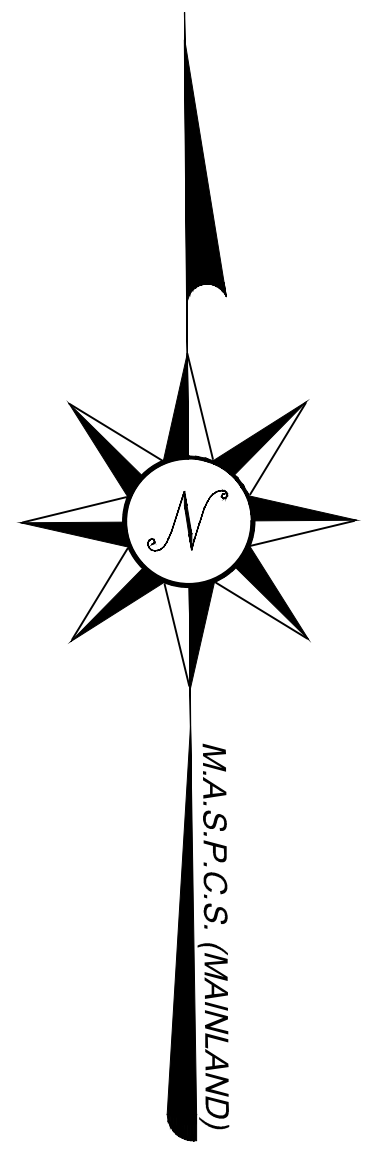
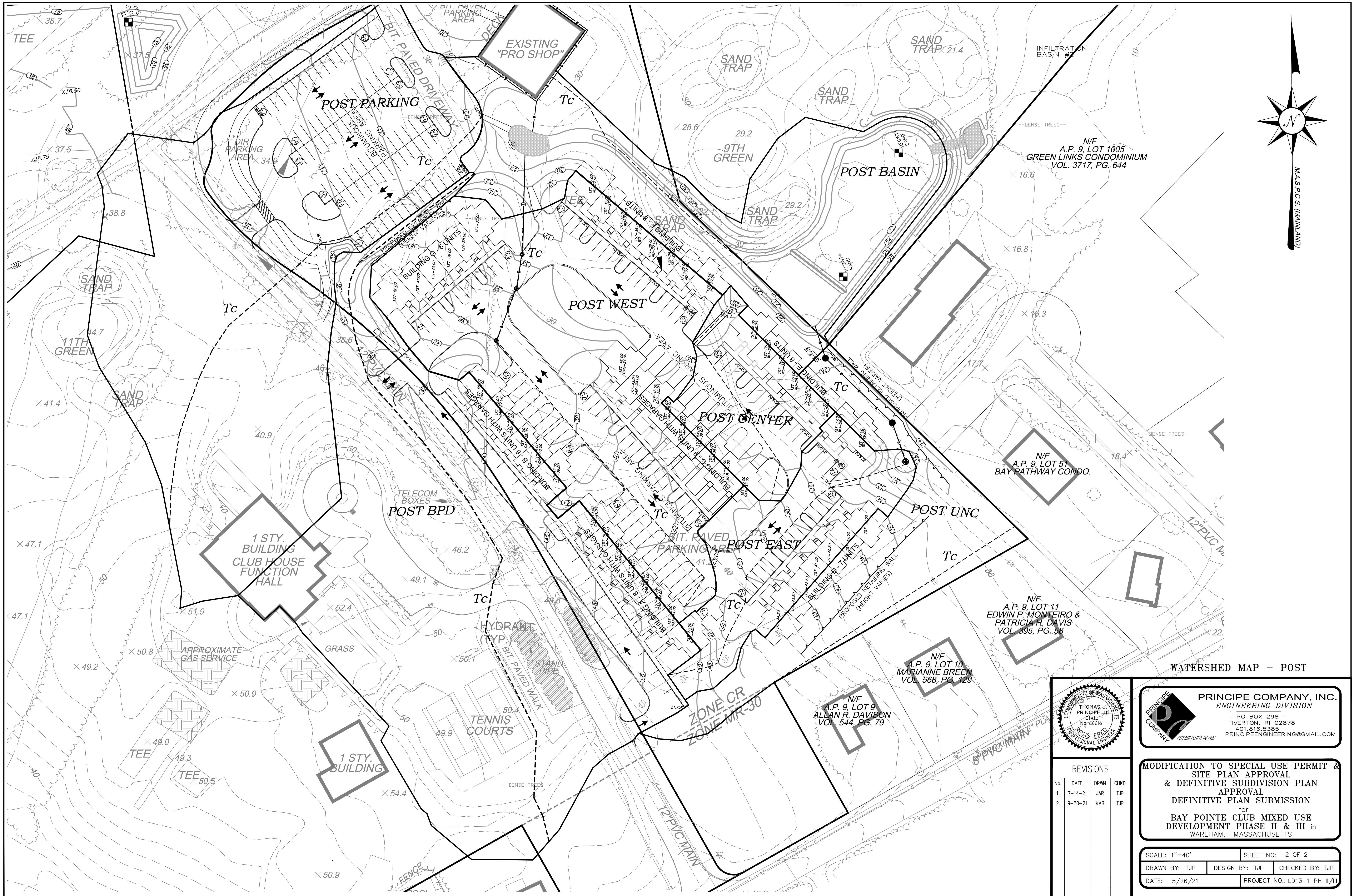
PRINCIPE COMPANY, INC.
 ENGINEERING DIVISION
 PO BOX 298
 TIVERTON, RI 02878
 401.816.5385
 PRINCIPLEENGINEERING@GMAIL.COM

REVISIONS				
No.	DATE	DRWN	CHKD	
1.	7-14-21	JAR	TJP	
2.	9-30-21	KAB	TJP	

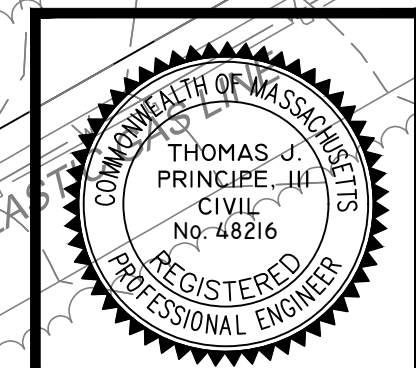
MODIFICATION TO SPECIAL USE PERMIT & SITE PLAN APPROVAL & DEFINITIVE SUBDIVISION PLAN APPROVAL DEFINITIVE PLAN SUBMISSION
 for
BAY POINT CLUB MIXED USE DEVELOPMENT PHASE II & III in
 WAREHAM, MASSACHUSETTS



SCALE: 1"=40' SHEET NO: 1 OF 2
 DRAWN BY: TJP DESIGN BY: TJP CHECKED BY: TJP
 DATE: 5/26/21 PROJECT NO.: LD13-1 PH II/III



WATERSHED MAP - POST



PRINCIPLE COMPANY, INC.
 ENGINEERING DIVISION
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 TIVERTON, RI 02878
 401.816.5385
 PRINCIPLEENGINEERING@GMAIL.COM

REVISIONS				
No.	DATE	DRWN	CHKD	
1.	7-14-21	JAR	TJP	
2.	9-30-21	KAB	TJP	

MODIFICATION TO SPECIAL USE PERMIT & SITE PLAN APPROVAL & DEFINITIVE SUBDIVISION PLAN APPROVAL DEFINITIVE PLAN SUBMISSION
 for
BAY POINT CLUB MIXED USE DEVELOPMENT PHASE II & III in
 WAREHAM, MASSACHUSETTS

SCALE: 1"=40' SHEET NO: 2 OF 2
 DRAWN BY: TJP DESIGN BY: TJP CHECKED BY: TJP
 DATE: 5/26/21 PROJECT NO.: LD13-1 PH II/III

N/F
 A.P. 9, LOT 9
 ALLAN R. DAVISON
 VOL. 544, PG. 79

N/F
 A.P. 9, LOT 10
 MARIANNE BREEN
 VOL. 568, PG. 129

N/F
 A.P. 9, LOT 11
 EDWIN P. MONTEIRO &
 PATRICIA H. DAVIS
 VOL. 395, PG. 38

N/F
 A.P. 9, LOT 51
 BAY PATHWAY CONDO.

N/F
 A.P. 9, LOT 1005
 GREEN LINKS CONDOMINIUM
 VOL. 3717, PG. 644