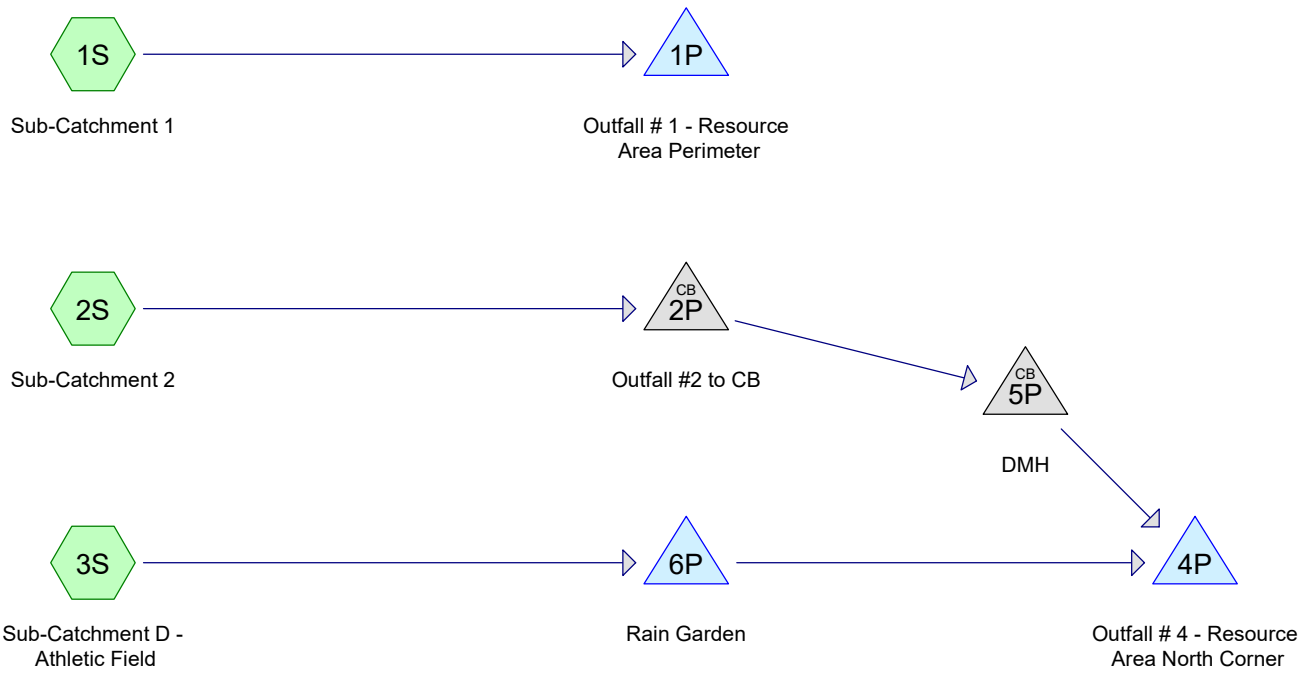


Subcat Reach Pond Link

Routing Diagram for Post Development Analysis - MS 11-2-25

Prepared by {enter your company name here}, Printed 11/2/2025

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.244	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S)
0.282	98	Paved parking, HSG D (3S)
2.456	98	Synthetic Turf (3S)
0.310	98	Unconnected pavement, HSG D (2S)
4.292	**93**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
1.836	HSG D	1S, 2S, 3S
2.456	Other	3S
4.292		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	1.244	0.000	1.244	>75% Grass cover, Good	1S, 2S, 3S
0.000	0.000	0.000	0.282	0.000	0.282	Paved parking	3S
0.000	0.000	0.000	0.000	2.456	2.456	Synthetic Turf	3S
0.000	0.000	0.000	0.310	0.000	0.310	Unconnected pavement	2S
0.000	**0.000**	**0.000**	**1.836**	**2.456**	**4.292**	**TOTAL AREA**	

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	2P	134.36	132.70	215.0	0.0077	0.011	12.0	0.0	0.0
2	5P	129.50	127.39	430.0	0.0049	0.011	21.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Sub-Catchment 1 Runoff Area=0.647 ac 0.00% Impervious Runoff Depth=1.57"
Flow Length=77' Slope=0.0520 '/' Tc=5.5 min CN=80 Runoff=1.21 cfs 0.085 af

Subcatchment 2S: Sub-Catchment 2 Runoff Area=0.439 ac 70.62% Impervious Runoff Depth=2.66"
Flow Length=153' Tc=0.7 min CN=93 Runoff=1.59 cfs 0.097 af

Subcatchment 3S: Sub-Catchment D - Runoff Area=3.206 ac 85.40% Impervious Runoff Depth>2.86"
Tc=480.0 min CN=95 Runoff=0.97 cfs 0.764 af

Pond 1P: Outfall # 1 - Resource Area Perimeter Inflow=1.21 cfs 0.085 af
Primary=1.21 cfs 0.085 af

Pond 2P: Outfall #2 to CB Peak Elev=134.99' Inflow=1.59 cfs 0.097 af
12.0" Round Culvert n=0.011 L=215.0' S=0.0077 '/' Outflow=1.59 cfs 0.097 af

Pond 4P: Outfall # 4 - Resource Area North Corner Inflow=1.59 cfs 0.846 af
Primary=1.59 cfs 0.846 af

Pond 5P: DMH Peak Elev=130.06' Inflow=1.59 cfs 0.097 af
21.0" Round Culvert n=0.011 L=430.0' S=0.0049 '/' Outflow=1.59 cfs 0.097 af

Pond 6P: Rain Garden Peak Elev=134.11' Storage=893 cf Inflow=0.97 cfs 0.764 af
Outflow=0.97 cfs 0.749 af

Total Runoff Area = 4.292 ac Runoff Volume = 0.946 af Average Runoff Depth = 2.65"
28.98% Pervious = 1.244 ac 71.02% Impervious = 3.048 ac

Summary for Subcatchment 1S: Sub-Catchment 1

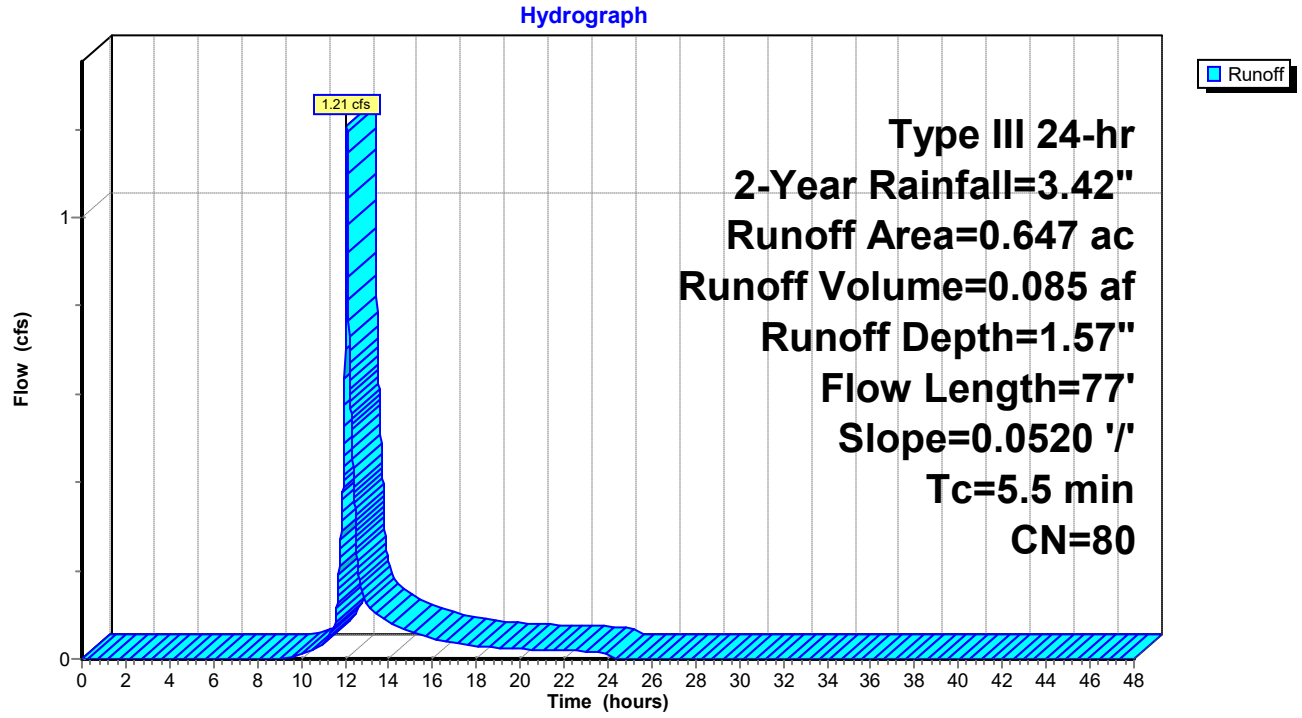
Runoff = 1.21 cfs @ 12.08 hrs, Volume= 0.085 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.42"

Area (ac)	CN	Description
0.647	80	>75% Grass cover, Good, HSG D
0.647		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	77	0.0520	0.23		**Sheet Flow, Grass Area** Grass: Short n= 0.150 P2= 3.10"

Subcatchment 1S: Sub-Catchment 1



Summary for Subcatchment 2S: Sub-Catchment 2

[49] Hint: Tc<2dt may require smaller dt

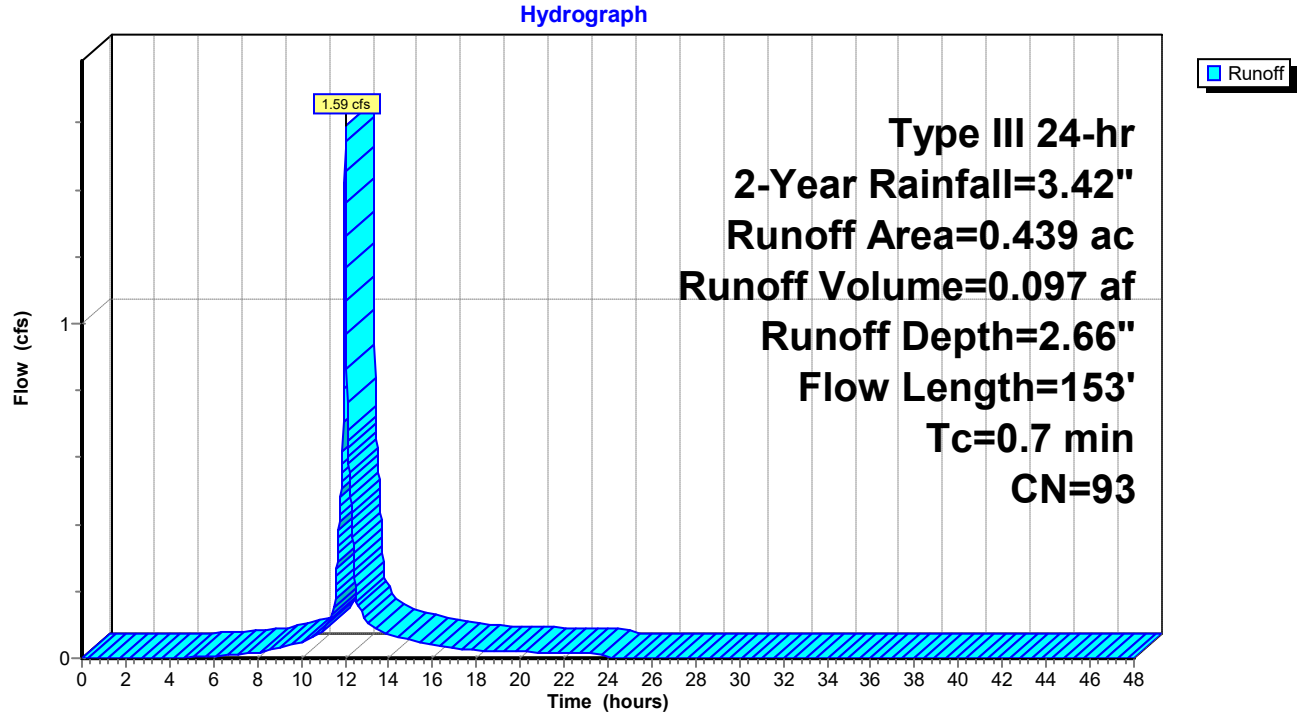
Runoff = 1.59 cfs @ 12.01 hrs, Volume= 0.097 af, Depth= 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.42"

Area (ac)	CN	Description
0.310	98	Unconnected pavement, HSG D
0.129	80	>75% Grass cover, Good, HSG D
0.439	93	Weighted Average
0.129		29.38% Pervious Area
0.310		70.62% Impervious Area
0.310		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	50	0.0800	2.05		**Sheet Flow, Grass Hill** Smooth surfaces n= 0.011 P2= 3.10"
0.3	103	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	153	Total			

Subcatchment 2S: Sub-Catchment 2



Summary for Subcatchment 3S: Sub-Catchment D - Athletic Field

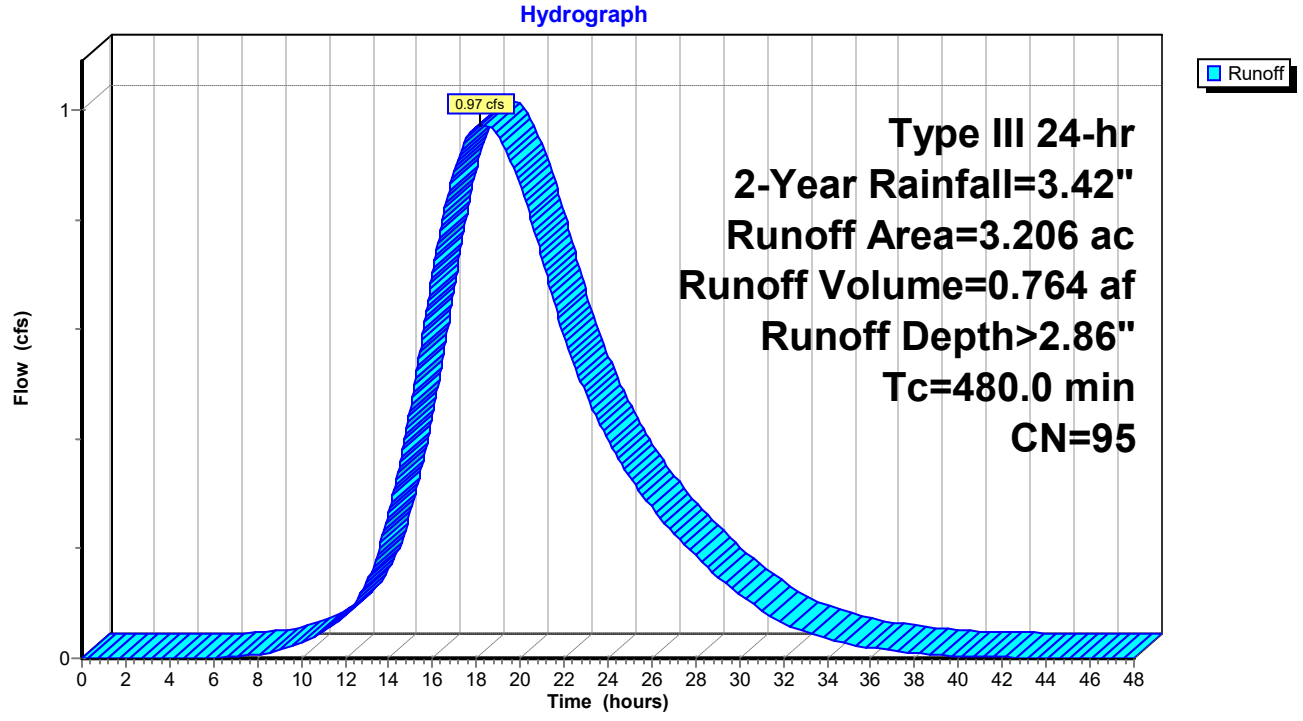
Runoff = 0.97 cfs @ 18.14 hrs, Volume= 0.764 af, Depth> 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.42"

	Area (ac)	CN	Description
	0.282	98	Paved parking, HSG D
*	2.456	98	Synthetic Turf
	0.468	80	>75% Grass cover, Good, HSG D
	3.206	95	Weighted Average
	0.468		14.60% Pervious Area
	2.738		85.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
480.0					**Direct Entry, Turf Field Base Stone**

Subcatchment 3S: Sub-Catchment D - Athletic Field



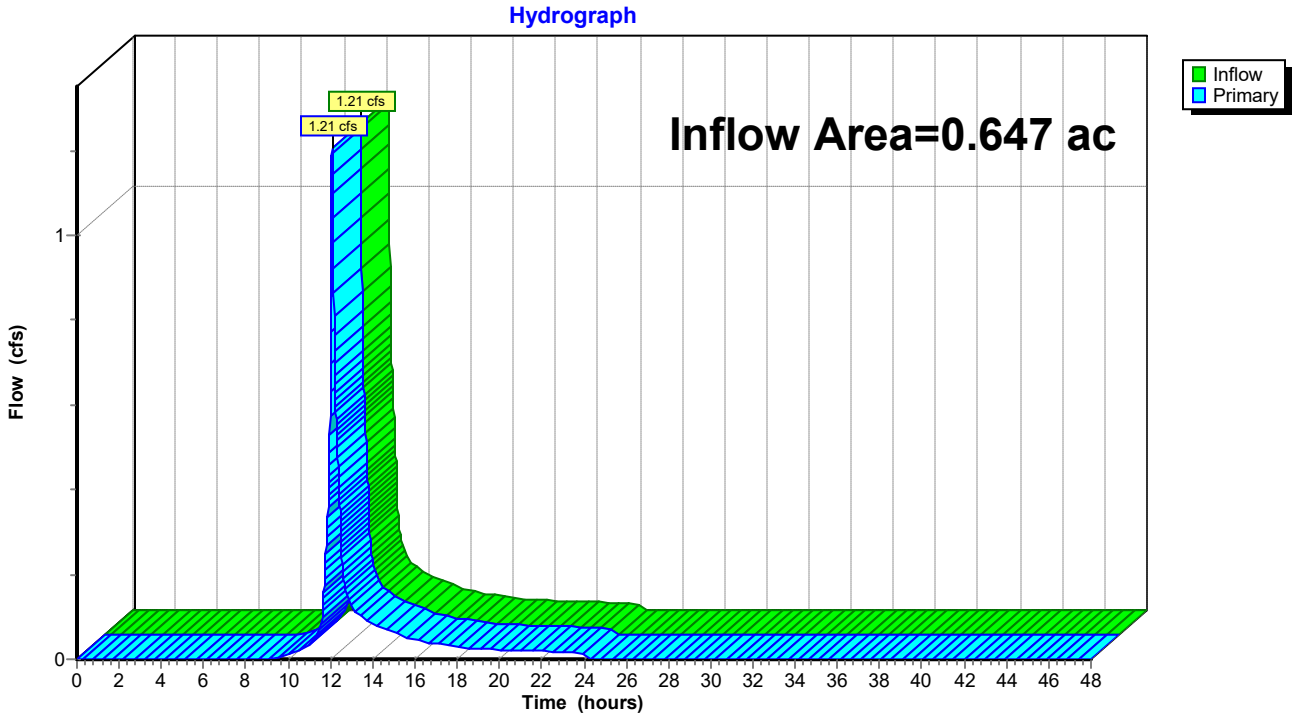
Summary for Pond 1P: Outfall # 1 - Resource Area Perimeter

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.647 ac, 0.00% Impervious, Inflow Depth = 1.57" for 2-Year event
Inflow = 1.21 cfs @ 12.08 hrs, Volume= 0.085 af
Primary = 1.21 cfs @ 12.08 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond 1P: Outfall # 1 - Resource Area Perimeter



Summary for Pond 2P: Outfall #2 to CB

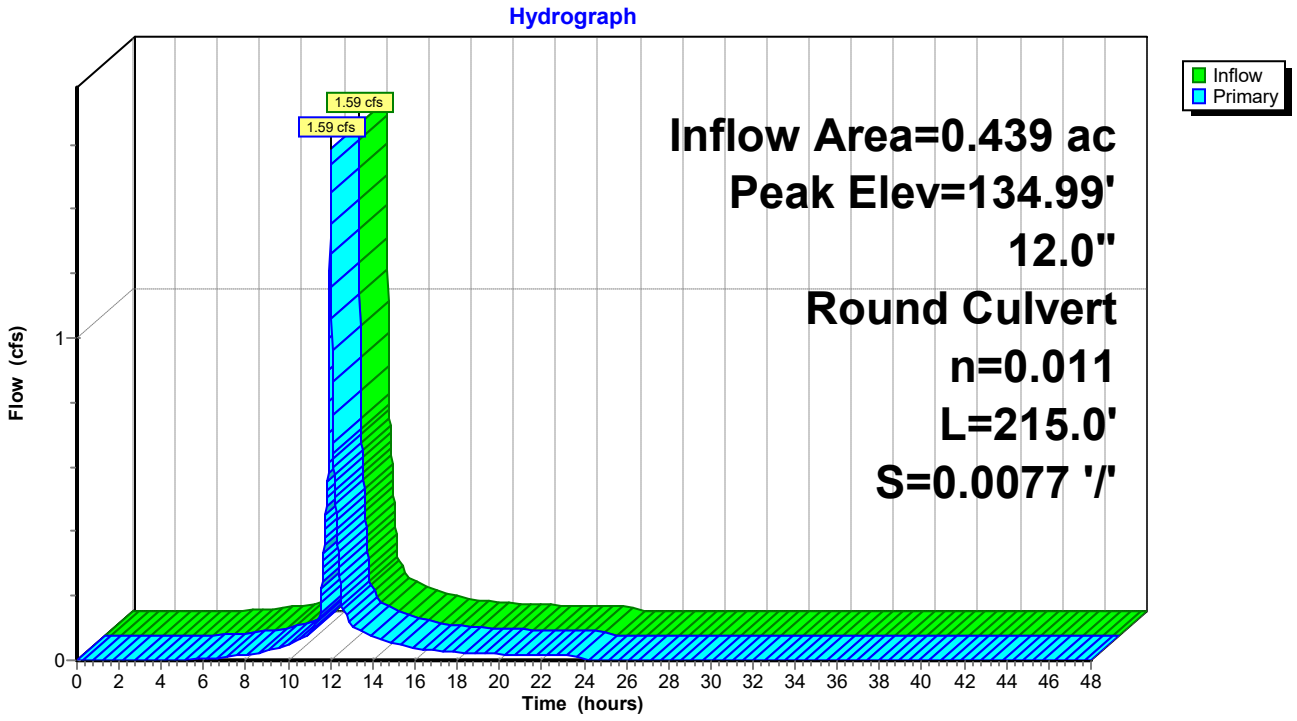
Inflow Area = 0.439 ac, 70.62% Impervious, Inflow Depth = 2.66" for 2-Year event
Inflow = 1.59 cfs @ 12.01 hrs, Volume= 0.097 af
Outflow = 1.59 cfs @ 12.01 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min
Primary = 1.59 cfs @ 12.01 hrs, Volume= 0.097 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 134.99' @ 12.01 hrs
Flood Elev= 138.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	134.36'	**12.0" Round Culvert** L= 215.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 134.36' / 132.70' S= 0.0077 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=1.59 cfs @ 12.01 hrs HW=134.99' (Free Discharge)
1=Culvert (Barrel Controls 1.59 cfs @ 4.32 fps)

Pond 2P: Outfall #2 to CB



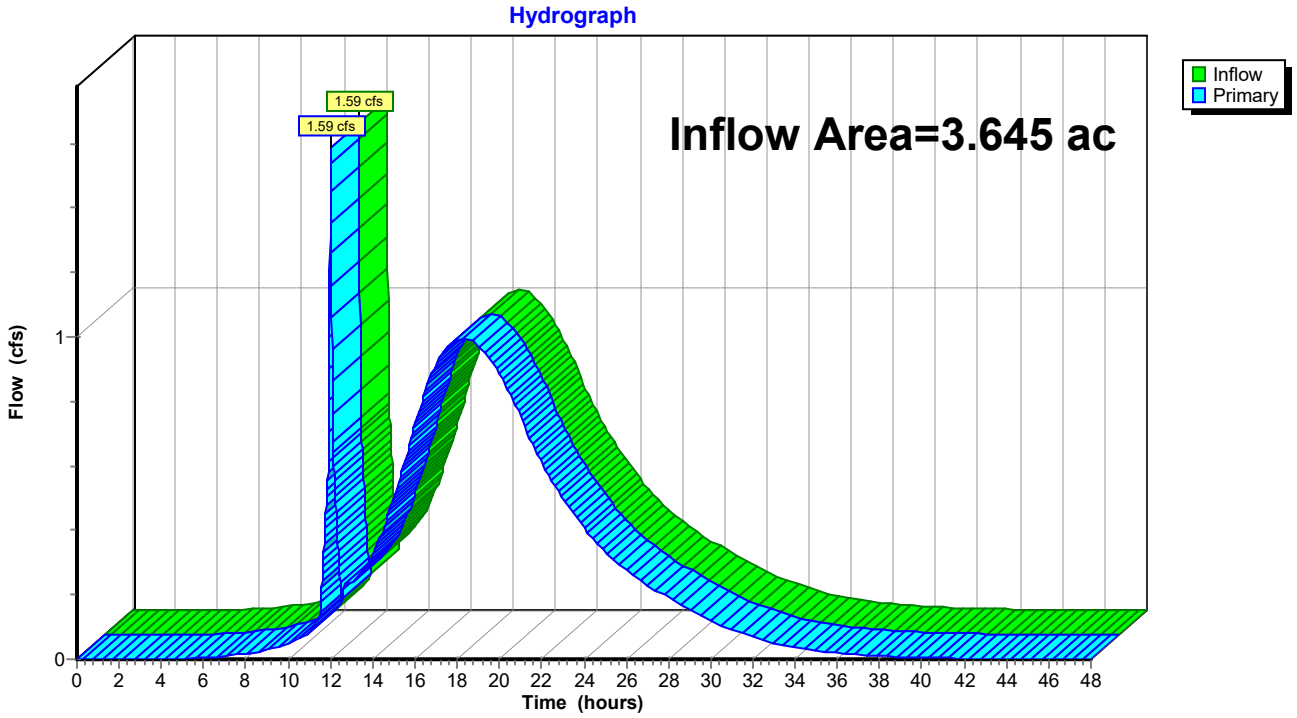
Summary for Pond 4P: Outfall # 4 - Resource Area North Corner

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.645 ac, 83.62% Impervious, Inflow Depth > 2.79" for 2-Year event
Inflow = 1.59 cfs @ 12.01 hrs, Volume= 0.846 af
Primary = 1.59 cfs @ 12.01 hrs, Volume= 0.846 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond 4P: Outfall # 4 - Resource Area North Corner



Summary for Pond 5P: DMH

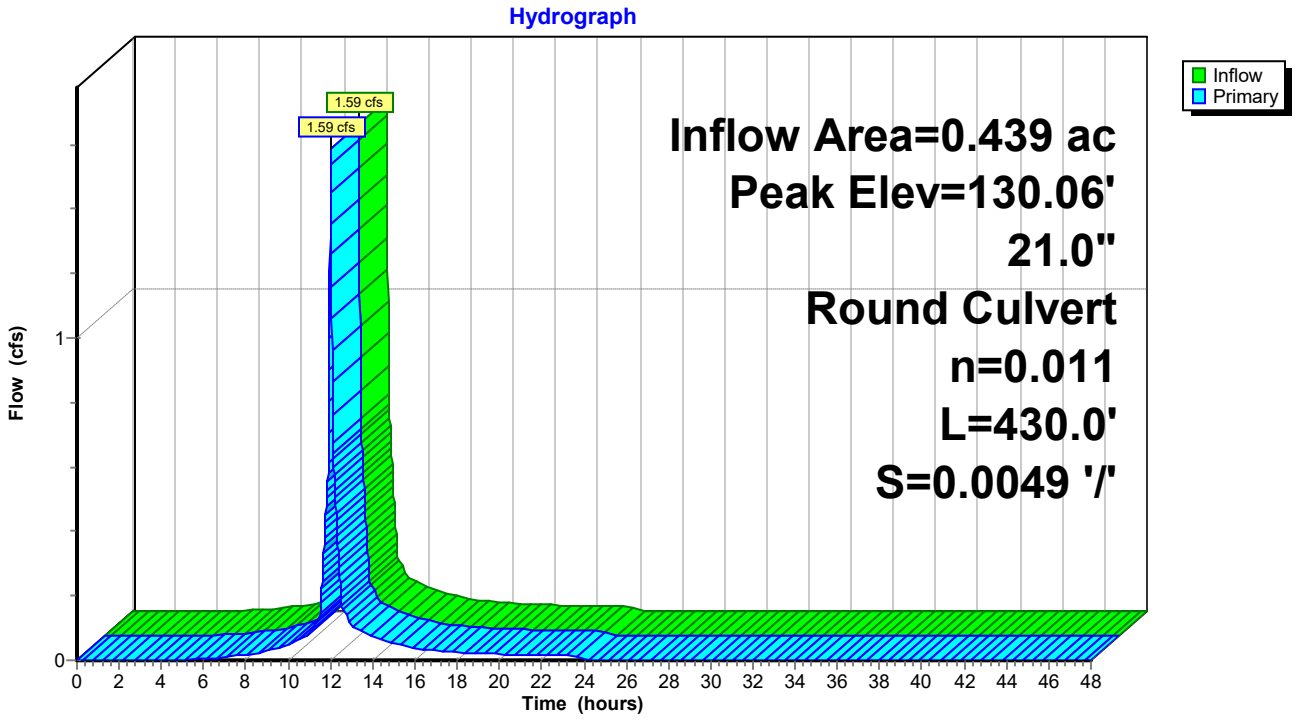
Inflow Area = 0.439 ac, 70.62% Impervious, Inflow Depth = 2.66" for 2-Year event
Inflow = 1.59 cfs @ 12.01 hrs, Volume= 0.097 af
Outflow = 1.59 cfs @ 12.01 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min
Primary = 1.59 cfs @ 12.01 hrs, Volume= 0.097 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 130.06' @ 12.01 hrs
Flood Elev= 138.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	129.50'	**21.0" Round Culvert** L= 430.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 129.50' / 127.39' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 2.41 sf

Primary OutFlow Max=1.58 cfs @ 12.01 hrs HW=130.05' (Free Discharge)
1=Culvert (Barrel Controls 1.58 cfs @ 3.61 fps)

Pond 5P: DMH



Summary for Pond 6P: Rain Garden

Inflow Area = 3.206 ac, 85.40% Impervious, Inflow Depth > 2.86" for 2-Year event
Inflow = 0.97 cfs @ 18.14 hrs, Volume= 0.764 af
Outflow = 0.97 cfs @ 18.32 hrs, Volume= 0.749 af, Atten= 0%, Lag= 11.0 min
Primary = 0.97 cfs @ 18.32 hrs, Volume= 0.749 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 134.11' @ 18.32 hrs Surf.Area= 2,211 sf Storage= 893 cf

Plug-Flow detention time= 34.1 min calculated for 0.749 af (98% of inflow)
Center-of-Mass det. time= 16.4 min (1,238.1 - 1,221.7)

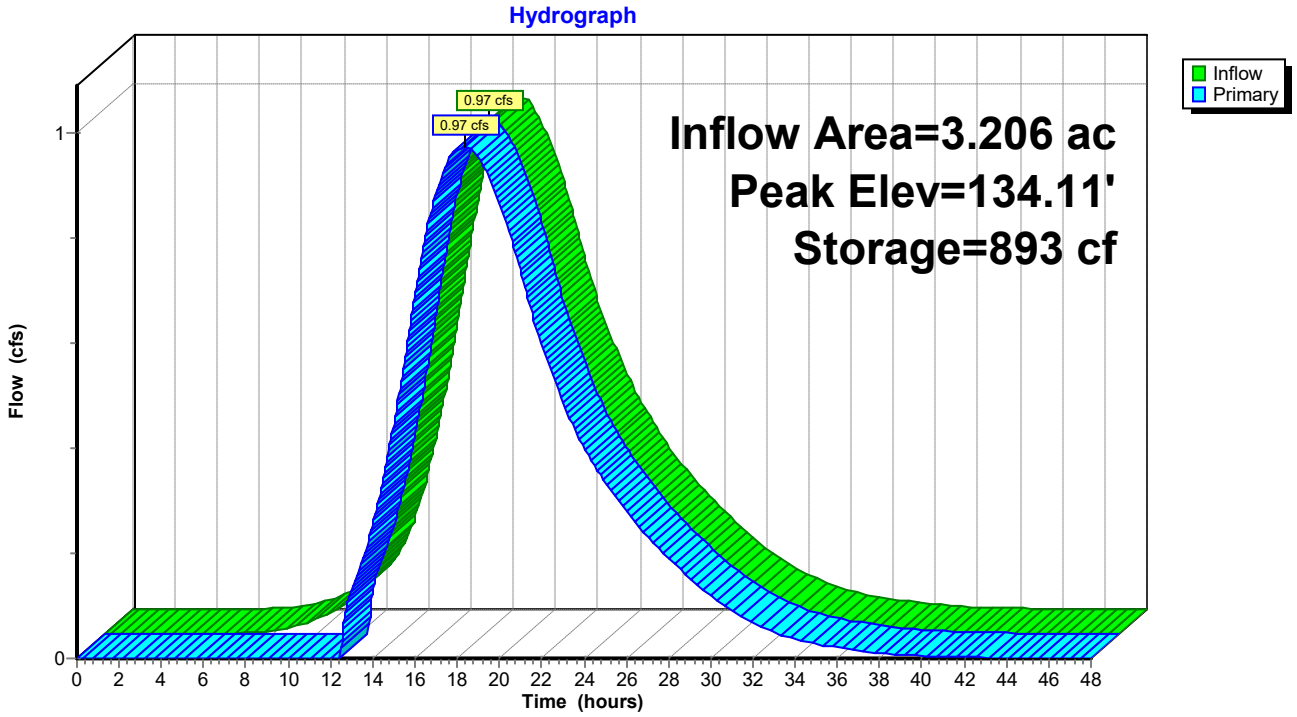
Volume	Invert	Avail.Storage	Storage Description
#1	133.50'	3,487 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.50	587	0	0
134.00	2,030	654	654
135.00	3,635	2,833	3,487

Device	Routing	Invert	Outlet Devices
#1	Primary	134.00'	**30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.97 cfs @ 18.32 hrs HW=134.11' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 0.97 cfs @ 1.10 fps)

Pond 6P: Rain Garden



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Sub-Catchment 1 Runoff Area=0.647 ac 0.00% Impervious Runoff Depth=2.97"
Flow Length=77' Slope=0.0520 '/' Tc=5.5 min CN=80 Runoff=2.29 cfs 0.160 af

Subcatchment 2S: Sub-Catchment 2 Runoff Area=0.439 ac 70.62% Impervious Runoff Depth=4.29"
Flow Length=153' Tc=0.7 min CN=93 Runoff=2.50 cfs 0.157 af

Subcatchment 3S: Sub-Catchment D - Runoff Area=3.206 ac 85.40% Impervious Runoff Depth>4.51"
Tc=480.0 min CN=95 Runoff=1.52 cfs 1.205 af

Pond 1P: Outfall # 1 - Resource Area Perimeter Inflow=2.29 cfs 0.160 af
Primary=2.29 cfs 0.160 af

Pond 2P: Outfall #2 to CB Peak Elev=135.20' Inflow=2.50 cfs 0.157 af
12.0" Round Culvert n=0.011 L=215.0' S=0.0077 '/' Outflow=2.50 cfs 0.157 af

Pond 4P: Outfall # 4 - Resource Area North Corner Inflow=2.65 cfs 1.346 af
Primary=2.65 cfs 1.346 af

Pond 5P: DMH Peak Elev=130.20' Inflow=2.50 cfs 0.157 af
21.0" Round Culvert n=0.011 L=430.0' S=0.0049 '/' Outflow=2.50 cfs 0.157 af

Pond 6P: Rain Garden Peak Elev=134.15' Storage=981 cf Inflow=1.52 cfs 1.205 af
Outflow=1.52 cfs 1.190 af

Total Runoff Area = 4.292 ac Runoff Volume = 1.522 af Average Runoff Depth = 4.25"
28.98% Pervious = 1.244 ac 71.02% Impervious = 3.048 ac

Summary for Subcatchment 1S: Sub-Catchment 1

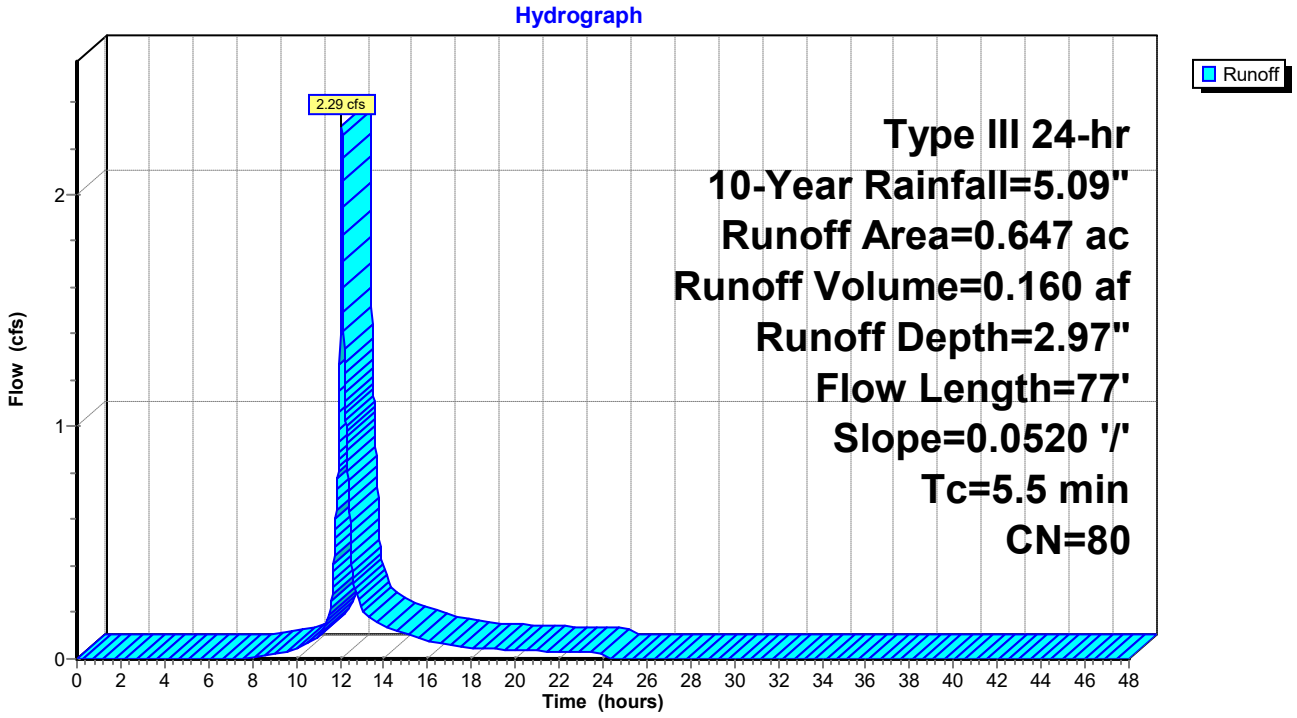
Runoff = 2.29 cfs @ 12.08 hrs, Volume= 0.160 af, Depth= 2.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.09"

Area (ac)	CN	Description
0.647	80	>75% Grass cover, Good, HSG D
0.647		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	77	0.0520	0.23		**Sheet Flow, Grass Area** Grass: Short n= 0.150 P2= 3.10"

Subcatchment 1S: Sub-Catchment 1



Summary for Subcatchment 2S: Sub-Catchment 2

[49] Hint: Tc<2dt may require smaller dt

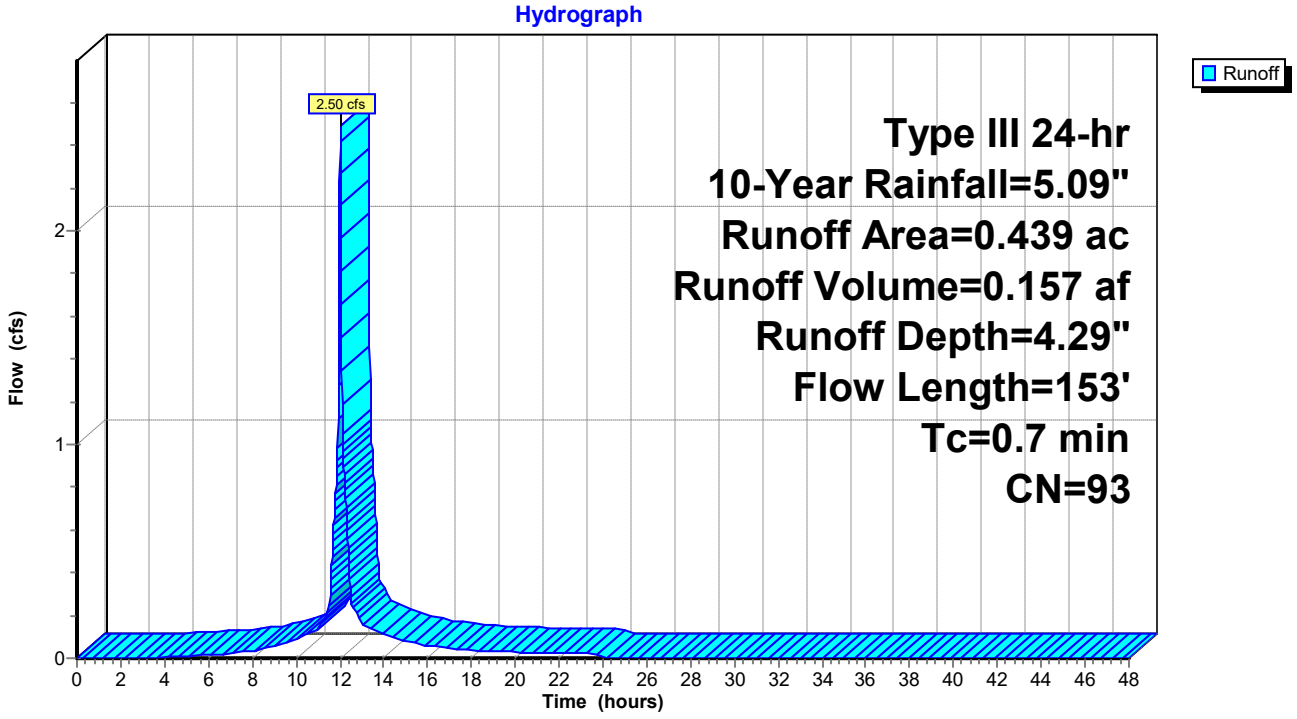
Runoff = 2.50 cfs @ 12.01 hrs, Volume= 0.157 af, Depth= 4.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.09"

Area (ac)	CN	Description
0.310	98	Unconnected pavement, HSG D
0.129	80	>75% Grass cover, Good, HSG D
0.439	93	Weighted Average
0.129		29.38% Pervious Area
0.310		70.62% Impervious Area
0.310		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	50	0.0800	2.05		**Sheet Flow, Grass Hill** Smooth surfaces n= 0.011 P2= 3.10"
0.3	103	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	153	Total			

Subcatchment 2S: Sub-Catchment 2



Summary for Subcatchment 3S: Sub-Catchment D - Athletic Field

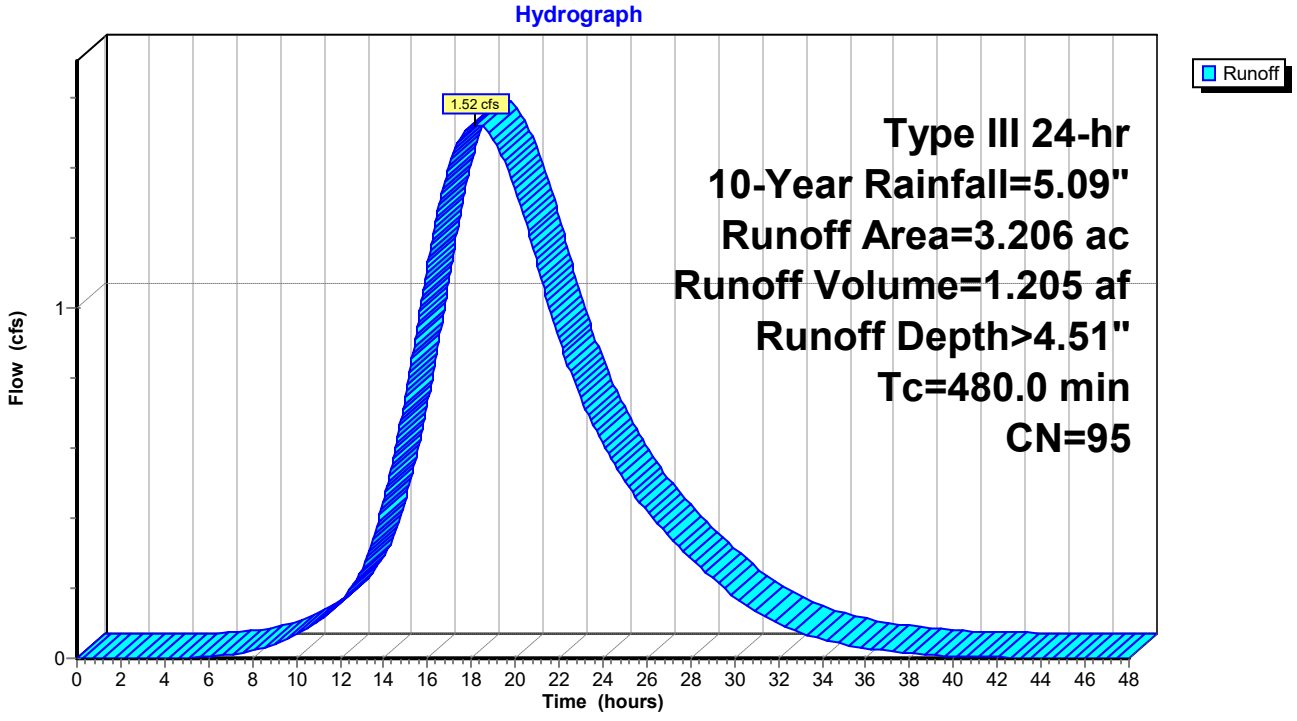
Runoff = 1.52 cfs @ 18.14 hrs, Volume= 1.205 af, Depth> 4.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.09"

	Area (ac)	CN	Description
	0.282	98	Paved parking, HSG D
*	2.456	98	Synthetic Turf
	0.468	80	>75% Grass cover, Good, HSG D
	3.206	95	Weighted Average
	0.468		14.60% Pervious Area
	2.738		85.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
480.0					**Direct Entry, Turf Field Base Stone**

Subcatchment 3S: Sub-Catchment D - Athletic Field



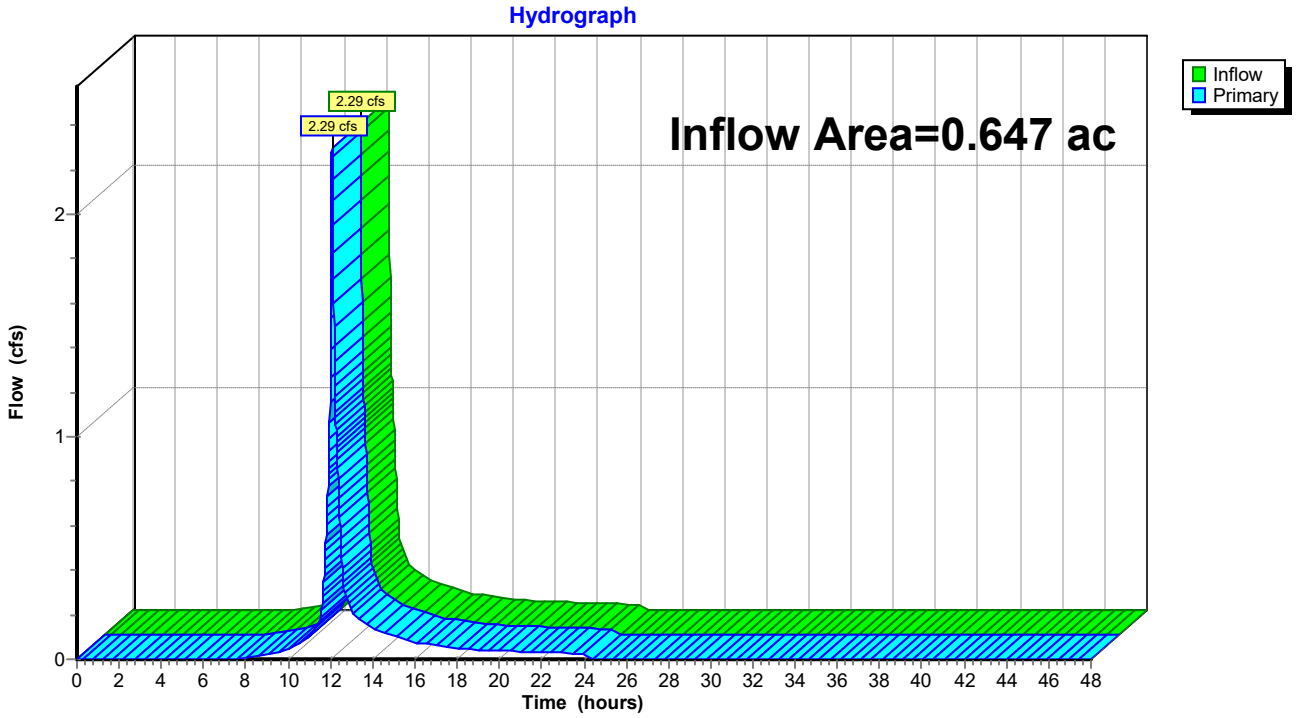
Summary for Pond 1P: Outfall # 1 - Resource Area Perimeter

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.647 ac, 0.00% Impervious, Inflow Depth = 2.97" for 10-Year event
Inflow = 2.29 cfs @ 12.08 hrs, Volume= 0.160 af
Primary = 2.29 cfs @ 12.08 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond 1P: Outfall # 1 - Resource Area Perimeter



Summary for Pond 2P: Outfall #2 to CB

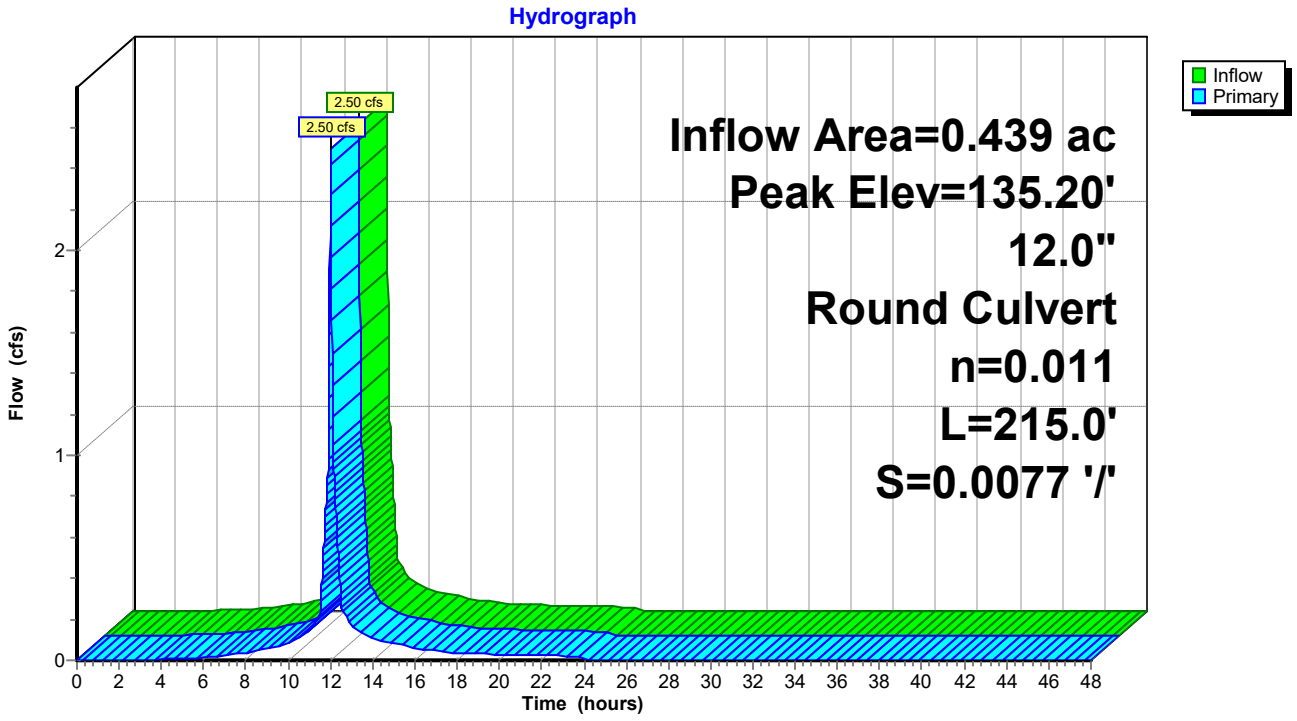
Inflow Area = 0.439 ac, 70.62% Impervious, Inflow Depth = 4.29" for 10-Year event
Inflow = 2.50 cfs @ 12.01 hrs, Volume= 0.157 af
Outflow = 2.50 cfs @ 12.01 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min
Primary = 2.50 cfs @ 12.01 hrs, Volume= 0.157 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 135.20' @ 12.01 hrs
Flood Elev= 138.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	134.36'	**12.0" Round Culvert** L= 215.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 134.36' / 132.70' S= 0.0077 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=2.49 cfs @ 12.01 hrs HW=135.20' (Free Discharge)
1=Culvert (Barrel Controls 2.49 cfs @ 4.78 fps)

Pond 2P: Outfall #2 to CB



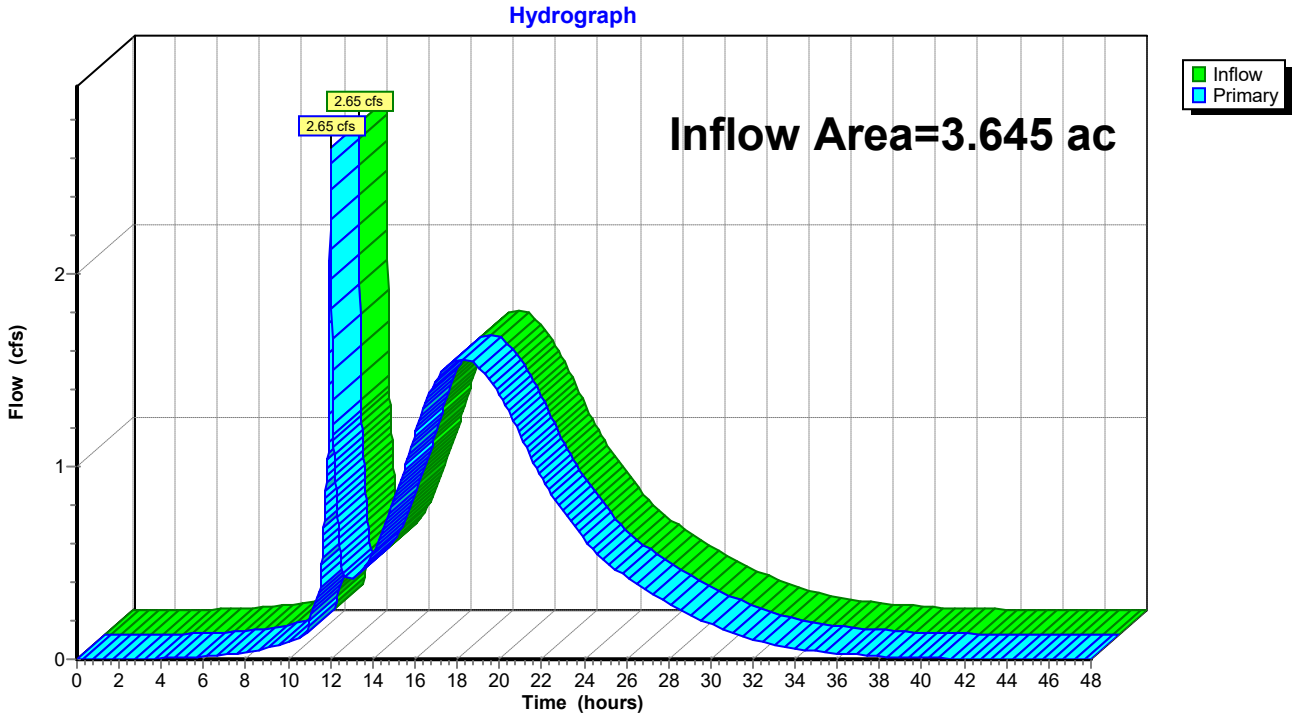
Summary for Pond 4P: Outfall # 4 - Resource Area North Corner

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.645 ac, 83.62% Impervious, Inflow Depth = 4.43" for 10-Year event
Inflow = 2.65 cfs @ 12.01 hrs, Volume= 1.346 af
Primary = 2.65 cfs @ 12.01 hrs, Volume= 1.346 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond 4P: Outfall # 4 - Resource Area North Corner



Summary for Pond 5P: DMH

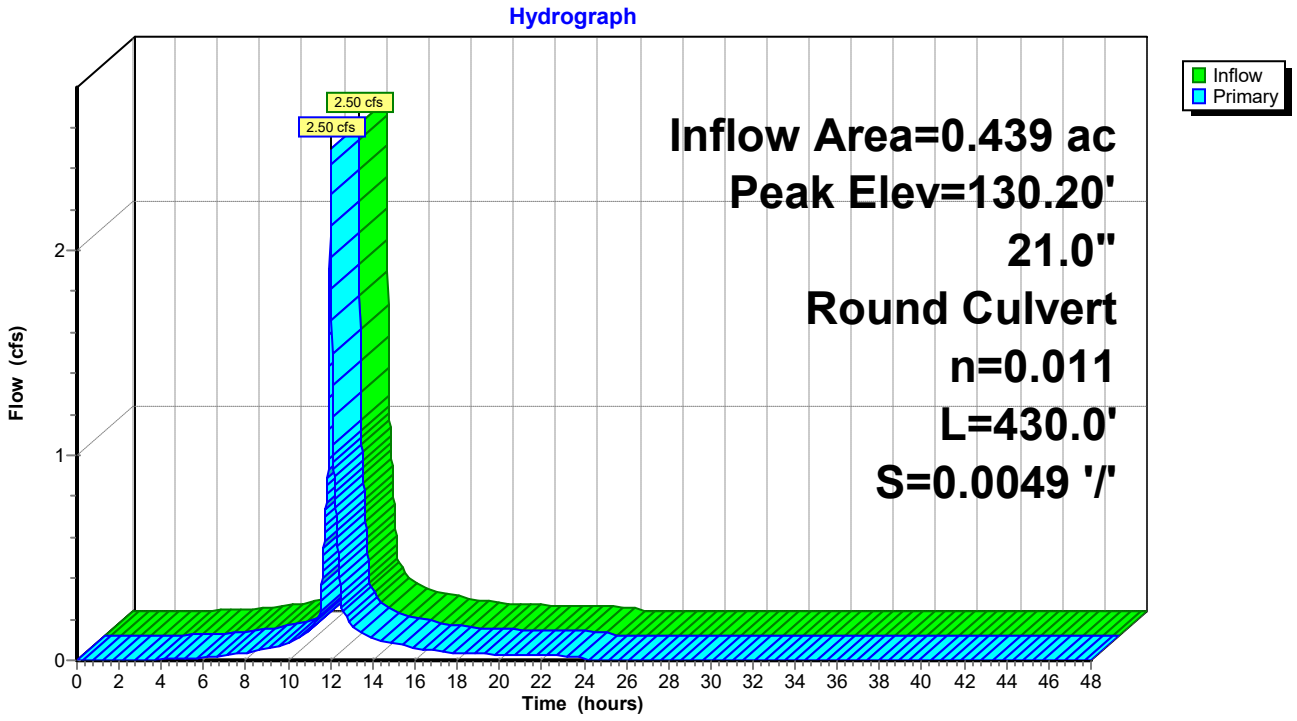
Inflow Area = 0.439 ac, 70.62% Impervious, Inflow Depth = 4.29" for 10-Year event
Inflow = 2.50 cfs @ 12.01 hrs, Volume= 0.157 af
Outflow = 2.50 cfs @ 12.01 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min
Primary = 2.50 cfs @ 12.01 hrs, Volume= 0.157 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 130.20' @ 12.01 hrs
Flood Elev= 138.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	129.50'	**21.0" Round Culvert** L= 430.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 129.50' / 127.39' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 2.41 sf

Primary OutFlow Max=2.48 cfs @ 12.01 hrs HW=130.20' (Free Discharge)
1=Culvert (Barrel Controls 2.48 cfs @ 4.09 fps)

Pond 5P: DMH



Summary for Pond 6P: Rain Garden

Inflow Area = 3.206 ac, 85.40% Impervious, Inflow Depth > 4.51" for 10-Year event
Inflow = 1.52 cfs @ 18.14 hrs, Volume= 1.205 af
Outflow = 1.52 cfs @ 18.20 hrs, Volume= 1.190 af, Atten= 0%, Lag= 3.7 min
Primary = 1.52 cfs @ 18.20 hrs, Volume= 1.190 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 134.15' @ 18.20 hrs Surf.Area= 2,274 sf Storage= 981 cf

Plug-Flow detention time= 24.8 min calculated for 1.190 af (99% of inflow)
Center-of-Mass det. time= 12.7 min (1,223.1 - 1,210.4)

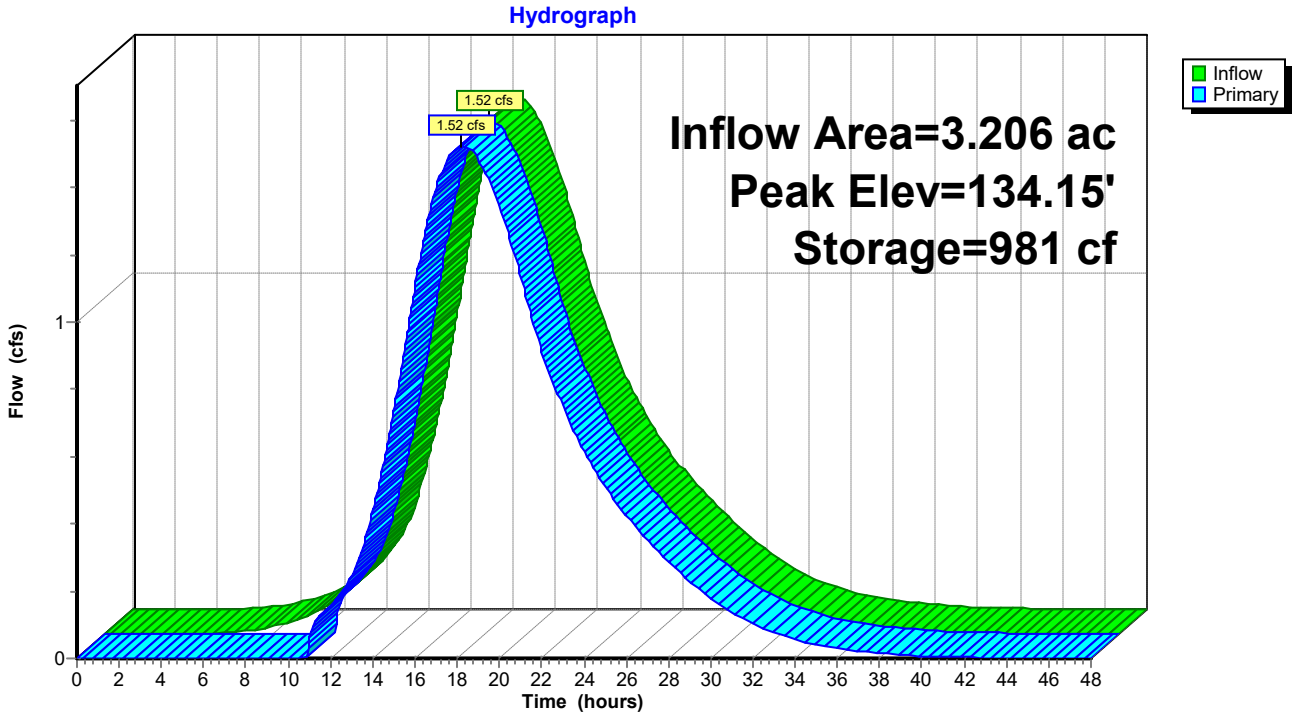
Volume	Invert	Avail.Storage	Storage Description
#1	133.50'	3,487 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.50	587	0	0
134.00	2,030	654	654
135.00	3,635	2,833	3,487

Device	Routing	Invert	Outlet Devices
#1	Primary	134.00'	**30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.52 cfs @ 18.20 hrs HW=134.15' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 1.52 cfs @ 1.27 fps)

Pond 6P: Rain Garden



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Sub-Catchment 1 Runoff Area=0.647 ac 0.00% Impervious Runoff Depth=3.90"
Flow Length=77' Slope=0.0520 '/' Tc=5.5 min CN=80 Runoff=3.00 cfs 0.210 af

Subcatchment 2S: Sub-Catchment 2 Runoff Area=0.439 ac 70.62% Impervious Runoff Depth=5.31"
Flow Length=153' Tc=0.7 min CN=93 Runoff=3.06 cfs 0.194 af

Subcatchment 3S: Sub-Catchment D - Runoff Area=3.206 ac 85.40% Impervious Runoff Depth>5.54"
Tc=480.0 min CN=95 Runoff=1.86 cfs 1.480 af

Pond 1P: Outfall # 1 - Resource Area Perimeter Inflow=3.00 cfs 0.210 af
Primary=3.00 cfs 0.210 af

Pond 2P: Outfall #2 to CB Peak Elev=135.34' Inflow=3.06 cfs 0.194 af
12.0" Round Culvert n=0.011 L=215.0' S=0.0077 '/' Outflow=3.06 cfs 0.194 af

Pond 4P: Outfall # 4 - Resource Area North Corner Inflow=3.26 cfs 1.660 af
Primary=3.26 cfs 1.660 af

Pond 5P: DMH Peak Elev=130.28' Inflow=3.06 cfs 0.194 af
21.0" Round Culvert n=0.011 L=430.0' S=0.0049 '/' Outflow=3.06 cfs 0.194 af

Pond 6P: Rain Garden Peak Elev=134.17' Storage=1,031 cf Inflow=1.86 cfs 1.480 af
Outflow=1.86 cfs 1.465 af

Total Runoff Area = 4.292 ac Runoff Volume = 1.885 af Average Runoff Depth = 5.27"
28.98% Pervious = 1.244 ac 71.02% Impervious = 3.048 ac

Summary for Subcatchment 1S: Sub-Catchment 1

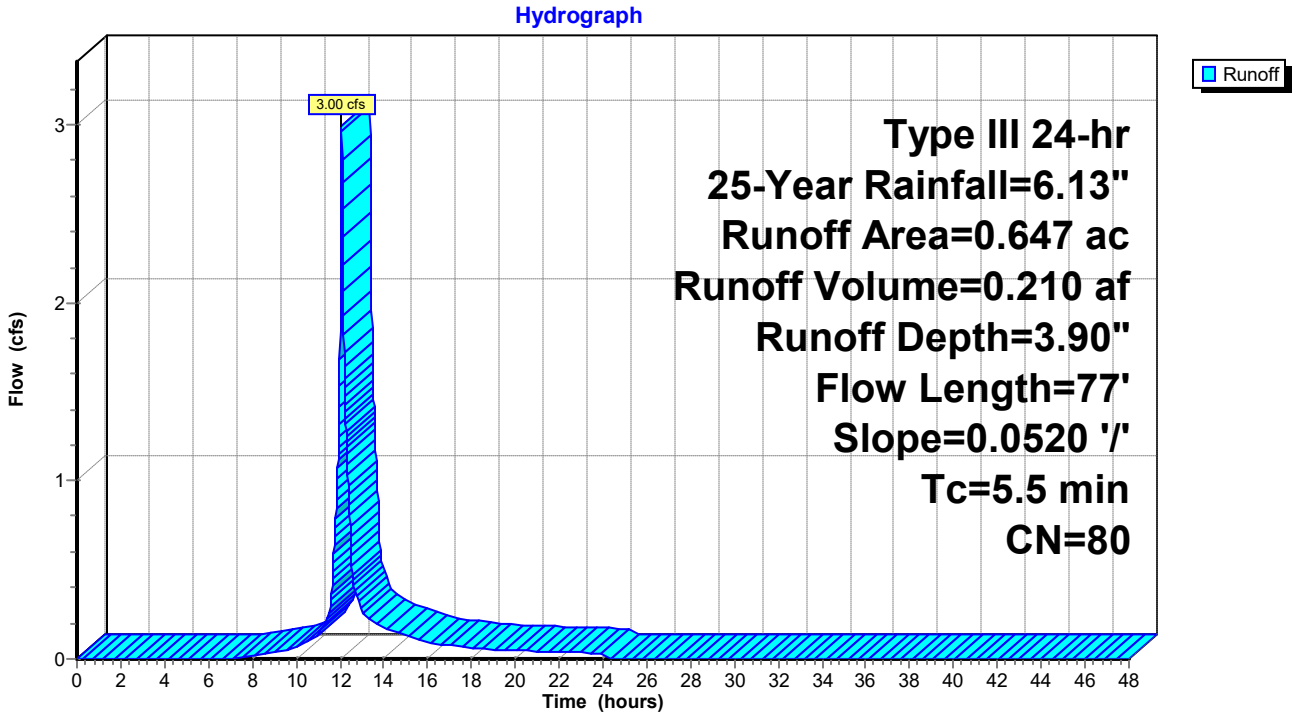
Runoff = 3.00 cfs @ 12.08 hrs, Volume= 0.210 af, Depth= 3.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.13"

Area (ac)	CN	Description
0.647	80	>75% Grass cover, Good, HSG D
0.647		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	77	0.0520	0.23		**Sheet Flow, Grass Area** Grass: Short n= 0.150 P2= 3.10"

Subcatchment 1S: Sub-Catchment 1



Summary for Subcatchment 2S: Sub-Catchment 2

[49] Hint: Tc<2dt may require smaller dt

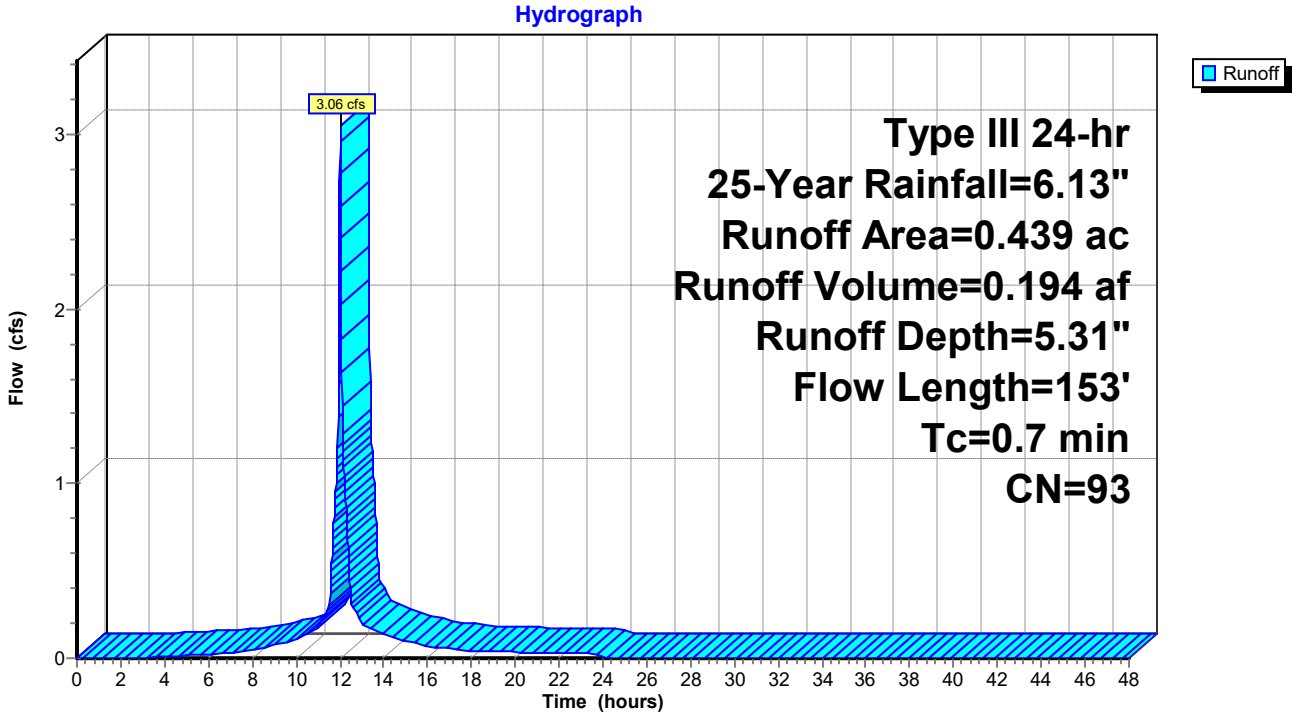
Runoff = 3.06 cfs @ 12.01 hrs, Volume= 0.194 af, Depth= 5.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.13"

Area (ac)	CN	Description
0.310	98	Unconnected pavement, HSG D
0.129	80	>75% Grass cover, Good, HSG D
0.439	93	Weighted Average
0.129		29.38% Pervious Area
0.310		70.62% Impervious Area
0.310		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	50	0.0800	2.05		**Sheet Flow, Grass Hill** Smooth surfaces n= 0.011 P2= 3.10"
0.3	103	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	153	Total			

Subcatchment 2S: Sub-Catchment 2



Summary for Subcatchment 3S: Sub-Catchment D - Athletic Field

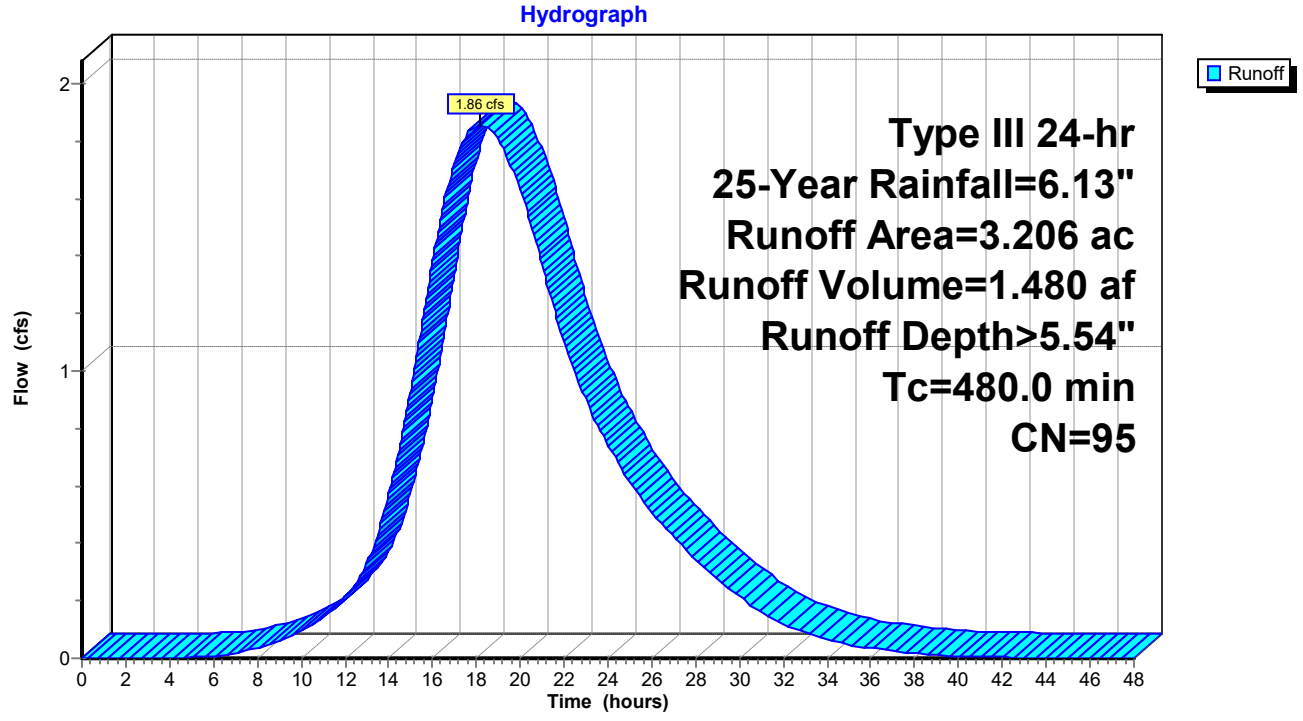
Runoff = 1.86 cfs @ 18.14 hrs, Volume= 1.480 af, Depth> 5.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.13"

	Area (ac)	CN	Description
	0.282	98	Paved parking, HSG D
*	2.456	98	Synthetic Turf
	0.468	80	>75% Grass cover, Good, HSG D
	3.206	95	Weighted Average
	0.468		14.60% Pervious Area
	2.738		85.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
480.0					**Direct Entry, Turf Field Base Stone**

Subcatchment 3S: Sub-Catchment D - Athletic Field



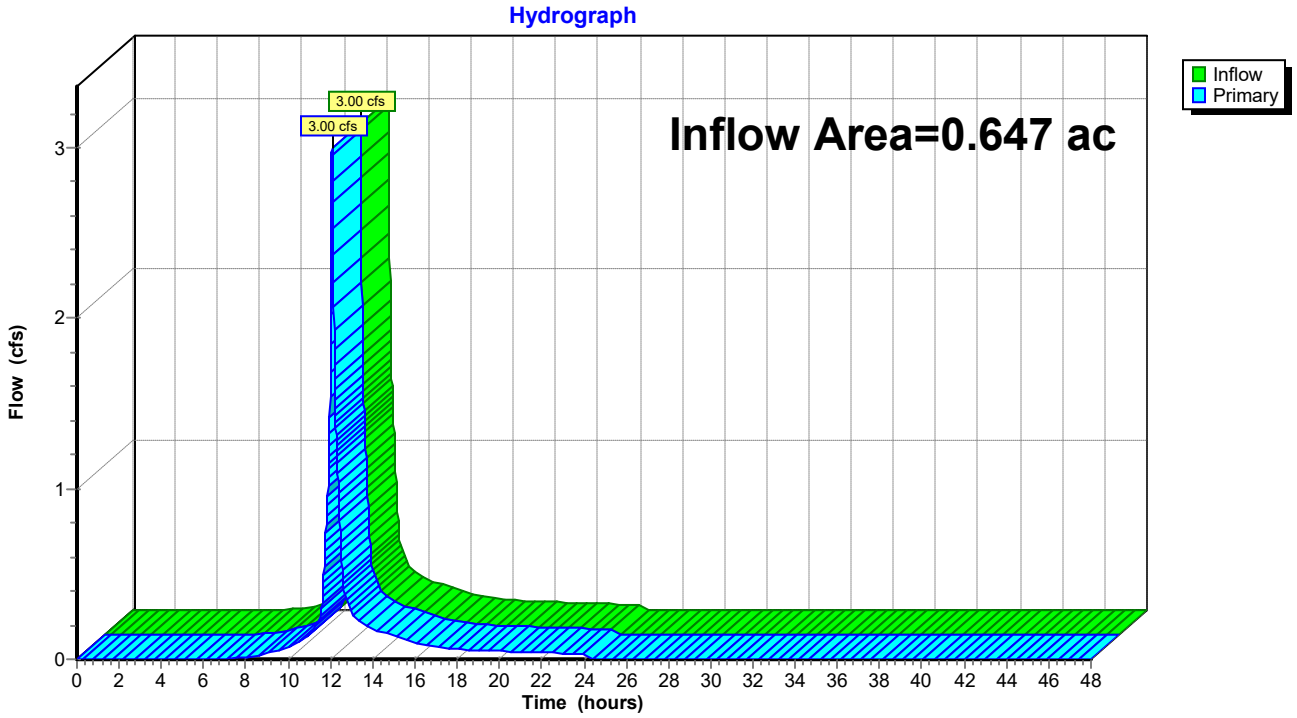
Summary for Pond 1P: Outfall # 1 - Resource Area Perimeter

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.647 ac, 0.00% Impervious, Inflow Depth = 3.90" for 25-Year event
Inflow = 3.00 cfs @ 12.08 hrs, Volume= 0.210 af
Primary = 3.00 cfs @ 12.08 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond 1P: Outfall # 1 - Resource Area Perimeter



Summary for Pond 2P: Outfall #2 to CB

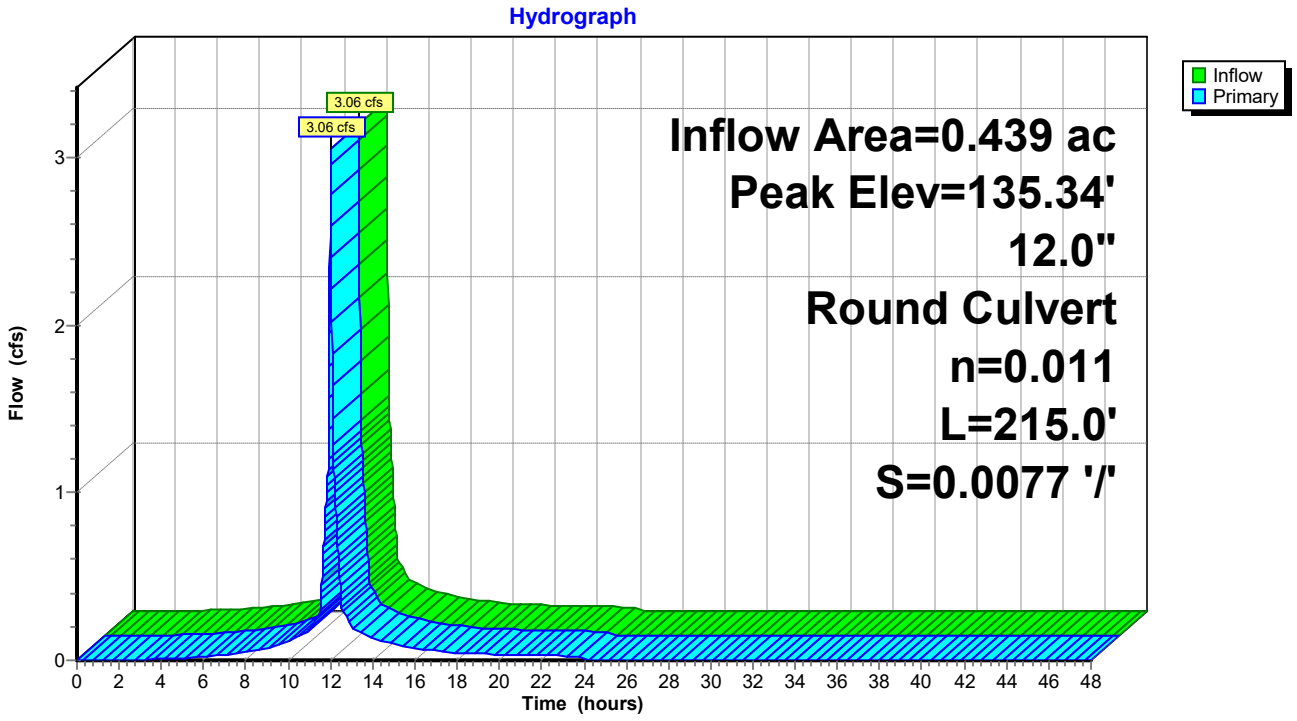
Inflow Area = 0.439 ac, 70.62% Impervious, Inflow Depth = 5.31" for 25-Year event
Inflow = 3.06 cfs @ 12.01 hrs, Volume= 0.194 af
Outflow = 3.06 cfs @ 12.01 hrs, Volume= 0.194 af, Atten= 0%, Lag= 0.0 min
Primary = 3.06 cfs @ 12.01 hrs, Volume= 0.194 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 135.34' @ 12.01 hrs
Flood Elev= 138.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	134.36'	**12.0" Round Culvert** L= 215.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 134.36' / 132.70' S= 0.0077 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=3.05 cfs @ 12.01 hrs HW=135.33' (Free Discharge)
1=Culvert (Barrel Controls 3.05 cfs @ 4.96 fps)

Pond 2P: Outfall #2 to CB



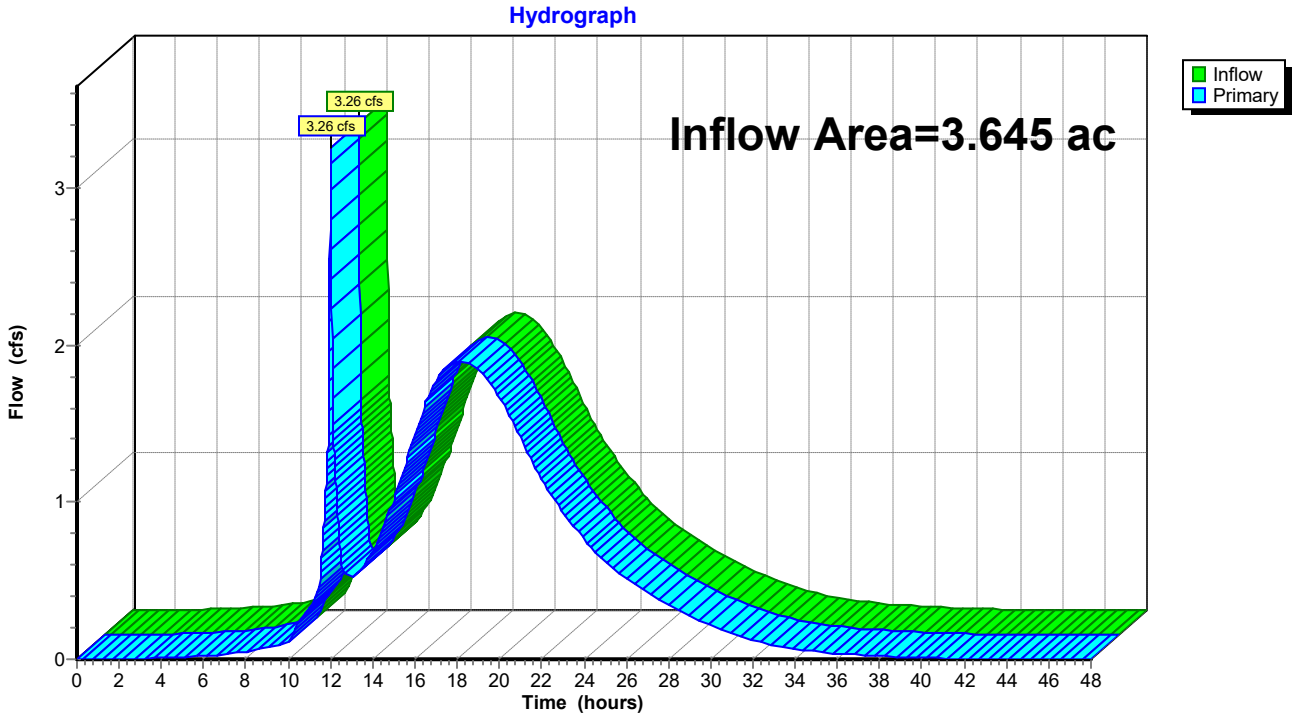
Summary for Pond 4P: Outfall # 4 - Resource Area North Corner

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.645 ac, 83.62% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 3.26 cfs @ 12.01 hrs, Volume= 1.660 af
Primary = 3.26 cfs @ 12.01 hrs, Volume= 1.660 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond 4P: Outfall # 4 - Resource Area North Corner



Summary for Pond 5P: DMH

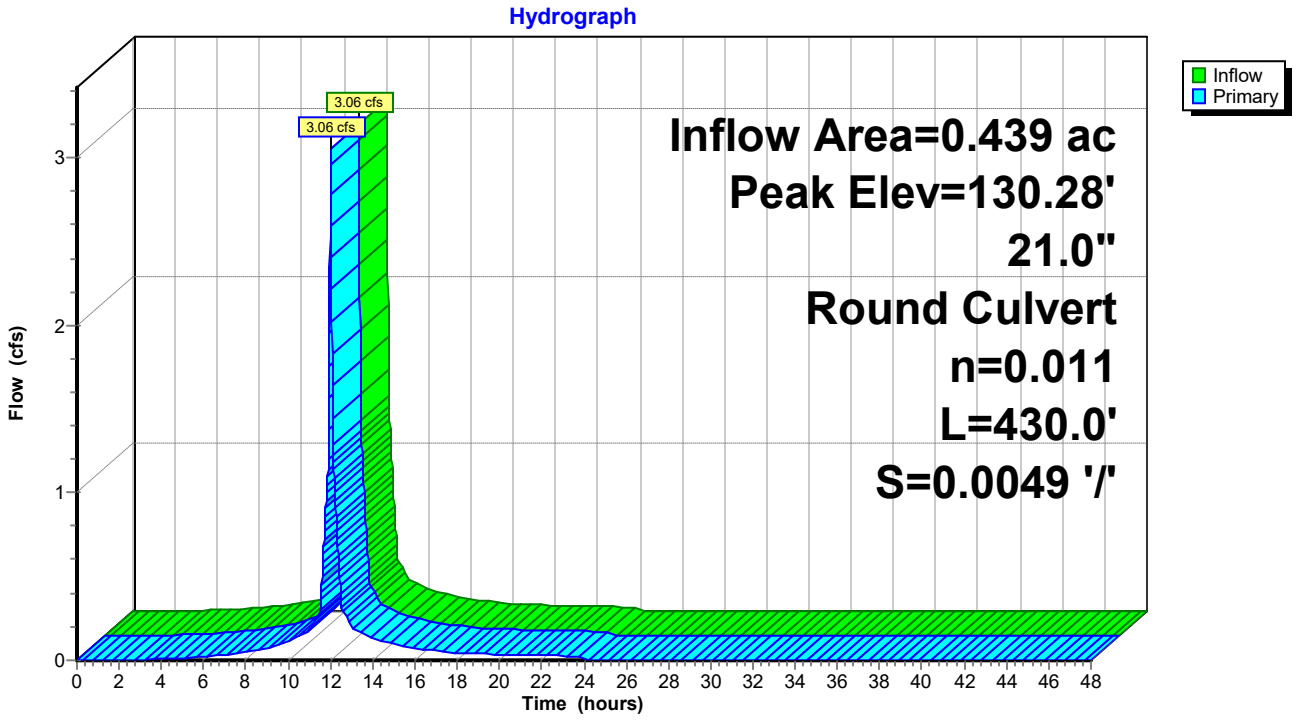
Inflow Area = 0.439 ac, 70.62% Impervious, Inflow Depth = 5.31" for 25-Year event
Inflow = 3.06 cfs @ 12.01 hrs, Volume= 0.194 af
Outflow = 3.06 cfs @ 12.01 hrs, Volume= 0.194 af, Atten= 0%, Lag= 0.0 min
Primary = 3.06 cfs @ 12.01 hrs, Volume= 0.194 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 130.28' @ 12.01 hrs
Flood Elev= 138.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	129.50'	**21.0" Round Culvert** L= 430.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 129.50' / 127.39' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 2.41 sf

Primary OutFlow Max=3.04 cfs @ 12.01 hrs HW=130.28' (Free Discharge)
1=Culvert (Barrel Controls 3.04 cfs @ 4.32 fps)

Pond 5P: DMH



Summary for Pond 6P: Rain Garden

Inflow Area = 3.206 ac, 85.40% Impervious, Inflow Depth > 5.54" for 25-Year event
Inflow = 1.86 cfs @ 18.14 hrs, Volume= 1.480 af
Outflow = 1.86 cfs @ 18.19 hrs, Volume= 1.465 af, Atten= 0%, Lag= 3.0 min
Primary = 1.86 cfs @ 18.19 hrs, Volume= 1.465 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 134.17' @ 18.19 hrs Surf.Area= 2,309 sf Storage= 1,031 cf

Plug-Flow detention time= 21.5 min calculated for 1.465 af (99% of inflow)
Center-of-Mass det. time= 11.3 min (1,217.0 - 1,205.7)

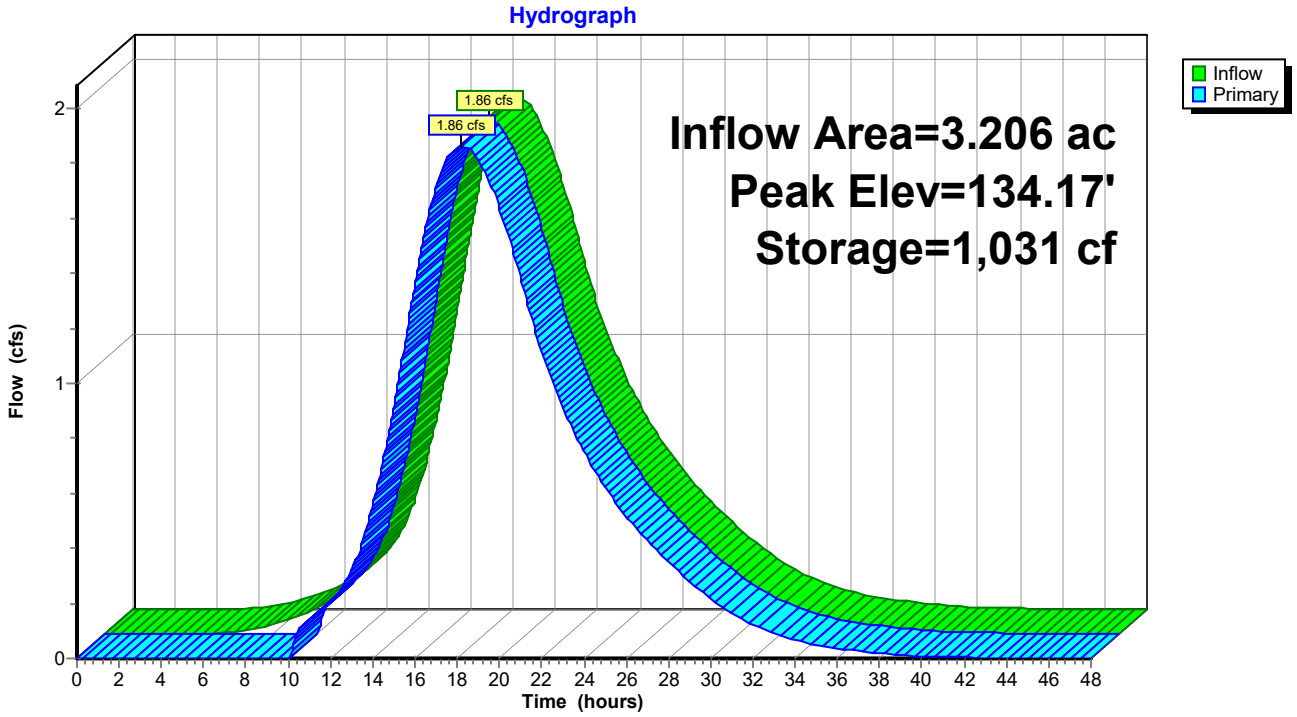
Volume	Invert	Avail.Storage	Storage Description
#1	133.50'	3,487 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.50	587	0	0
134.00	2,030	654	654
135.00	3,635	2,833	3,487

Device	Routing	Invert	Outlet Devices
#1	Primary	134.00'	**30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.86 cfs @ 18.19 hrs HW=134.17' (Free Discharge)
↑**1=Orifice/Grate** (Weir Controls 1.86 cfs @ 1.36 fps)

Pond 6P: Rain Garden



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Sub-Catchment 1 Runoff Area=0.647 ac 0.00% Impervious Runoff Depth=5.38"
Flow Length=77' Slope=0.0520 '/' Tc=5.5 min CN=80 Runoff=4.10 cfs 0.290 af

Subcatchment 2S: Sub-Catchment 2 Runoff Area=0.439 ac 70.62% Impervious Runoff Depth=6.90"
Flow Length=153' Tc=0.7 min CN=93 Runoff=3.91 cfs 0.253 af

Subcatchment 3S: Sub-Catchment D - Runoff Area=3.206 ac 85.40% Impervious Runoff Depth>7.14"
Tc=480.0 min CN=95 Runoff=2.38 cfs 1.908 af

Pond 1P: Outfall # 1 - Resource Area Perimeter Inflow=4.10 cfs 0.290 af
Primary=4.10 cfs 0.290 af

Pond 2P: Outfall #2 to CB Peak Elev=136.03' Inflow=3.91 cfs 0.253 af
12.0" Round Culvert n=0.011 L=215.0' S=0.0077 '/' Outflow=3.91 cfs 0.253 af

Pond 4P: Outfall # 4 - Resource Area North Corner Inflow=4.20 cfs 2.146 af
Primary=4.20 cfs 2.146 af

Pond 5P: DMH Peak Elev=130.39' Inflow=3.91 cfs 0.253 af
21.0" Round Culvert n=0.011 L=430.0' S=0.0049 '/' Outflow=3.91 cfs 0.253 af

Pond 6P: Rain Garden Peak Elev=134.20' Storage=1,104 cf Inflow=2.38 cfs 1.908 af
Outflow=2.38 cfs 1.893 af

Total Runoff Area = 4.292 ac Runoff Volume = 2.451 af Average Runoff Depth = 6.85"
28.98% Pervious = 1.244 ac 71.02% Impervious = 3.048 ac

Summary for Subcatchment 1S: Sub-Catchment 1

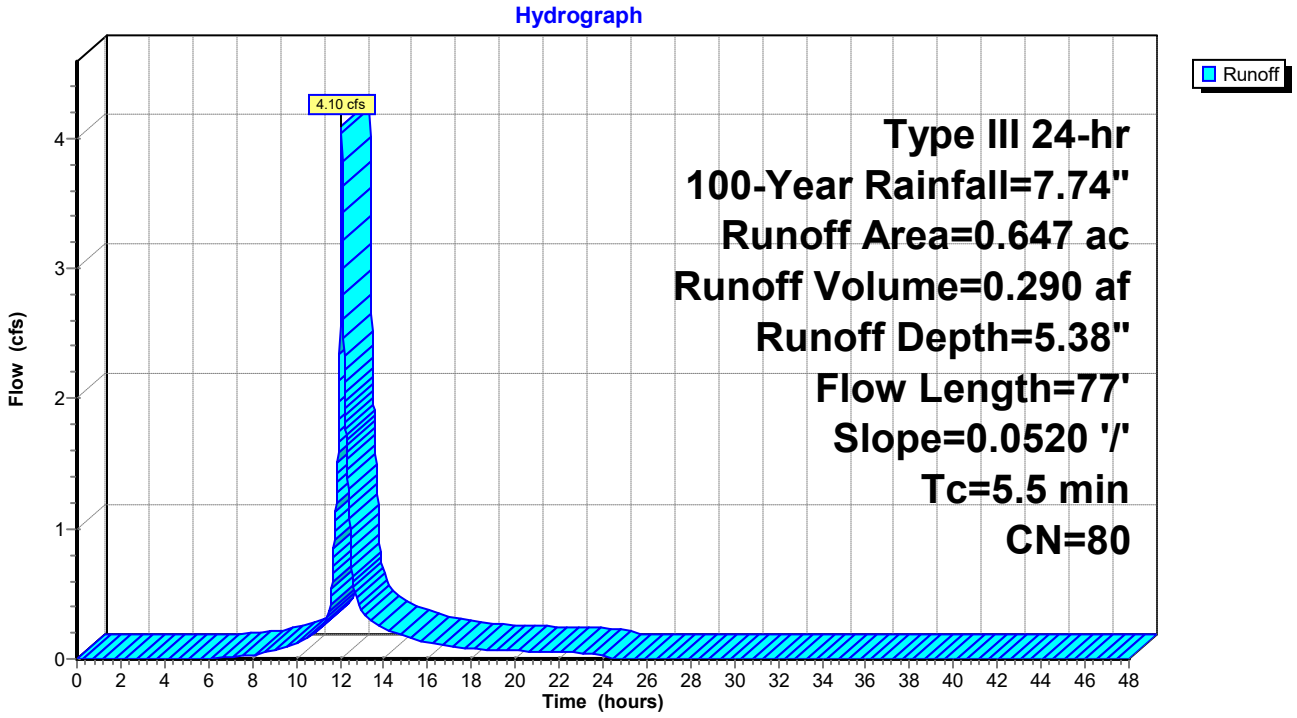
Runoff = 4.10 cfs @ 12.08 hrs, Volume= 0.290 af, Depth= 5.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.74"

Area (ac)	CN	Description
0.647	80	>75% Grass cover, Good, HSG D
0.647		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	77	0.0520	0.23		**Sheet Flow, Grass Area** Grass: Short n= 0.150 P2= 3.10"

Subcatchment 1S: Sub-Catchment 1



Summary for Subcatchment 2S: Sub-Catchment 2

[49] Hint: Tc<2dt may require smaller dt

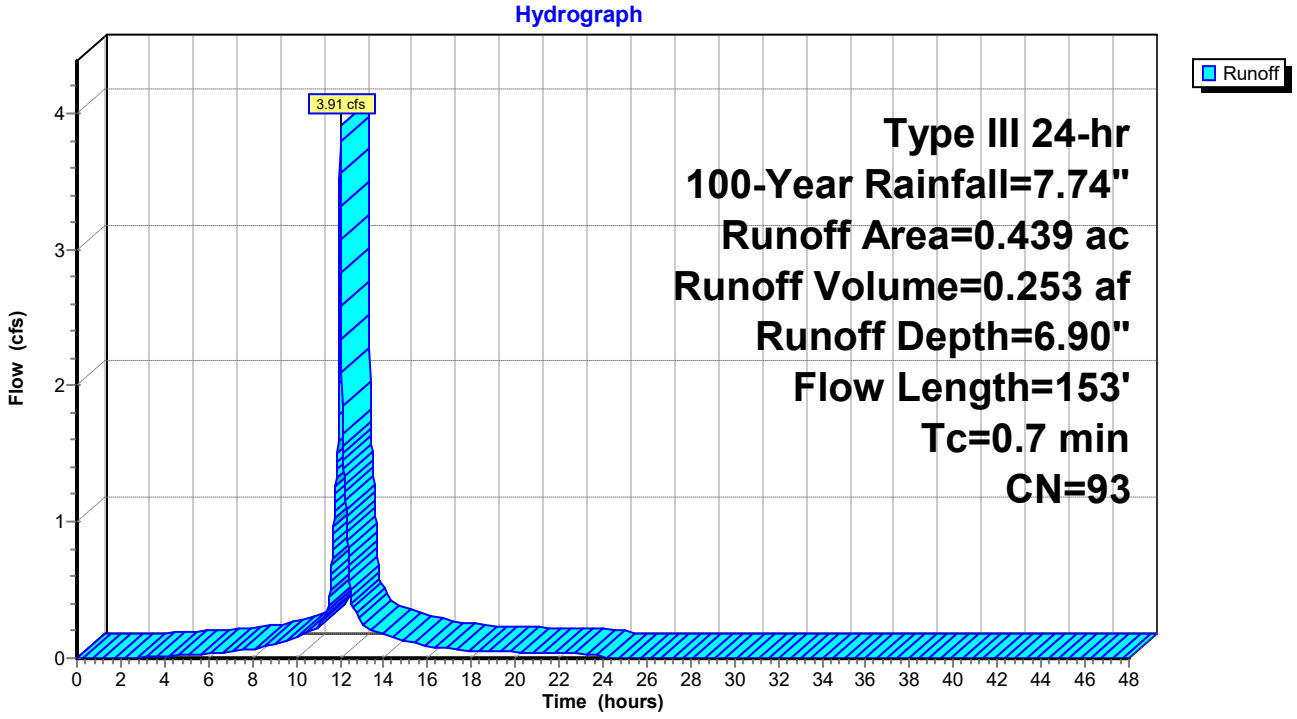
Runoff = 3.91 cfs @ 12.01 hrs, Volume= 0.253 af, Depth= 6.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.74"

Area (ac)	CN	Description
0.310	98	Unconnected pavement, HSG D
0.129	80	>75% Grass cover, Good, HSG D
0.439	93	Weighted Average
0.129		29.38% Pervious Area
0.310		70.62% Impervious Area
0.310		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	50	0.0800	2.05		**Sheet Flow, Grass Hill** Smooth surfaces n= 0.011 P2= 3.10"
0.3	103	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	153	Total			

Subcatchment 2S: Sub-Catchment 2



Summary for Subcatchment 3S: Sub-Catchment D - Athletic Field

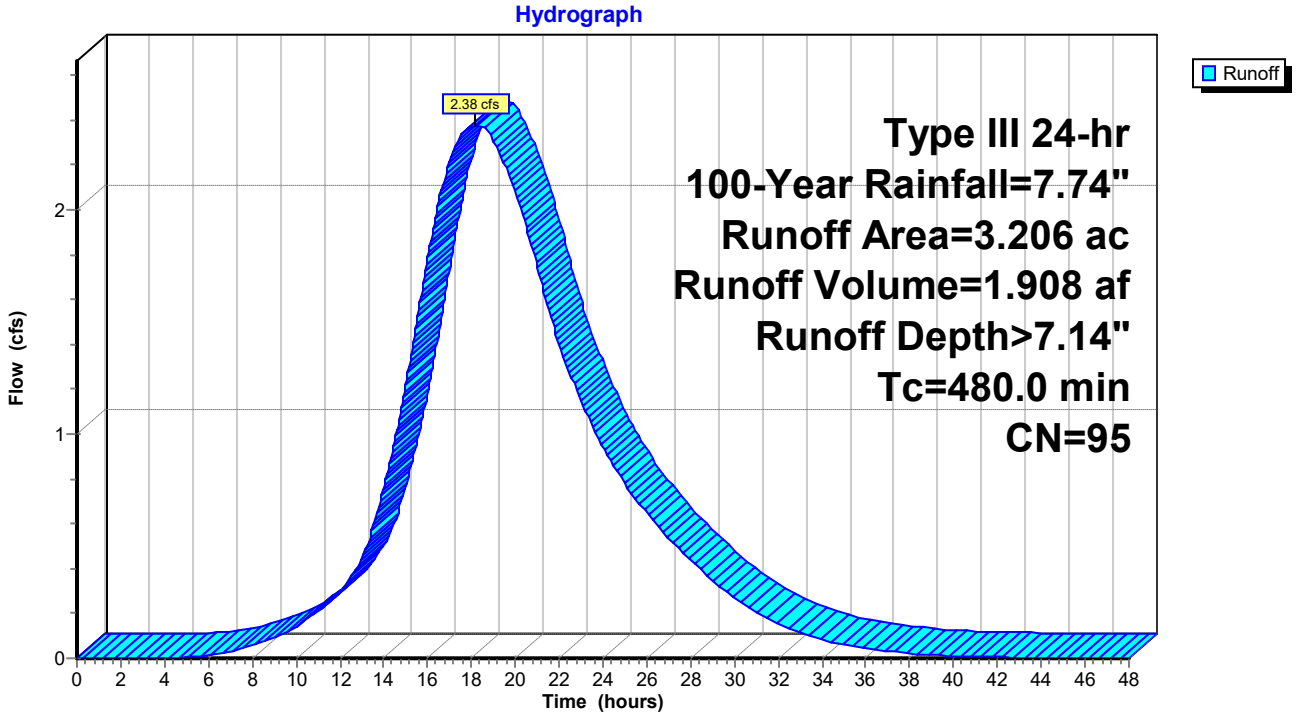
Runoff = 2.38 cfs @ 18.14 hrs, Volume= 1.908 af, Depth> 7.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.74"

	Area (ac)	CN	Description
	0.282	98	Paved parking, HSG D
*	2.456	98	Synthetic Turf
	0.468	80	>75% Grass cover, Good, HSG D
	3.206	95	Weighted Average
	0.468		14.60% Pervious Area
	2.738		85.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
480.0					**Direct Entry, Turf Field Base Stone**

Subcatchment 3S: Sub-Catchment D - Athletic Field



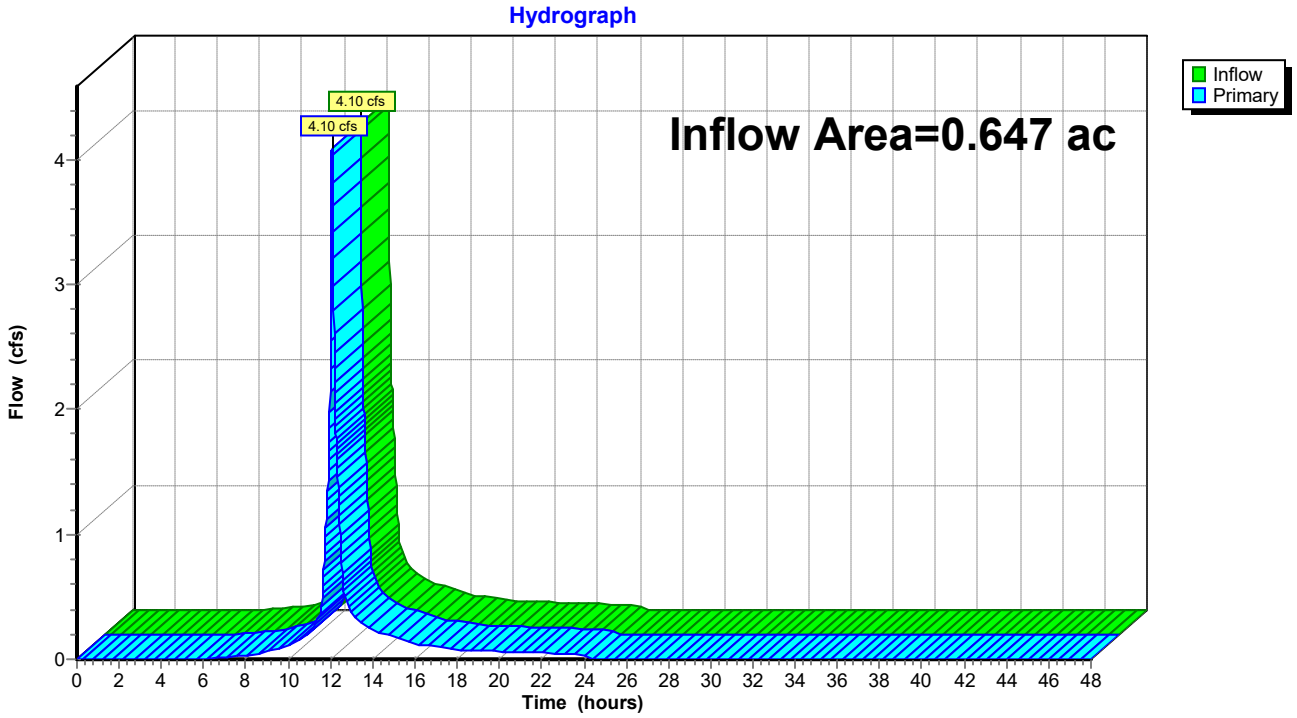
Summary for Pond 1P: Outfall # 1 - Resource Area Perimeter

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.647 ac, 0.00% Impervious, Inflow Depth = 5.38" for 100-Year event
Inflow = 4.10 cfs @ 12.08 hrs, Volume= 0.290 af
Primary = 4.10 cfs @ 12.08 hrs, Volume= 0.290 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond 1P: Outfall # 1 - Resource Area Perimeter



Summary for Pond 2P: Outfall #2 to CB

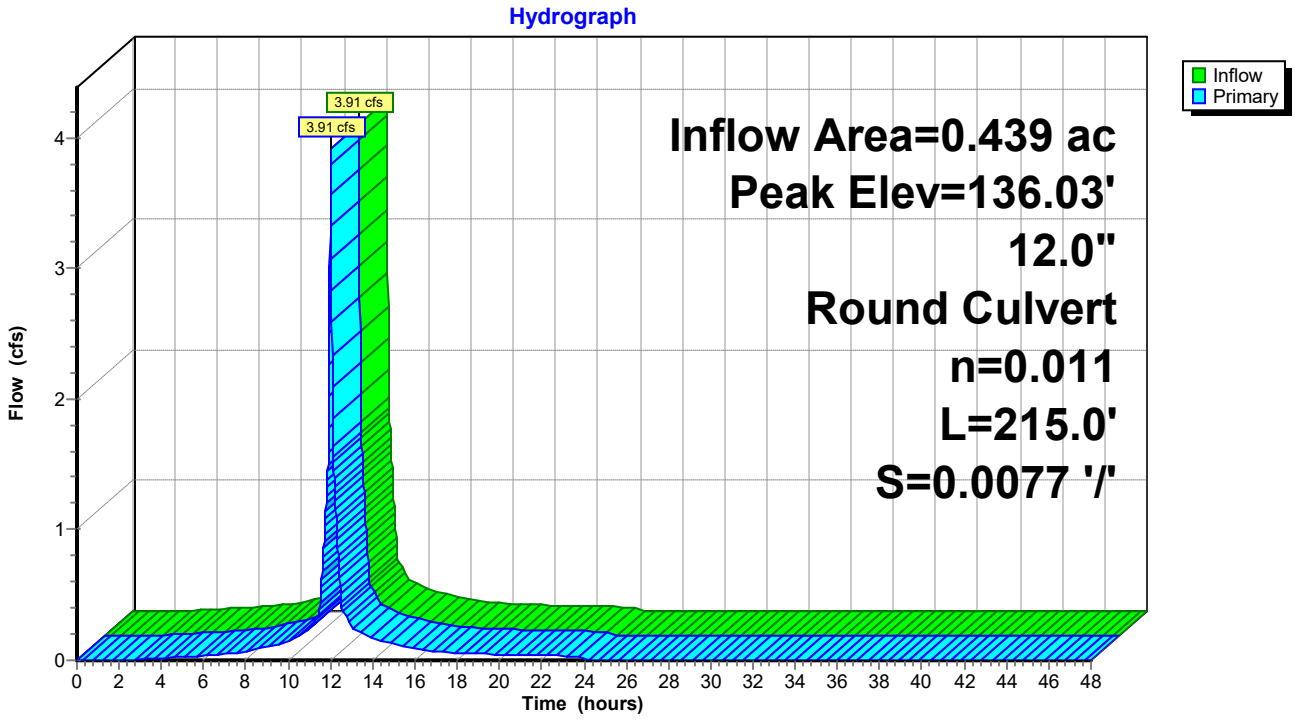
Inflow Area = 0.439 ac, 70.62% Impervious, Inflow Depth = 6.90" for 100-Year event
Inflow = 3.91 cfs @ 12.01 hrs, Volume= 0.253 af
Outflow = 3.91 cfs @ 12.01 hrs, Volume= 0.253 af, Atten= 0%, Lag= 0.0 min
Primary = 3.91 cfs @ 12.01 hrs, Volume= 0.253 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 136.03' @ 12.01 hrs
Flood Elev= 138.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	134.36'	**12.0" Round Culvert** L= 215.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 134.36' / 132.70' S= 0.0077 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

Primary OutFlow Max=3.89 cfs @ 12.01 hrs HW=136.00' (Free Discharge)
1=Culvert (Barrel Controls 3.89 cfs @ 4.96 fps)

Pond 2P: Outfall #2 to CB



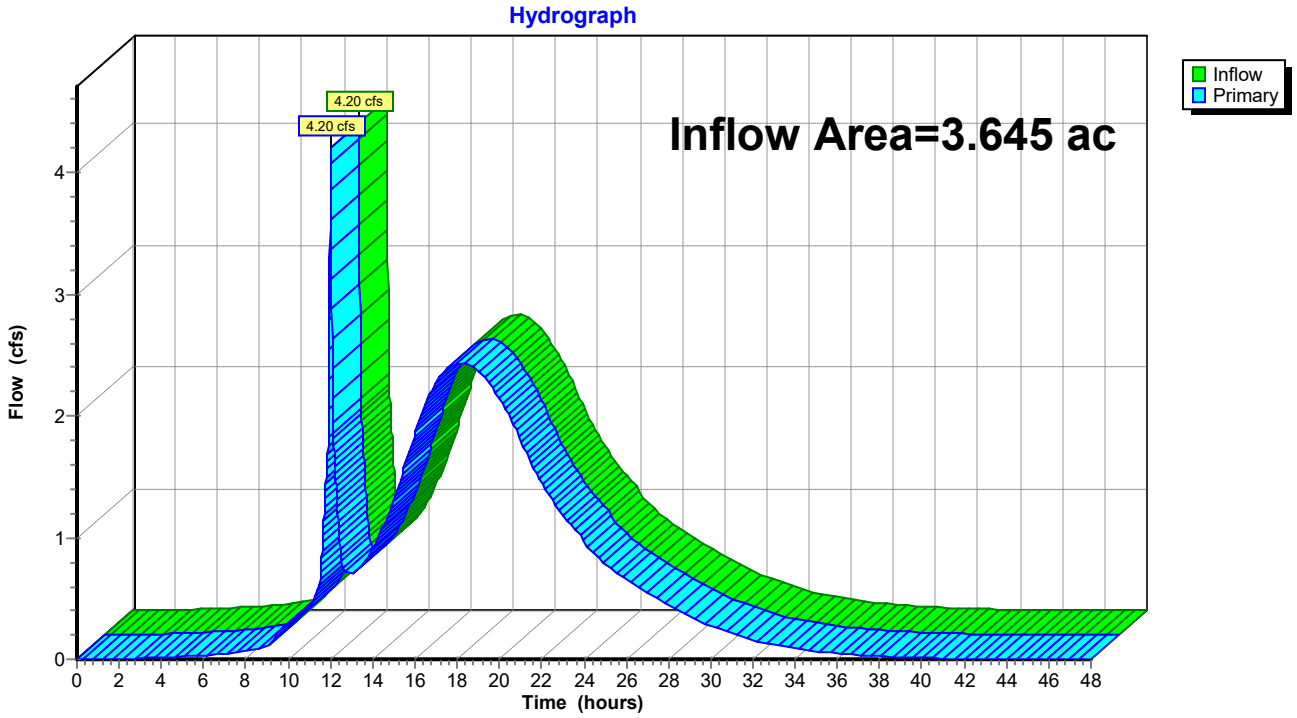
Summary for Pond 4P: Outfall # 4 - Resource Area North Corner

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.645 ac, 83.62% Impervious, Inflow Depth = 7.06" for 100-Year event
Inflow = 4.20 cfs @ 12.01 hrs, Volume= 2.146 af
Primary = 4.20 cfs @ 12.01 hrs, Volume= 2.146 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond 4P: Outfall # 4 - Resource Area North Corner



Summary for Pond 5P: DMH

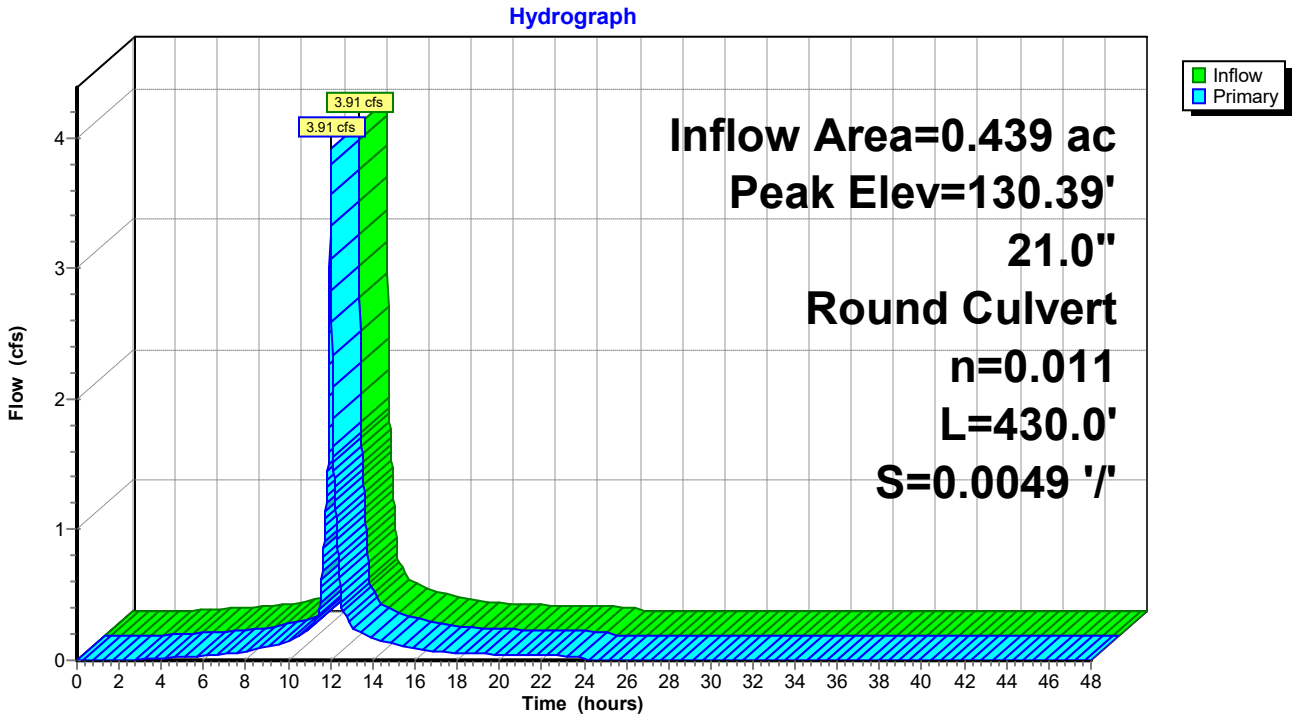
Inflow Area = 0.439 ac, 70.62% Impervious, Inflow Depth = 6.90" for 100-Year event
Inflow = 3.91 cfs @ 12.01 hrs, Volume= 0.253 af
Outflow = 3.91 cfs @ 12.01 hrs, Volume= 0.253 af, Atten= 0%, Lag= 0.0 min
Primary = 3.91 cfs @ 12.01 hrs, Volume= 0.253 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 130.39' @ 12.01 hrs
Flood Elev= 138.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	129.50'	**21.0" Round Culvert** L= 430.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 129.50' / 127.39' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 2.41 sf

Primary OutFlow Max=3.90 cfs @ 12.01 hrs HW=130.39' (Free Discharge)
1=Culvert (Barrel Controls 3.90 cfs @ 4.61 fps)

Pond 5P: DMH



Summary for Pond 6P: Rain Garden

Inflow Area = 3.206 ac, 85.40% Impervious, Inflow Depth > 7.14" for 100-Year event
Inflow = 2.38 cfs @ 18.14 hrs, Volume= 1.908 af
Outflow = 2.38 cfs @ 18.18 hrs, Volume= 1.893 af, Atten= 0%, Lag= 2.4 min
Primary = 2.38 cfs @ 18.18 hrs, Volume= 1.893 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 134.20' @ 18.18 hrs Surf.Area= 2,359 sf Storage= 1,104 cf

Plug-Flow detention time= 17.8 min calculated for 1.893 af (99% of inflow)
Center-of-Mass det. time= 9.7 min (1,210.1 - 1,200.4)

Volume	Invert	Avail.Storage	Storage Description
#1	133.50'	3,487 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.50	587	0	0
134.00	2,030	654	654
135.00	3,635	2,833	3,487

Device	Routing	Invert	Outlet Devices
#1	Primary	134.00'	**30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.38 cfs @ 18.18 hrs HW=134.20' (Free Discharge)
↑**1=Orifice/Grate** (Weir Controls 2.38 cfs @ 1.48 fps)

Pond 6P: Rain Garden