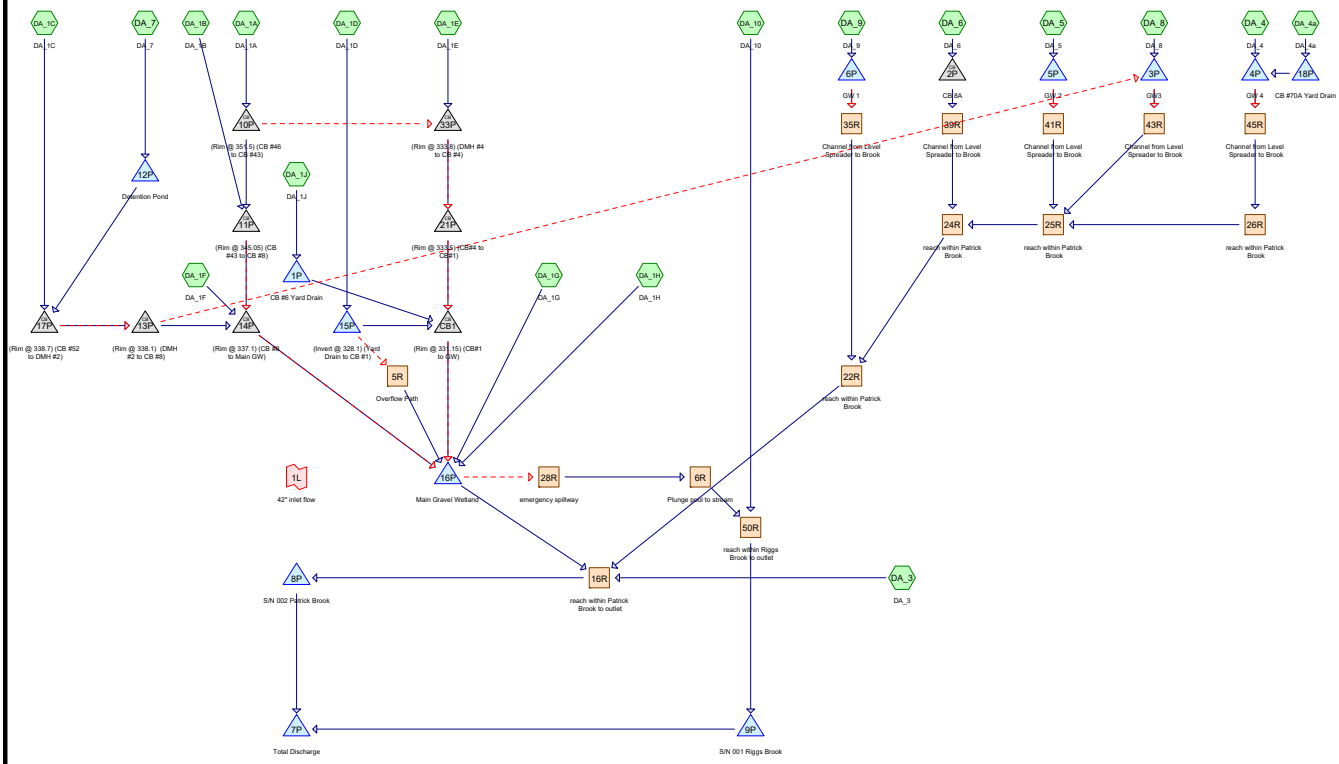


Subcat Reach Pond Link

Routing Diagram for Post_Haystack_5-13-22 (1)
Prepared by HP Inc., Printed 6/17/2022

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.321	74	>75% Grass cover, Good, HSG C (DA_10, DA_1C, DA_3, DA_4, DA_4a, DA_5, DA_6, DA_8)
36.178	80	>75% Grass cover, Good, HSG D (DA_10, DA_1A, DA_1B, DA_1C, DA_1D, DA_1E, DA_1F, DA_1G, DA_1H, DA_1J, DA_3, DA_4, DA_4a, DA_5, DA_6, DA_7, DA_9)
2.587	98	Paved Parking, HSG C (DA_1C, DA_3, DA_4, DA_4a, DA_5, DA_6, DA_8)
18.541	98	Paved Parking, HSG D (DA_10, DA_1A, DA_1B, DA_1C, DA_1D, DA_1E, DA_1F, DA_1G, DA_1J, DA_3, DA_4, DA_4a, DA_5, DA_6, DA_7, DA_9)
0.037	98	Water Surface, 0% imp, HSG D (DA_1B)
1.280	70	Woods, Good, HSG C (DA_10, DA_3, DA_8)
0.988	77	Woods, Good, HSG D (DA_3)
62.933	**85**	**TOTAL AREA**

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	2P	327.10	327.00	25.0	0.0040	0.013	0.0	18.0	0.0
2	3P	328.50	328.50	15.0	0.0000	0.013	0.0	18.0	0.0
3	4P	330.80	330.40	17.0	0.0235	0.013	0.0	18.0	0.0
4	5P	327.50	327.50	33.0	0.0000	0.013	0.0	18.0	0.0
5	6P	326.80	326.00	28.0	0.0286	0.013	0.0	18.0	0.0
6	10P	345.50	340.50	244.0	0.0205	0.013	0.0	24.0	0.0
7	11P	339.90	329.80	696.0	0.0145	0.013	0.0	36.0	0.0
8	12P	333.00	332.50	47.0	0.0106	0.013	0.0	15.0	0.0
9	13P	331.13	329.54	312.0	0.0051	0.013	0.0	24.0	0.0
10	14P	329.52	325.50	729.0	0.0055	0.013	0.0	42.0	0.0
11	15P	328.10	326.80	50.0	0.0260	0.013	0.0	24.0	0.0
12	16P	324.50	324.10	80.0	0.0050	0.013	0.0	24.0	0.0
13	17P	331.55	331.15	38.0	0.0105	0.013	0.0	24.0	0.0
14	21P	326.98	326.02	193.0	0.0050	0.013	0.0	42.0	0.0
15	33P	328.90	327.00	179.0	0.0106	0.013	0.0	30.0	0.0
16	CB1	326.00	325.50	76.0	0.0066	0.013	0.0	42.0	0.0

Time span=0.00-150.00 hrs, dt=0.02 hrs, 7501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA_10: DA_10 Runoff Area=5.750 ac 5.01% Impervious Runoff Depth=3.15"
Flow Length=428' Slope=0.0657 '/' Tc=6.1 min CN=WQ Runoff=31.34 cfs 1.509 af

Subcatchment DA_1A: DA_1A Runoff Area=4.828 ac 44.92% Impervious Runoff Depth=3.93"
Flow Length=718' Slope=0.0557 '/' Tc=7.8 min CN=WQ Runoff=28.64 cfs 1.581 af

Subcatchment DA_1B: DA_1B Runoff Area=8.742 ac 54.53% Impervious Runoff Depth=4.12"
Flow Length=1,286' Slope=0.0477 '/' Tc=12.5 min CN=WQ Runoff=45.99 cfs 3.000 af

Subcatchment DA_1C: DA_1C Runoff Area=3.404 ac 69.93% Impervious Runoff Depth=4.39"
Flow Length=637' Slope=0.0304 '/' Tc=8.2 min CN=WQ Runoff=21.47 cfs 1.244 af

Subcatchment DA_1D: DA_1D Runoff Area=4.419 ac 15.87% Impervious Runoff Depth=3.38"
Flow Length=1,239' Slope=0.0219 '/' Tc=23.1 min CN=WQ Runoff=14.84 cfs 1.244 af

Subcatchment DA_1E: DA_1E Runoff Area=5.212 ac 38.38% Impervious Runoff Depth=3.80"
Flow Length=810' Slope=0.0238 '/' Tc=13.7 min CN=WQ Runoff=24.95 cfs 1.652 af

Subcatchment DA_1F: DA_1F Runoff Area=2.030 ac 53.80% Impervious Runoff Depth=4.10"
Flow Length=623' Slope=0.0236 '/' Tc=9.9 min CN=WQ Runoff=11.57 cfs 0.693 af

Subcatchment DA_1G: DA_1G Runoff Area=5.640 ac 21.46% Impervious Runoff Depth=3.48"
Flow Length=786' Slope=0.0219 '/' Tc=15.5 min CN=WQ Runoff=24.01 cfs 1.637 af

Subcatchment DA_1H: DA_1H Runoff Area=3.739 ac 0.00% Impervious Runoff Depth=3.08"
Flow Length=421' Slope=0.0199 '/' Tc=11.3 min CN=80 Runoff=16.80 cfs 0.959 af

Subcatchment DA_1J: DA_1J Runoff Area=0.263 ac 36.50% Impervious Runoff Depth=3.77"
Flow Length=142' Slope=0.0184 '/' Tc=3.9 min CN=WQ Runoff=1.73 cfs 0.083 af

Subcatchment DA_3: DA_3 Runoff Area=6.246 ac 7.58% Impervious Runoff Depth=2.90"
Flow Length=238' Slope=0.0253 '/' Tc=6.7 min CN=WQ Runoff=30.60 cfs 1.508 af

Subcatchment DA_4: DA_4 Runoff Area=2.281 ac 56.09% Impervious Runoff Depth=3.93"
Flow Length=408' Slope=0.0137 '/' Tc=10.1 min CN=WQ Runoff=12.32 cfs 0.748 af

Subcatchment DA_4a: DA_4a Runoff Area=0.584 ac 38.98% Impervious Runoff Depth=3.49"
Flow Length=181' Slope=0.0131 '/' Tc=6.4 min CN=WQ Runoff=3.26 cfs 0.170 af

Subcatchment DA_5: DA_5 Runoff Area=1.237 ac 49.43% Impervious Runoff Depth=3.82"
Flow Length=315' Slope=0.0098 '/' Tc=10.1 min CN=WQ Runoff=6.54 cfs 0.393 af

Subcatchment DA_6: DA_6 Runoff Area=1.494 ac 2.19% Impervious Runoff Depth=3.11"
Flow Length=217' Slope=0.0235 '/' Tc=6.1 min CN=WQ Runoff=8.09 cfs 0.387 af

Subcatchment DA_7: DA_7 Runoff Area=5.711 ac 60.00% Impervious Runoff Depth=4.21"
Flow Length=1,025' Slope=0.0545 '/' Tc=9.3 min CN=WQ Runoff=33.85 cfs 2.006 af

Subcatchment DA_8: DA_8 Runoff Area=0.251 ac 36.31% Impervious Runoff Depth=3.42"
Flow Length=169' Slope=0.0086 '/' Tc=7.5 min CN=WQ Runoff=1.32 cfs 0.071 af

Subcatchment DA_9: DA_9 Runoff Area=1.101 ac 25.57% Impervious Runoff Depth=3.56"
Flow Length=218' Slope=0.0171 '/' Tc=6.1 min CN=WQ Runoff=6.49 cfs 0.327 af

Reach 5R: Overflow Path Avg. Flow Depth=0.47' Max Vel=4.35 fps Inflow=7.17 cfs 0.113 af
n=0.030 L=128.0' S=0.0352 '/' Capacity=33.06 cfs Outflow=6.97 cfs 0.113 af

Reach 6R: Plunge pool to stream Avg. Flow Depth=0.77' Max Vel=3.45 fps Inflow=73.77 cfs 2.591 af
n=0.040 L=53.0' S=0.0132 '/' Capacity=114.17 cfs Outflow=73.88 cfs 2.591 af

Reach 16R: reach within Patrick Avg. Flow Depth=2.51' Max Vel=2.76 fps Inflow=63.97 cfs 15.056 af
n=0.035 L=400.0' S=0.0025 '/' Capacity=91.51 cfs Outflow=62.39 cfs 15.056 af

Reach 22R: reach within Patrick Brook Avg. Flow Depth=1.40' Max Vel=2.41 fps Inflow=23.59 cfs 2.110 af
n=0.035 L=280.0' S=0.0036 '/' Capacity=109.38 cfs Outflow=22.96 cfs 2.110 af

Reach 24R: reach within Patrick Brook Avg. Flow Depth=1.29' Max Vel=2.31 fps Inflow=21.73 cfs 1.784 af
n=0.035 L=420.0' S=0.0036 '/' Capacity=109.38 cfs Outflow=19.63 cfs 1.784 af

Reach 25R: reach within Patrick Brook Avg. Flow Depth=1.01' Max Vel=2.81 fps Inflow=17.72 cfs 1.397 af
n=0.035 L=220.0' S=0.0068 '/' Capacity=151.13 cfs Outflow=17.17 cfs 1.397 af

Reach 26R: reach within Patrick Brook Avg. Flow Depth=1.06' Max Vel=1.63 fps Inflow=12.57 cfs 0.909 af
n=0.035 L=455.0' S=0.0022 '/' Capacity=85.80 cfs Outflow=10.52 cfs 0.909 af

Reach 28R: emergency spillway Avg. Flow Depth=0.65' Max Vel=5.65 fps Inflow=73.85 cfs 2.591 af
n=0.078 L=16.0' S=0.1687 '/' Capacity=146.89 cfs Outflow=73.77 cfs 2.591 af

Reach 35R: Channel from Level Avg. Flow Depth=0.26' Max Vel=0.35 fps Inflow=6.16 cfs 0.326 af
n=0.150 L=127.0' S=0.0079 '/' Capacity=47.21 cfs Outflow=5.03 cfs 0.326 af

Reach 39R: Channel from Level Avg. Flow Depth=0.58' Max Vel=0.53 fps Inflow=8.09 cfs 0.387 af
n=0.150 L=80.0' S=0.0063 '/' Capacity=18.60 cfs Outflow=7.72 cfs 0.387 af

Reach 41R: Channel from Level Avg. Flow Depth=0.17' Max Vel=0.30 fps Inflow=4.14 cfs 0.351 af
n=0.150 L=52.0' S=0.0096 '/' Capacity=76.45 cfs Outflow=4.01 cfs 0.351 af

Reach 43R: Channel from Level Avg. Flow Depth=0.74' Max Vel=0.80 fps Inflow=9.13 cfs 0.137 af
n=0.150 L=45.0' S=0.0111 '/' Capacity=14.41 cfs Outflow=8.82 cfs 0.137 af

Reach 45R: Channel from Level Avg. Flow Depth=0.16' Max Vel=0.35 fps Inflow=14.52 cfs 0.909 af
n=0.150 L=92.0' S=0.0141 '/' Capacity=256.34 cfs Outflow=12.57 cfs 0.909 af

Reach 50R: reach within Riggs Brook Avg. Flow Depth=2.50' Max Vel=3.34 fps Inflow=79.42 cfs 4.100 af
n=0.035 L=820.0' S=0.0037 '/' Capacity=110.71 cfs Outflow=75.20 cfs 4.100 af

Pond 1P: CB #6 Yard Drain Peak Elev=330.57' Storage=577 cf Inflow=1.73 cfs 0.083 af
Outflow=1.39 cfs 0.083 af

Pond 2P: CB 8A Peak Elev=329.15' Inflow=8.09 cfs 0.387 af
18.0" Round Culvert n=0.013 L=25.0' S=0.0040 '/' Outflow=8.09 cfs 0.387 af

Pond 3P: GW3 Peak Elev=329.87' Storage=4,038 cf Inflow=10.14 cfs 0.137 af
Primary=3.46 cfs 0.087 af Secondary=5.67 cfs 0.050 af Outflow=9.13 cfs 0.137 af

Pond 4P: GW 4 Peak Elev=332.59' Storage=14,402 cf Inflow=14.63 cfs 0.910 af
Primary=3.08 cfs 0.711 af Secondary=11.44 cfs 0.198 af Outflow=14.52 cfs 0.909 af

Pond 5P: GW 2 Peak Elev=329.41' Storage=9,079 cf Inflow=6.54 cfs 0.393 af
Primary=4.14 cfs 0.351 af Secondary=0.00 cfs 0.000 af Outflow=4.14 cfs 0.351 af

Pond 6P: GW 1 Peak Elev=327.61' Storage=10,189 cf Inflow=6.49 cfs 0.327 af
Primary=0.62 cfs 0.113 af Secondary=5.54 cfs 0.213 af Outflow=6.16 cfs 0.326 af

Pond 7P: Total Discharge Inflow=131.74 cfs 19.155 af
Primary=131.74 cfs 19.155 af

Pond 8P: S/N 002 Patrick Brook Inflow=62.39 cfs 15.056 af
Primary=62.39 cfs 15.056 af

Pond 9P: S/N 001 Riggs Brook Inflow=75.20 cfs 4.100 af
Primary=75.20 cfs 4.100 af

Pond 10P: (Rim @ 351.5) (CB #46 to CB #43) Peak Elev=351.12' Inflow=28.64 cfs 1.581 af
Primary=28.64 cfs 1.581 af Secondary=0.00 cfs 0.000 af Outflow=28.64 cfs 1.581 af

Pond 11P: (Rim @ 345.05) (CB #43 to CB #8) Peak Elev=345.53' Inflow=72.27 cfs 4.581 af
Primary=64.30 cfs 4.531 af Secondary=8.77 cfs 0.050 af Outflow=72.27 cfs 4.581 af

Pond 12P: Detention Pond Peak Elev=336.16' Storage=39,710 cf Inflow=33.85 cfs 2.006 af
15.0" Round Culvert n=0.013 L=47.0' S=0.0106 '/' Outflow=8.89 cfs 2.004 af

Pond 13P: (Rim @ 338.1) (DMH #2 to CB #8) Peak Elev=338.59' Inflow=21.47 cfs 3.249 af
Primary=18.48 cfs 3.183 af Secondary=8.84 cfs 0.066 af Outflow=21.47 cfs 3.249 af

Pond 14P: (Rim @ 337.1) (CB #8 to Main GW) Peak Elev=337.39' Inflow=95.99 cfs 8.457 af
Primary=92.55 cfs 8.439 af Secondary=4.01 cfs 0.018 af Outflow=95.99 cfs 8.457 af

Pond 15P: (Invert @ 328.1) (Yard Drain to Peak Elev=330.54' Storage=5,500 cf Inflow=14.84 cfs 1.244 af
Primary=9.30 cfs 1.130 af Secondary=7.17 cfs 0.113 af Outflow=15.10 cfs 1.243 af

Pond 16P: Main Gravel Wetland Peak Elev=330.03' Storage=208,430 cf Inflow=163.97 cfs 14.031 af
Primary=28.69 cfs 11.437 af Secondary=73.85 cfs 2.591 af Outflow=102.47 cfs 14.028 af

Pond 17P: (Rim @ 338.7) (CB #52 to DMH #2) Peak Elev=339.20' Inflow=21.47 cfs 3.249 af
Primary=20.56 cfs 3.183 af Secondary=9.15 cfs 0.066 af Outflow=21.47 cfs 3.249 af

Pond 18P: CB #70A Yard Drain Peak Elev=334.91' Storage=1,839 cf Inflow=3.26 cfs 0.170 af
Outflow=2.37 cfs 0.162 af

Pond 21P: (Rim @ 333.5) (CB#4 to CB#1) Peak Elev=330.49' Inflow=24.95 cfs 1.652 af
Outflow=24.95 cfs 1.652 af

Pond 33P: (Rim @ 333.8) (DMH #4 to CB #4) Peak Elev=331.63' Inflow=24.95 cfs 1.652 af
Primary=24.95 cfs 1.652 af Secondary=0.00 cfs 0.000 af Outflow=24.95 cfs 1.652 af

Pond CB1: (Rim @ 331.15) (CB#1 to GW) Peak Elev=330.29' Inflow=30.37 cfs 2.865 af
Primary=30.37 cfs 2.865 af Secondary=0.00 cfs 0.000 af Outflow=30.37 cfs 2.865 af

Link 1L: 42" inlet flow
Primary=0.00 cfs 0.000 af

Total Runoff Area = 62.933 ac Runoff Volume = 19.213 af Average Runoff Depth = 3.66"
66.43% Pervious = 41.804 ac 33.57% Impervious = 21.129 ac

Summary for Subcatchment DA_10: DA_10

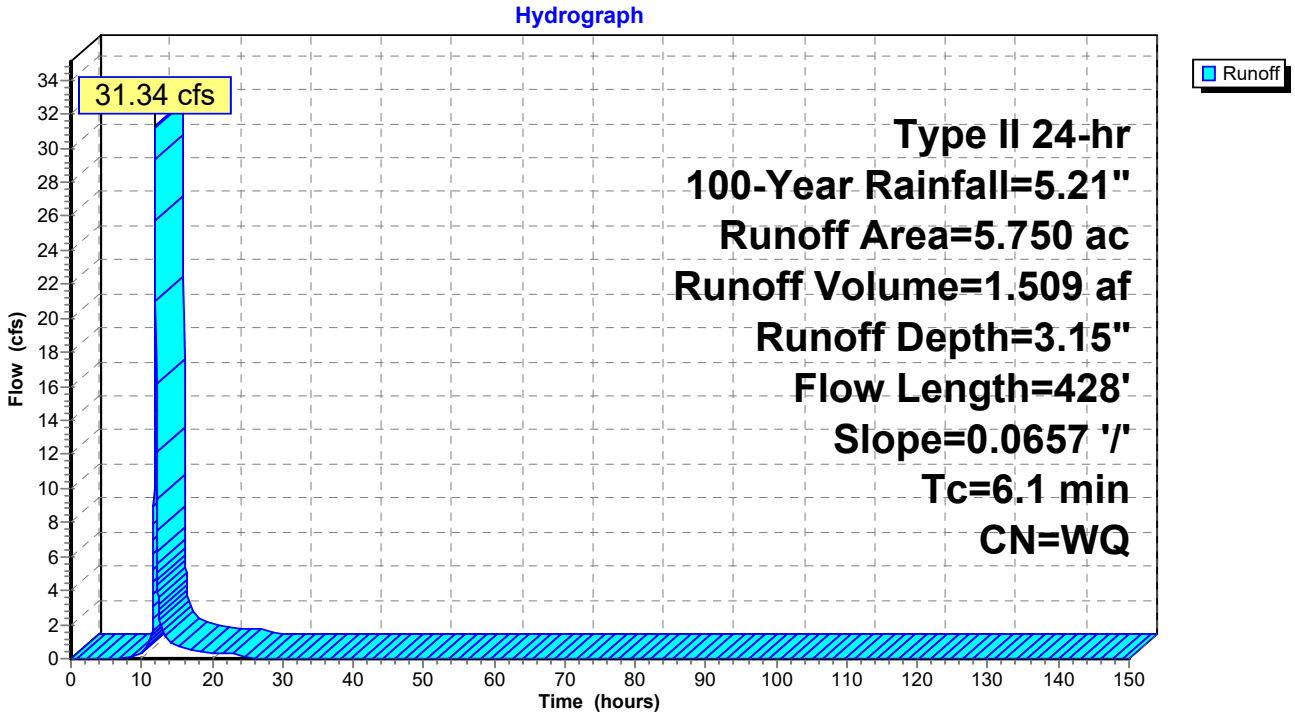
Runoff = 31.34 cfs @ 11.97 hrs, Volume= 1.509 af, Depth= 3.15"
Routed to Reach 50R : reach within Riggs Brook to outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
0.037	74	>75% Grass cover, Good, HSG C
0.130	70	Woods, Good, HSG C
5.295	80	>75% Grass cover, Good, HSG D
0.288	98	Paved Parking, HSG D
5.750		Weighted Average
5.462		94.99% Pervious Area
0.288		5.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	428	0.0657	1.17		**Lag/CN Method,** Contour Length= 16,445' Interval= 1'

Subcatchment DA_10: DA_10



Summary for Subcatchment DA_1A: DA_1A

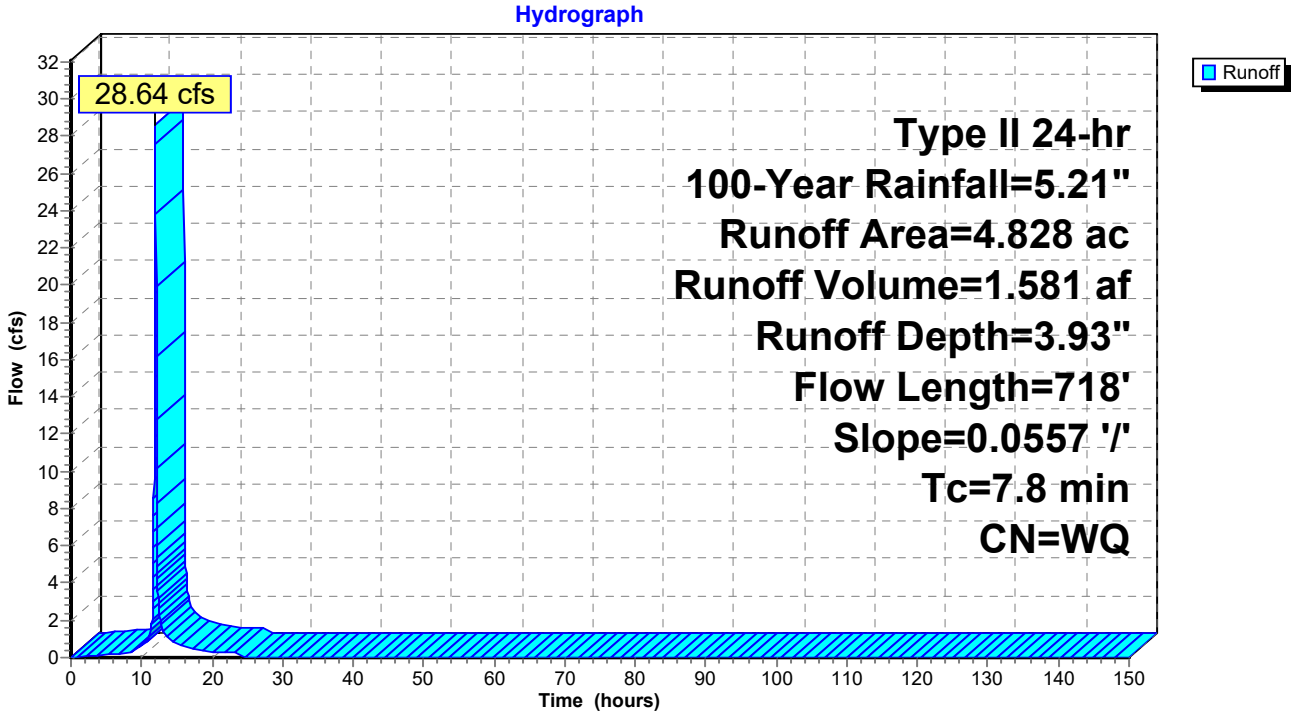
Runoff = 28.64 cfs @ 11.99 hrs, Volume= 1.581 af, Depth= 3.93"
Routed to Pond 10P : (Rim @ 351.5) (CB #46 to CB #43)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
2.659	80	>75% Grass cover, Good, HSG D
2.169	98	Paved Parking, HSG D
4.828		Weighted Average
2.659		55.08% Pervious Area
2.169		44.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	718	0.0557	1.52		**Lag/CN Method,** Contour Length= 11,715' Interval= 1'

Subcatchment DA_1A: DA_1A



Summary for Subcatchment DA_1B: DA_1B

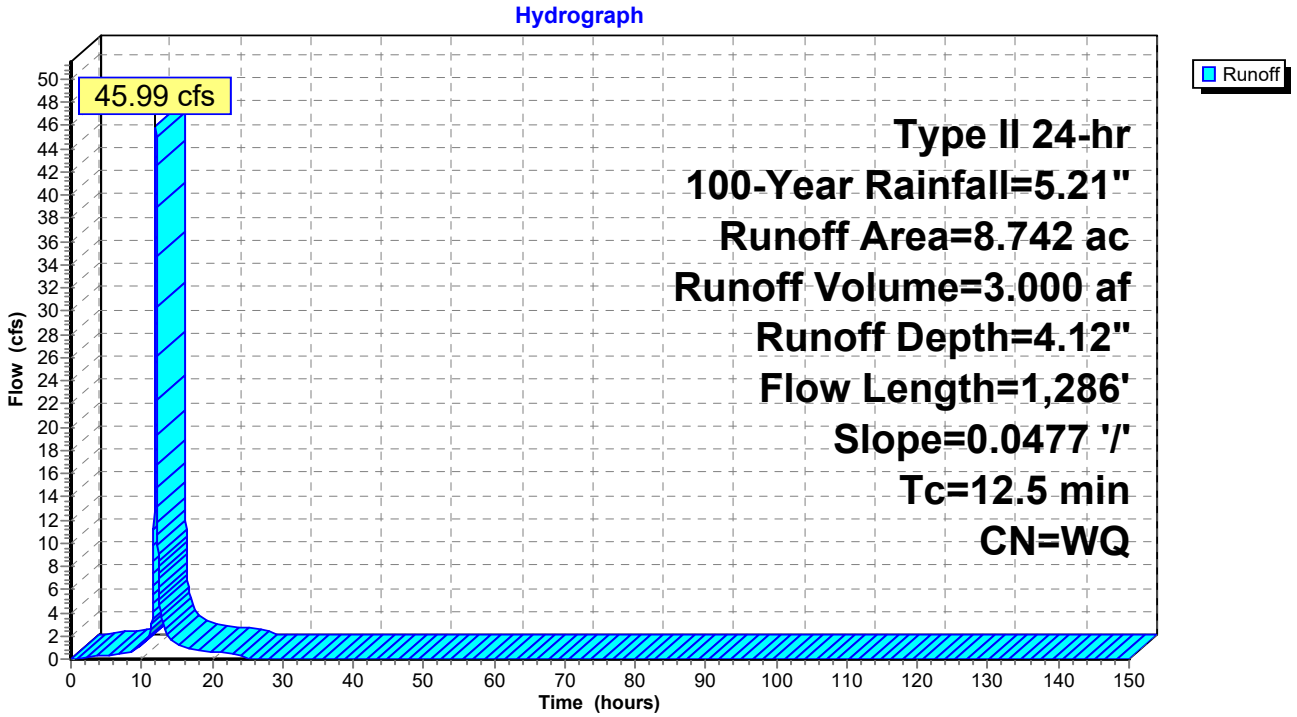
Runoff = 45.99 cfs @ 12.04 hrs, Volume= 3.000 af, Depth= 4.12"
Routed to Pond 11P : (Rim @ 345.05) (CB #43 to CB #8)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
3.938	80	>75% Grass cover, Good, HSG D
4.767	98	Paved Parking, HSG D
0.037	98	Water Surface, 0% imp, HSG D
8.742		Weighted Average
3.975		45.47% Pervious Area
4.767		54.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	1,286	0.0477	1.72		**Lag/CN Method,** Contour Length= 18,167' Interval= 1'

Subcatchment DA_1B: DA_1B



Summary for Subcatchment DA_1C: DA_1C

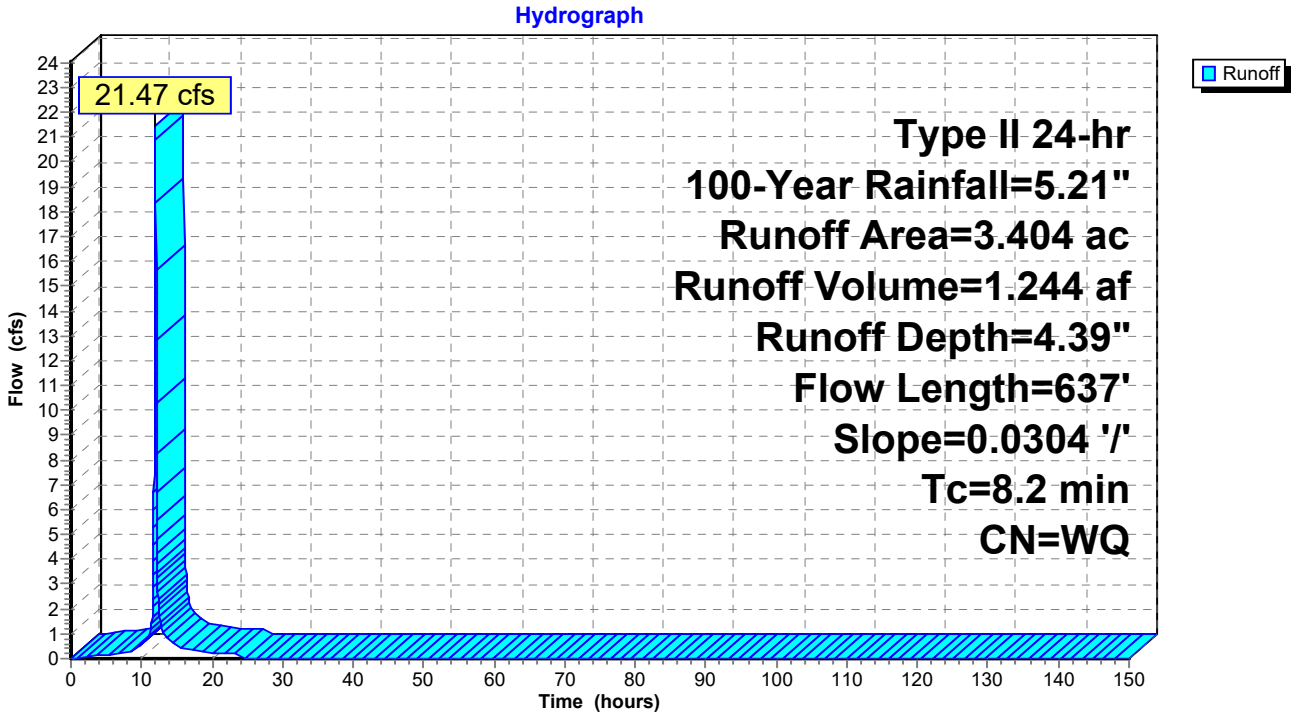
Runoff = 21.47 cfs @ 11.99 hrs, Volume= 1.244 af, Depth= 4.39"
Routed to Pond 17P : (Rim @ 338.7) (CB #52 to DMH #2)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
0.095	74	>75% Grass cover, Good, HSG C
0.466	98	Paved Parking, HSG C
0.928	80	>75% Grass cover, Good, HSG D
1.914	98	Paved Parking, HSG D
3.404		Weighted Average
1.023		30.07% Pervious Area
2.380		69.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	637	0.0304	1.30		**Lag/CN Method,** Contour Length= 4,511' Interval= 1'

Subcatchment DA_1C: DA_1C



Summary for Subcatchment DA_1D: DA_1D

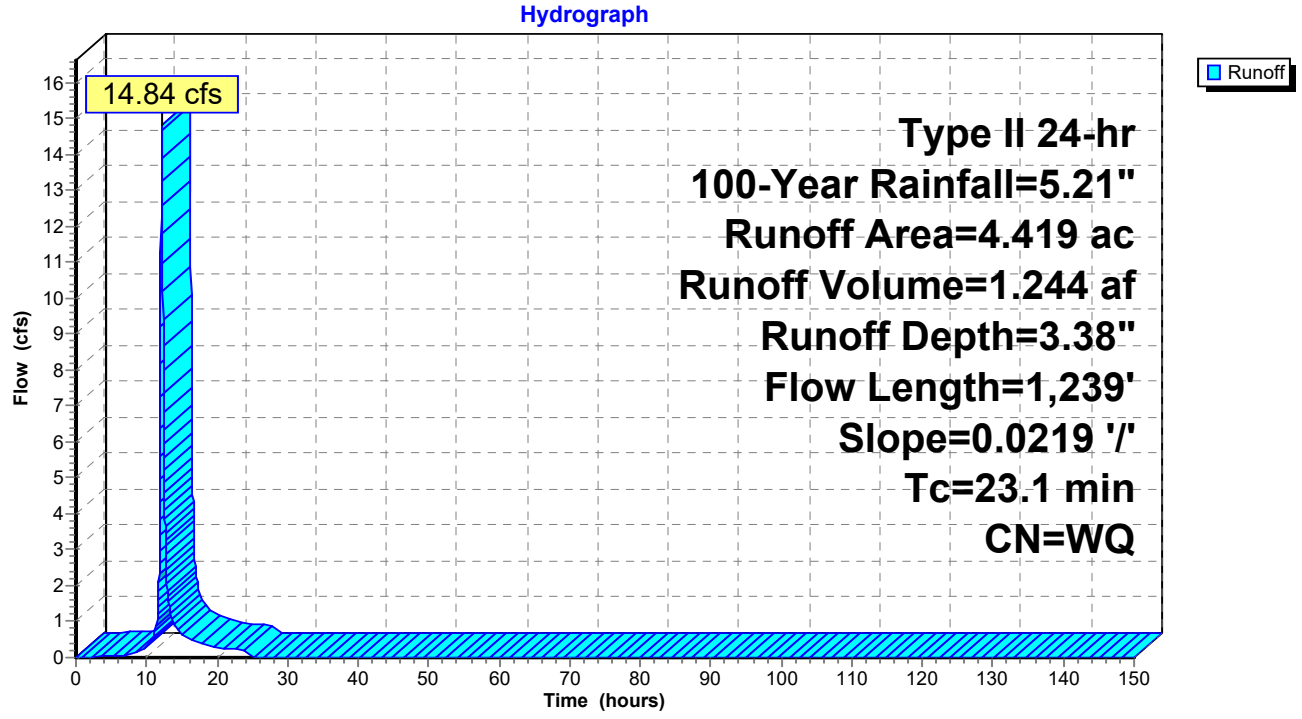
Runoff = 14.84 cfs @ 12.16 hrs, Volume= 1.244 af, Depth= 3.38"
Routed to Pond 15P : (Invert @ 328.1) (Yard Drain to CB #1)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
3.718	80	>75% Grass cover, Good, HSG D
0.701	98	Paved Parking, HSG D
4.419		Weighted Average
3.718		84.13% Pervious Area
0.701		15.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	1,239	0.0219	0.89		**Lag/CN Method,** Contour Length= 4,218' Interval= 1'

Subcatchment DA_1D: DA_1D



Summary for Subcatchment DA_1E: DA_1E

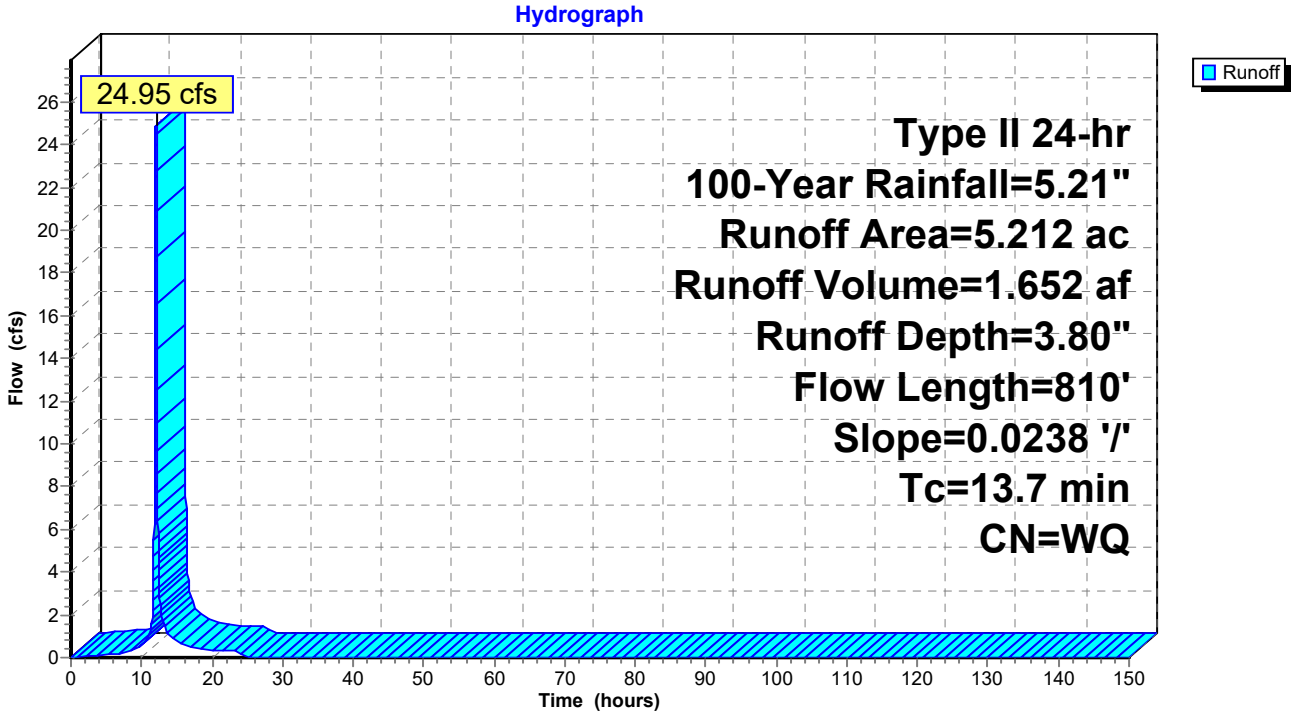
Runoff = 24.95 cfs @ 12.05 hrs, Volume= 1.652 af, Depth= 3.80"
Routed to Pond 33P : (Rim @ 333.8) (DMH #4 to CB #4)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
3.211	80	>75% Grass cover, Good, HSG D
2.000	98	Paved Parking, HSG D
5.212		Weighted Average
3.211		61.62% Pervious Area
2.000		38.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	810	0.0238	0.98		**Lag/CN Method,** Contour Length= 5,395' Interval= 1'

Subcatchment DA_1E: DA_1E



Summary for Subcatchment DA_1F: DA_1F

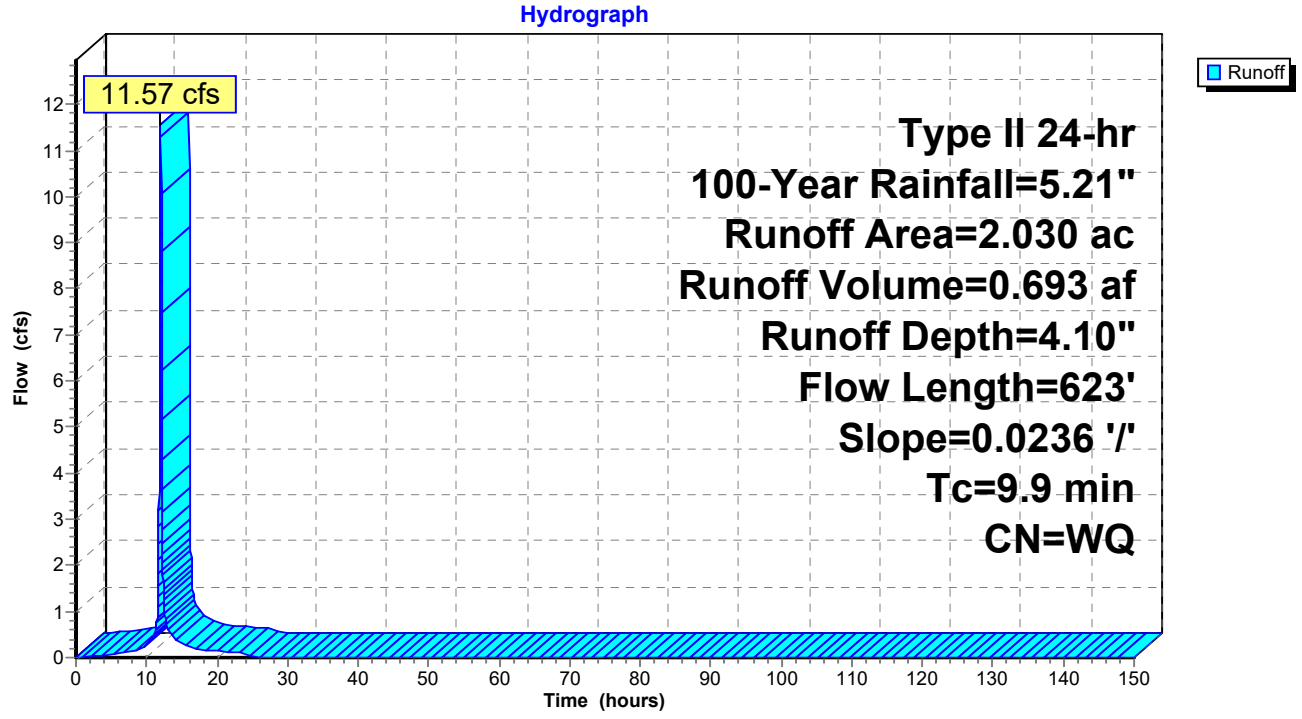
Runoff = 11.57 cfs @ 12.01 hrs, Volume= 0.693 af, Depth= 4.10"
Routed to Pond 14P : (Rim @ 337.1) (CB #8 to Main GW)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
0.938	80	>75% Grass cover, Good, HSG D
1.092	98	Paved Parking, HSG D
2.030		Weighted Average
0.938		46.20% Pervious Area
1.092		53.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	623	0.0236	1.04		**Lag/CN Method,** Contour Length= 2,085' Interval= 1'

Subcatchment DA_1F: DA_1F



Summary for Subcatchment DA_1G: DA_1G

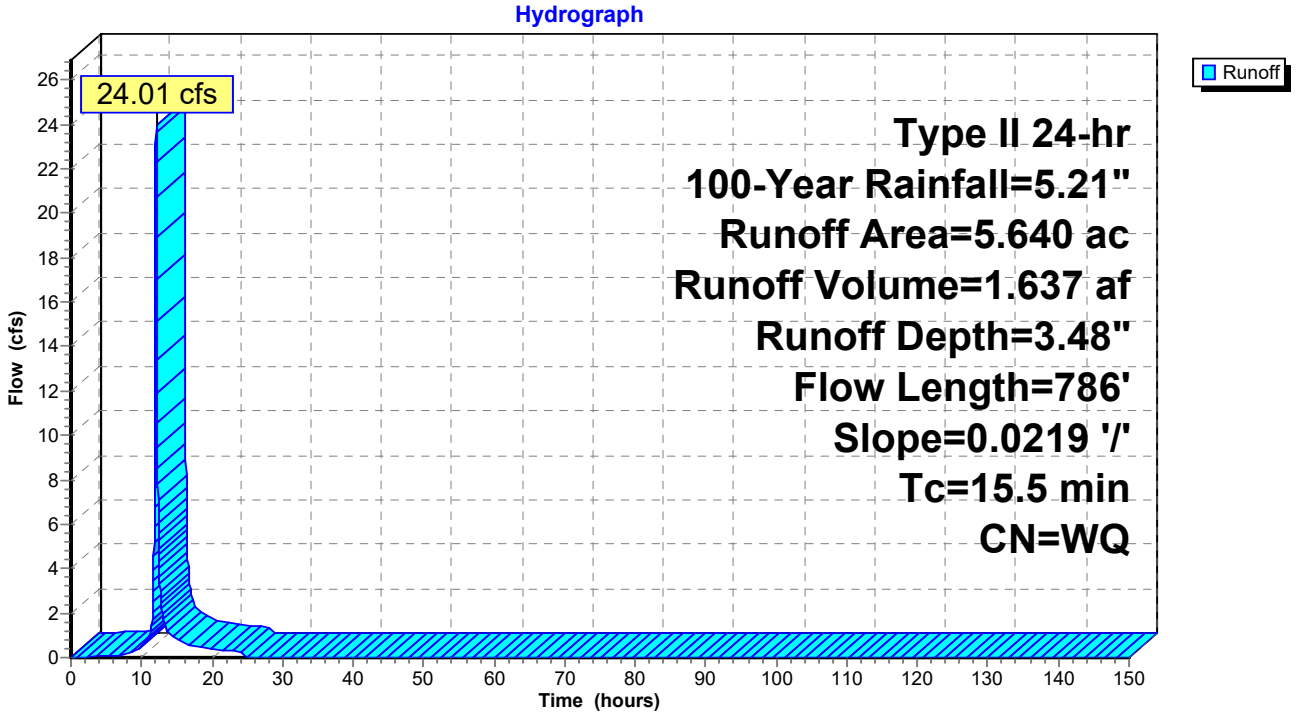
Runoff = 24.01 cfs @ 12.07 hrs, Volume= 1.637 af, Depth= 3.48"
Routed to Pond 16P : Main Gravel Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
4.430	80	>75% Grass cover, Good, HSG D
1.210	98	Paved Parking, HSG D
5.640		Weighted Average
4.430		78.54% Pervious Area
1.210		21.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	786	0.0219	0.84		**Lag/CN Method,** Contour Length= 5,380' Interval= 1'

Subcatchment DA_1G: DA_1G



Summary for Subcatchment DA_1H: DA_1H

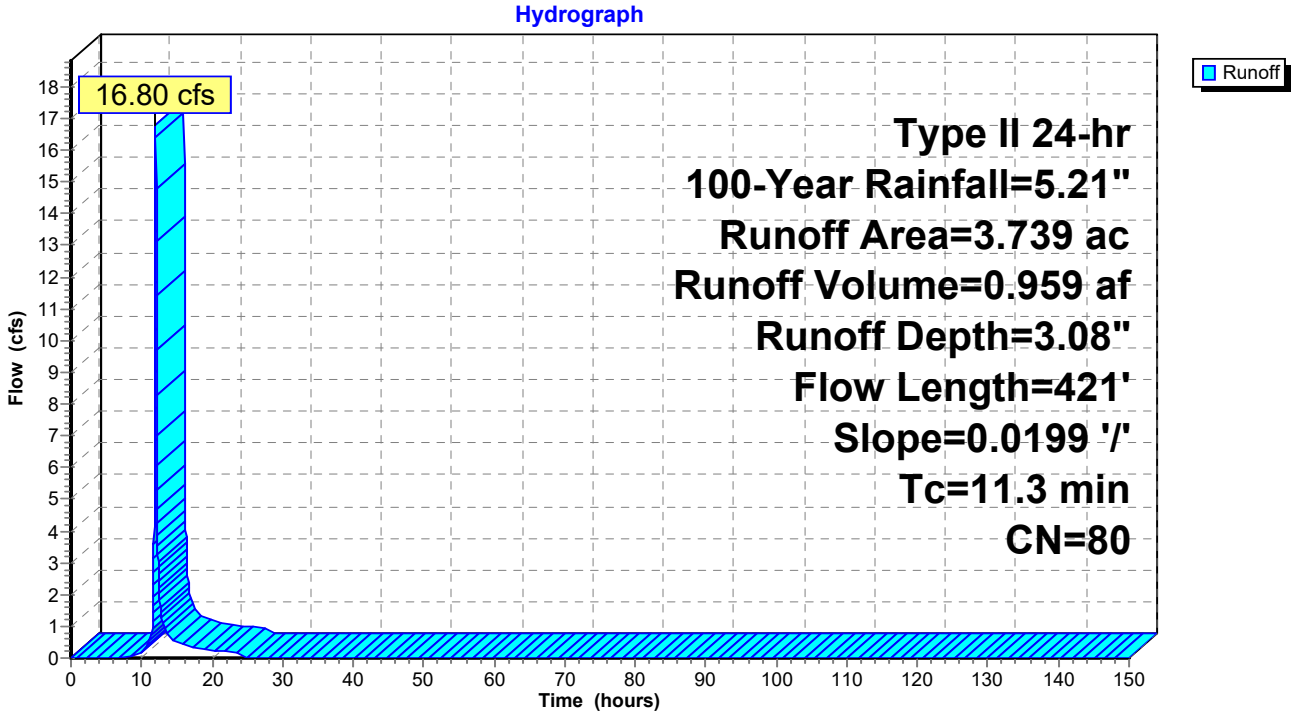
Runoff = 16.80 cfs @ 12.03 hrs, Volume= 0.959 af, Depth= 3.08"
Routed to Pond 16P : Main Gravel Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
3.739	80	>75% Grass cover, Good, HSG D
3.739		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	421	0.0199	0.62		**Lag/CN Method,** Contour Length= 3,246' Interval= 1'

Subcatchment DA_1H: DA_1H



Summary for Subcatchment DA_1J: DA_1J

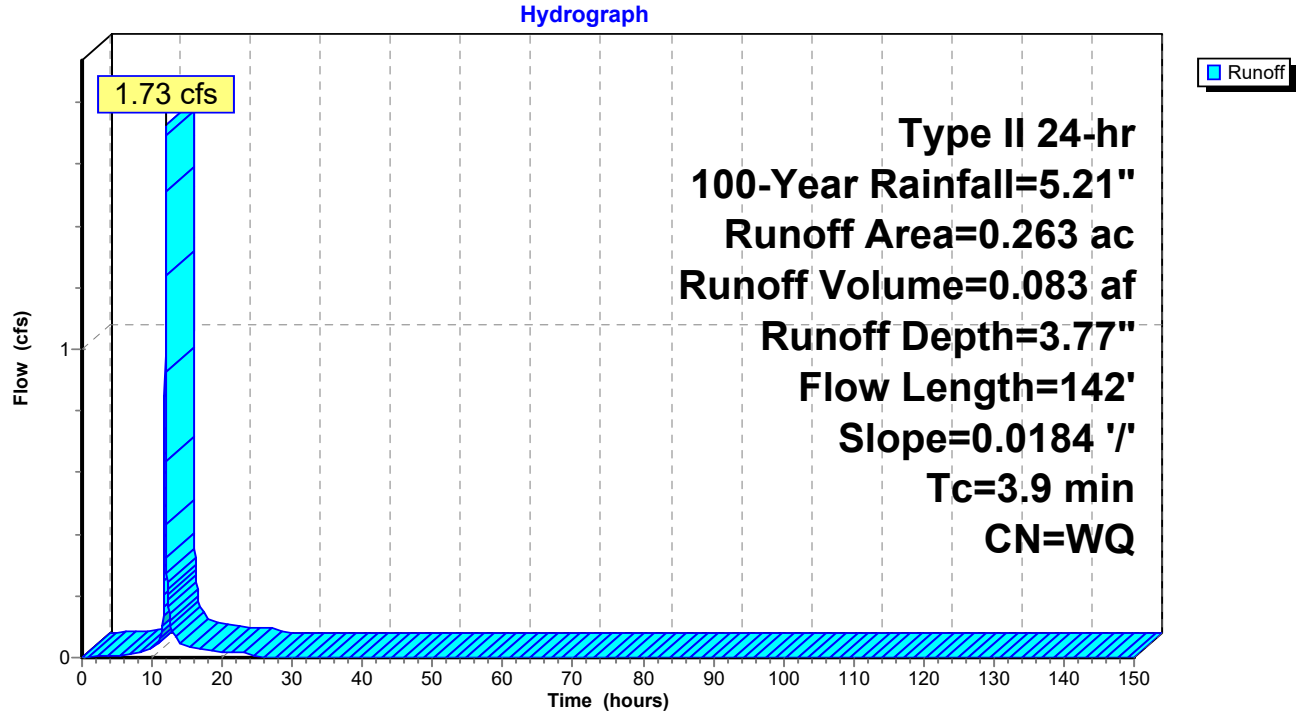
Runoff = 1.73 cfs @ 11.95 hrs, Volume= 0.083 af, Depth= 3.77"
Routed to Pond 1P : CB #6 Yard Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
0.167	80	>75% Grass cover, Good, HSG D
0.096	98	Paved Parking, HSG D
0.263		Weighted Average
0.167		63.50% Pervious Area
0.096		36.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	142	0.0184	0.61		**Lag/CN Method,** Contour Length= 211' Interval= 1'

Subcatchment DA_1J: DA_1J



Summary for Subcatchment DA_3: DA_3

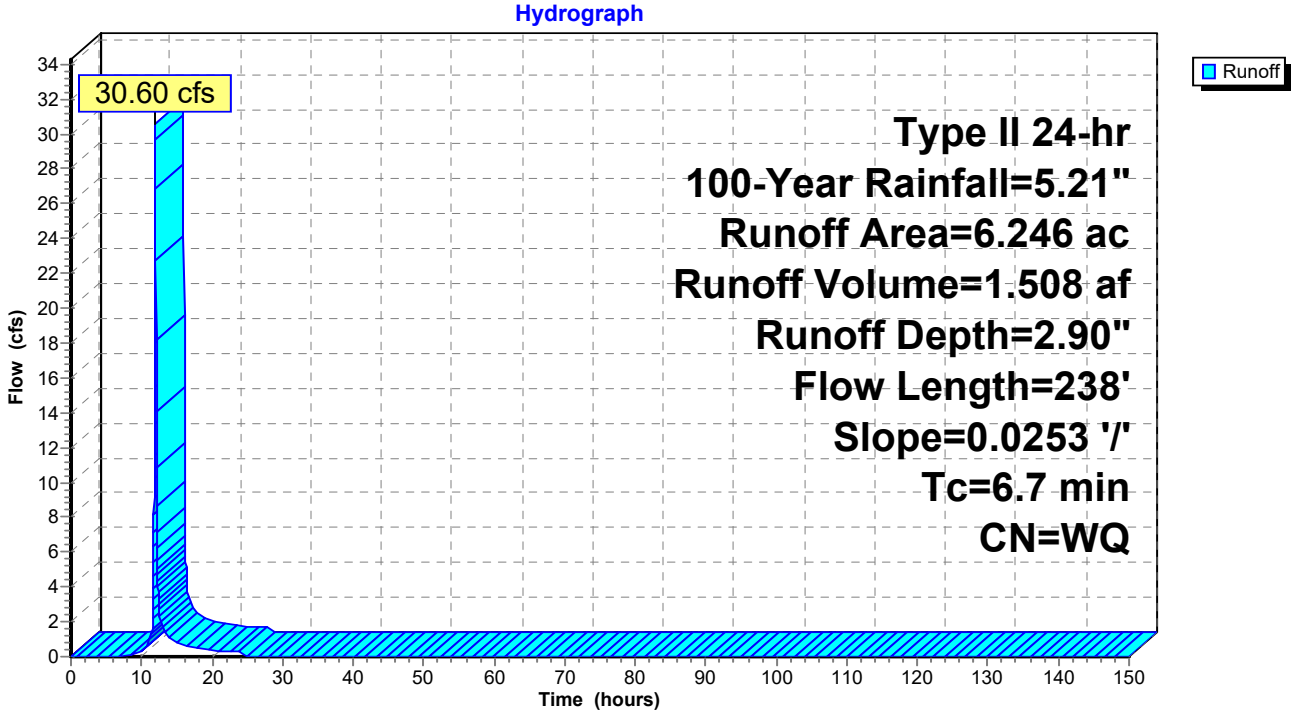
Runoff = 30.60 cfs @ 11.98 hrs, Volume= 1.508 af, Depth= 2.90"
Routed to Reach 16R : reach within Patrick Brook to outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
1.338	74	>75% Grass cover, Good, HSG C
0.163	98	Paved Parking, HSG C
1.149	70	Woods, Good, HSG C
2.297	80	>75% Grass cover, Good, HSG D
0.311	98	Paved Parking, HSG D
0.988	77	Woods, Good, HSG D
6.246		Weighted Average
5.773		92.42% Pervious Area
0.473		7.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	238	0.0253	0.59		**Lag/CN Method,** Contour Length= 6,886' Interval= 1'

Subcatchment DA_3: DA_3



Summary for Subcatchment DA_4: DA_4

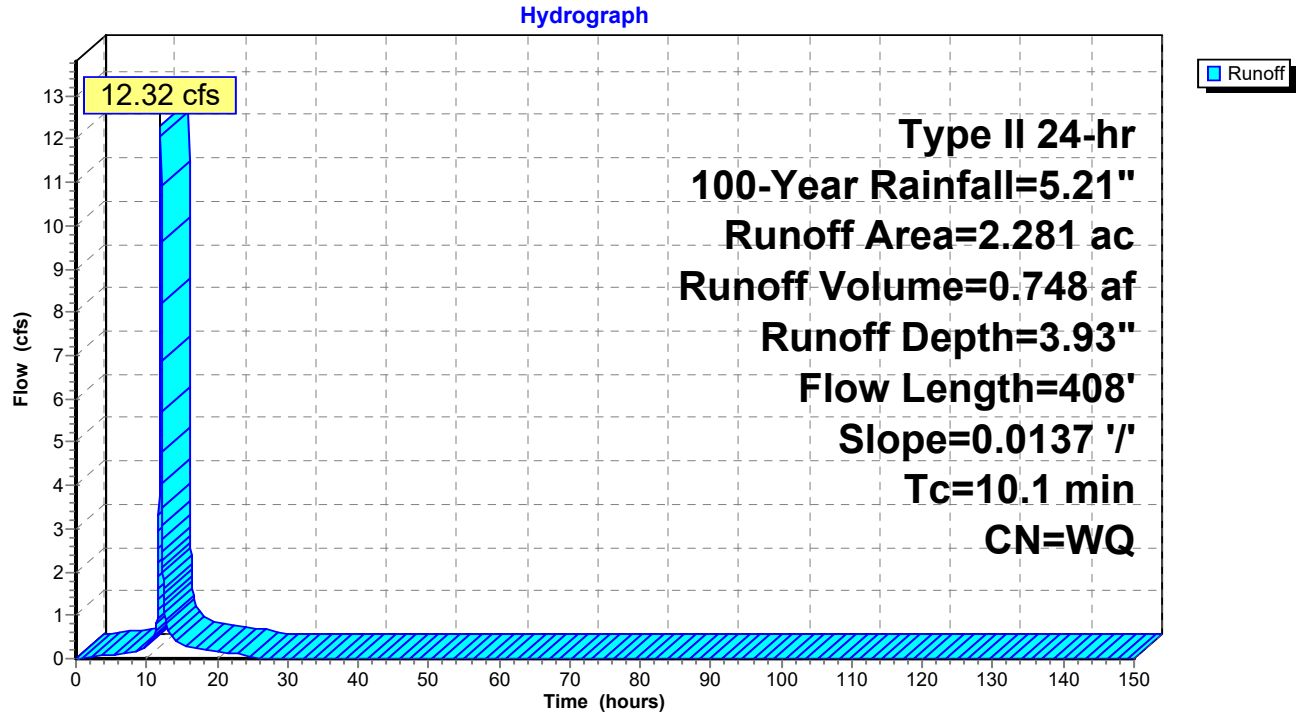
Runoff = 12.32 cfs @ 12.01 hrs, Volume= 0.748 af, Depth= 3.93"
Routed to Pond 4P : GW 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
0.866	74	>75% Grass cover, Good, HSG C
1.181	98	Paved Parking, HSG C
0.136	80	>75% Grass cover, Good, HSG D
0.099	98	Paved Parking, HSG D
2.281		Weighted Average
1.002		43.91% Pervious Area
1.280		56.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	408	0.0137	0.68		**Lag/CN Method,** Contour Length= 1,365' Interval= 1'

Subcatchment DA_4: DA_4



Summary for Subcatchment DA_4a: DA_4a

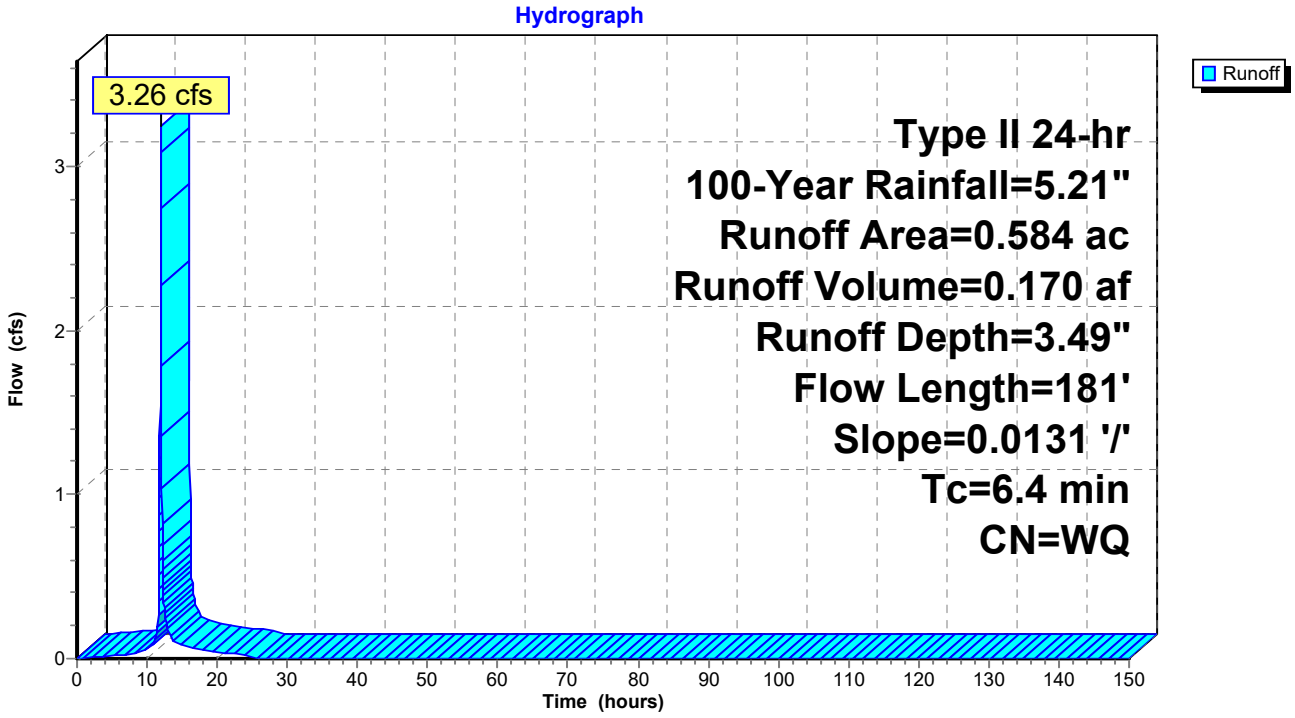
Runoff = 3.26 cfs @ 11.97 hrs, Volume= 0.170 af, Depth= 3.49"
Routed to Pond 18P : CB #70A Yard Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
0.345	74	>75% Grass cover, Good, HSG C
0.213	98	Paved Parking, HSG C
0.011	80	>75% Grass cover, Good, HSG D
0.015	98	Paved Parking, HSG D
0.584		Weighted Average
0.356		61.02% Pervious Area
0.228		38.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	181	0.0131	0.47		**Lag/CN Method,** Contour Length= 332' Interval= 1'

Subcatchment DA_4a: DA_4a



Summary for Subcatchment DA_5: DA_5

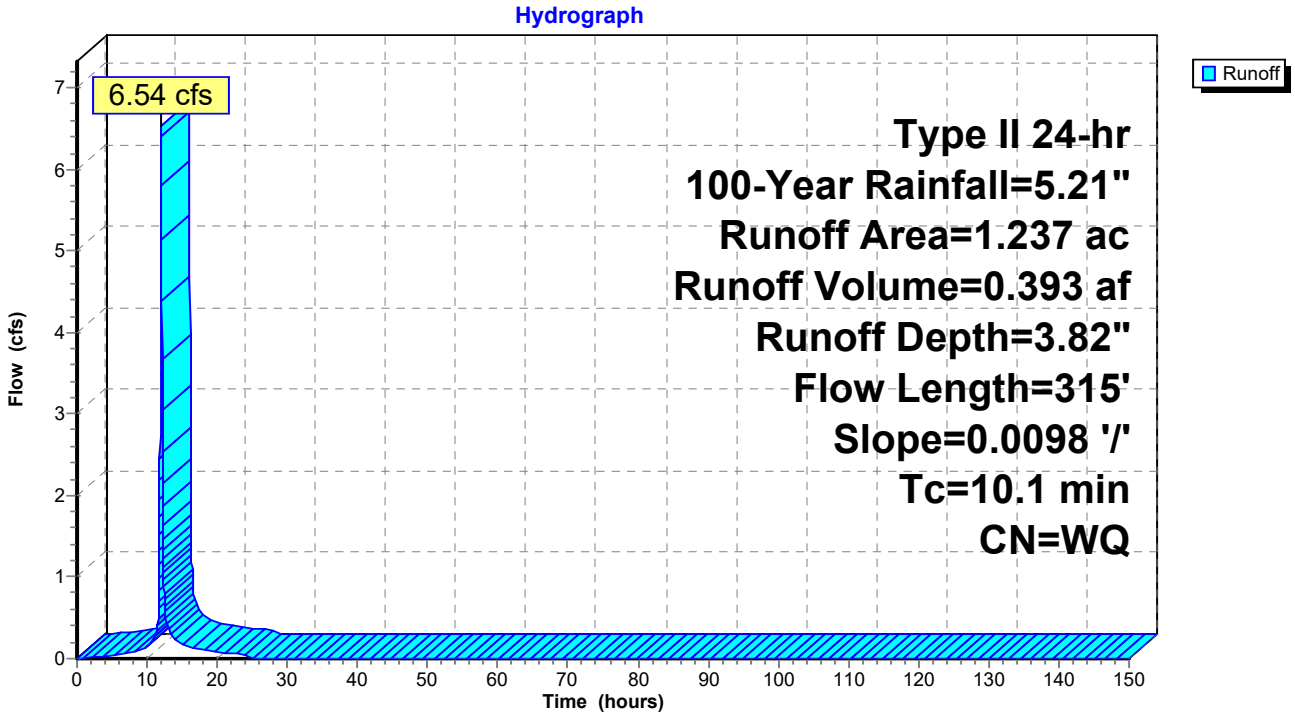
Runoff = 6.54 cfs @ 12.01 hrs, Volume= 0.393 af, Depth= 3.82"
Routed to Pond 5P : GW 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
0.451	74	>75% Grass cover, Good, HSG C
0.467	98	Paved Parking, HSG C
0.175	80	>75% Grass cover, Good, HSG D
0.144	98	Paved Parking, HSG D
1.237		Weighted Average
0.625		50.57% Pervious Area
0.611		49.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	315	0.0098	0.52		**Lag/CN Method,** Contour Length= 527' Interval= 1'

Subcatchment DA_5: DA_5



Summary for Subcatchment DA_6: DA_6

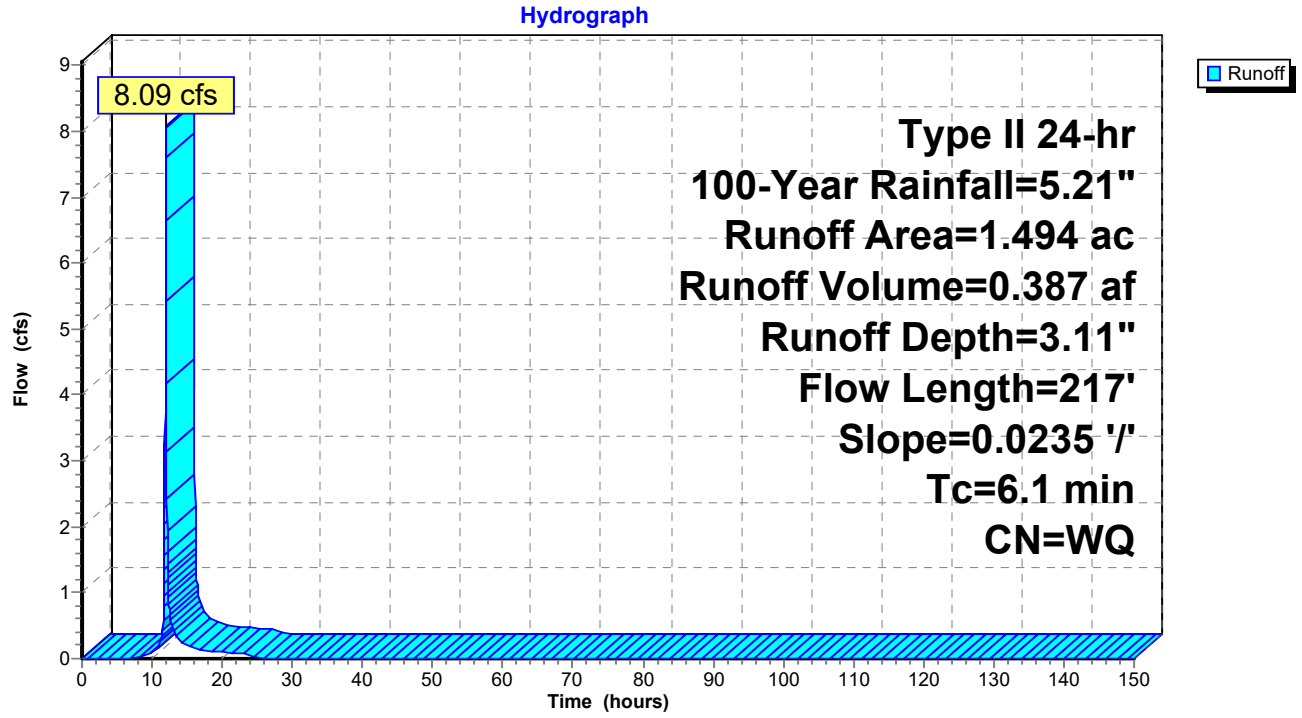
Runoff = 8.09 cfs @ 11.97 hrs, Volume= 0.387 af, Depth= 3.11"
Routed to Pond 2P : CB 8A

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
0.030	74	>75% Grass cover, Good, HSG C
0.006	98	Paved Parking, HSG C
1.431	80	>75% Grass cover, Good, HSG D
0.027	98	Paved Parking, HSG D
1.494		Weighted Average
1.461		97.81% Pervious Area
0.033		2.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	217	0.0235	0.59		**Lag/CN Method,** Contour Length= 1,531' Interval= 1'

Subcatchment DA_6: DA_6



Summary for Subcatchment DA_7: DA_7

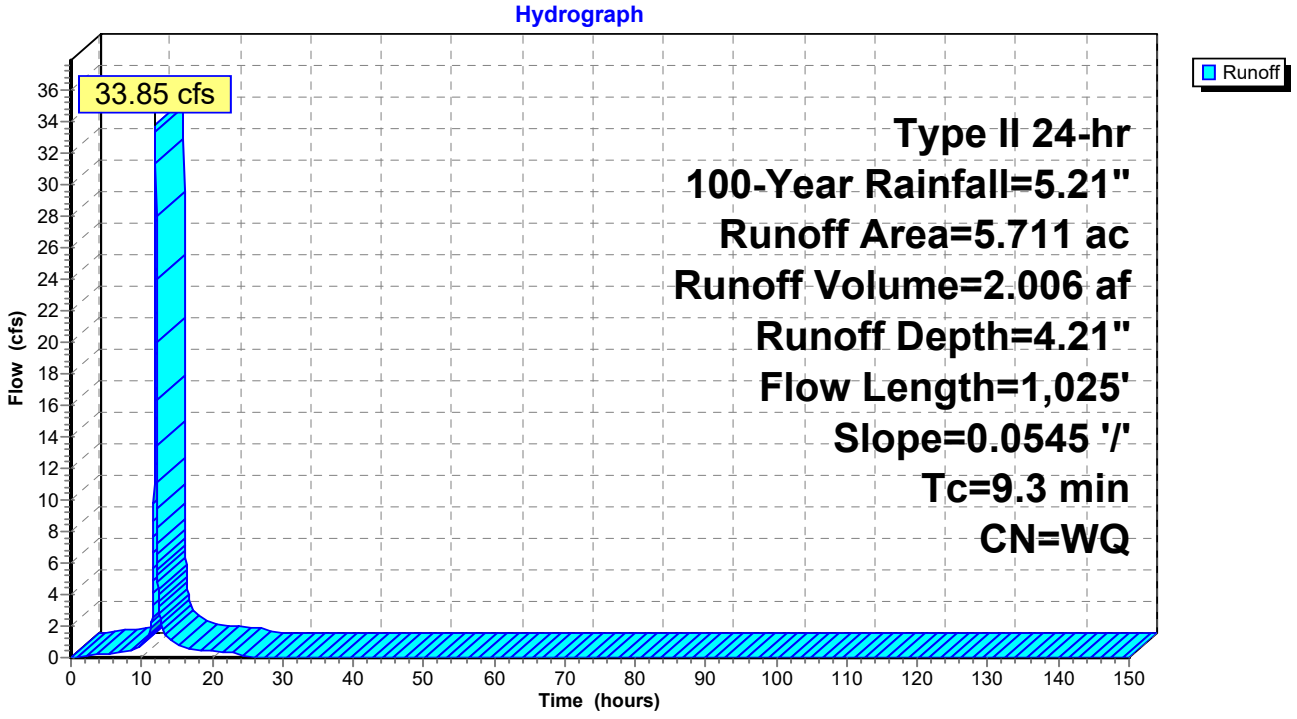
Runoff = 33.85 cfs @ 12.00 hrs, Volume= 2.006 af, Depth= 4.21"
Routed to Pond 12P : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
2.285	80	>75% Grass cover, Good, HSG D
3.427	98	Paved Parking, HSG D
5.711		Weighted Average
2.285		40.00% Pervious Area
3.427		60.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	1,025	0.0545	1.83		**Lag/CN Method,** Contour Length= 13,556' Interval= 1'

Subcatchment DA_7: DA_7



Summary for Subcatchment DA_8: DA_8

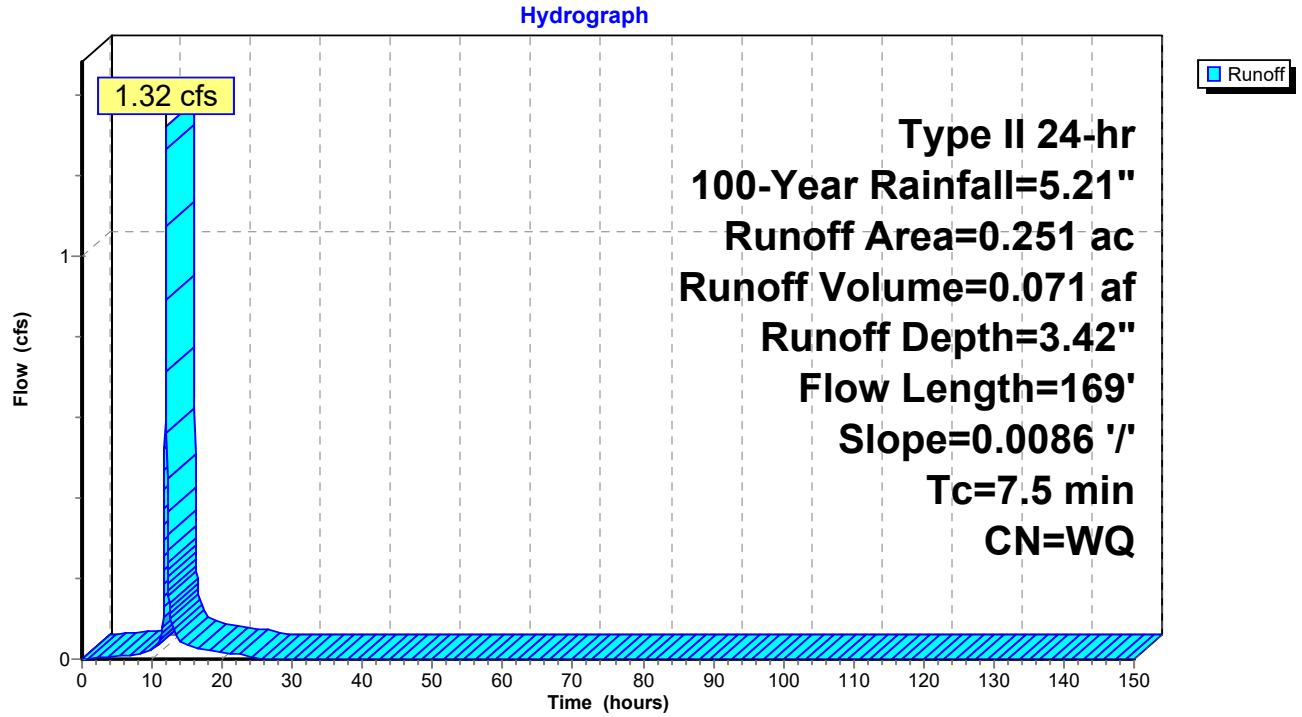
Runoff = 1.32 cfs @ 11.99 hrs, Volume= 0.071 af, Depth= 3.42"
Routed to Pond 3P : GW3

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
0.158	74	>75% Grass cover, Good, HSG C
0.091	98	Paved Parking, HSG C
0.001	70	Woods, Good, HSG C
0.251		Weighted Average
0.160		63.69% Pervious Area
0.091		36.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	169	0.0086	0.38		**Lag/CN Method,** Contour Length= 94' Interval= 1'

Subcatchment DA_8: DA_8



Summary for Subcatchment DA_9: DA_9

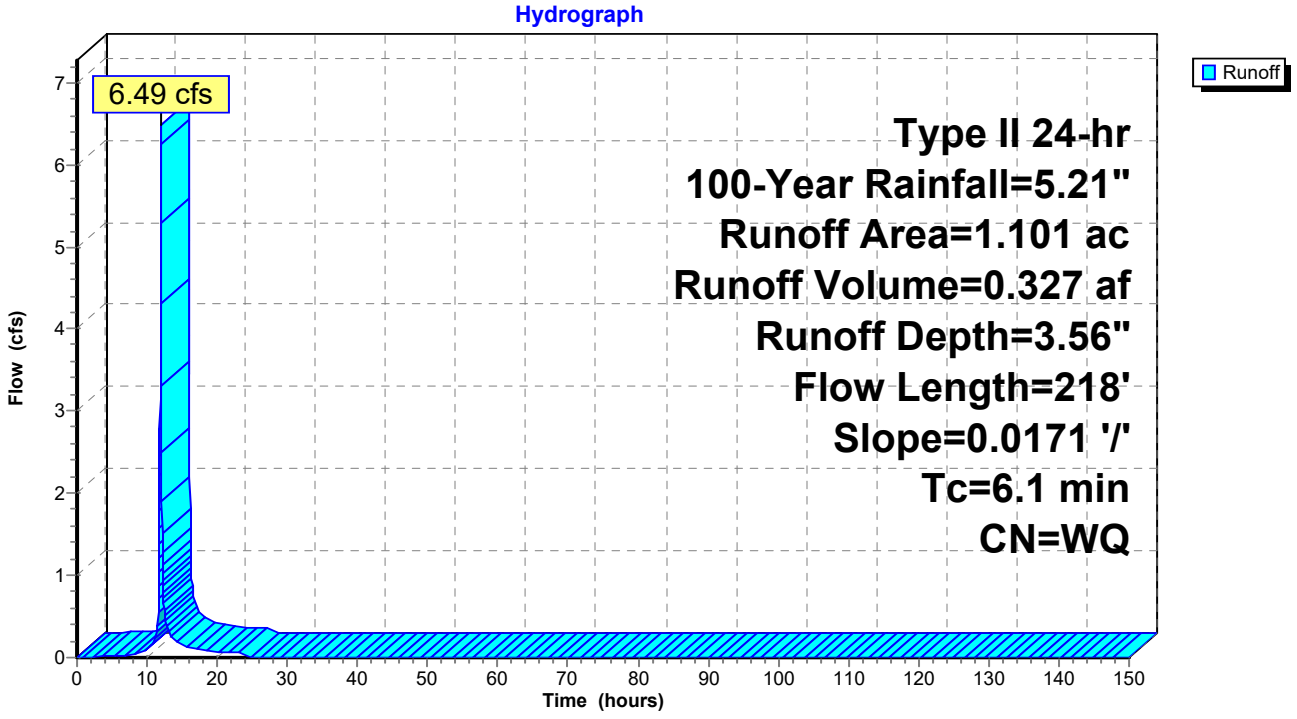
Runoff = 6.49 cfs @ 11.97 hrs, Volume= 0.327 af, Depth= 3.56"
Routed to Pond 6P : GW 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Type II 24-hr 100-Year Rainfall=5.21"

Area (ac)	CN	Description
0.820	80	>75% Grass cover, Good, HSG D
0.282	98	Paved Parking, HSG D
1.101		Weighted Average
0.820		74.43% Pervious Area
0.282		25.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	218	0.0171	0.60		**Lag/CN Method,** Contour Length= 822' Interval= 1'

Subcatchment DA_9: DA_9



Summary for Reach 5R: Overflow Path

Inflow = 7.17 cfs @ 12.19 hrs, Volume= 0.113 af
Outflow = 6.97 cfs @ 12.19 hrs, Volume= 0.113 af, Atten= 3%, Lag= 0.0 min
Routed to Pond 16P : Main Gravel Wetland

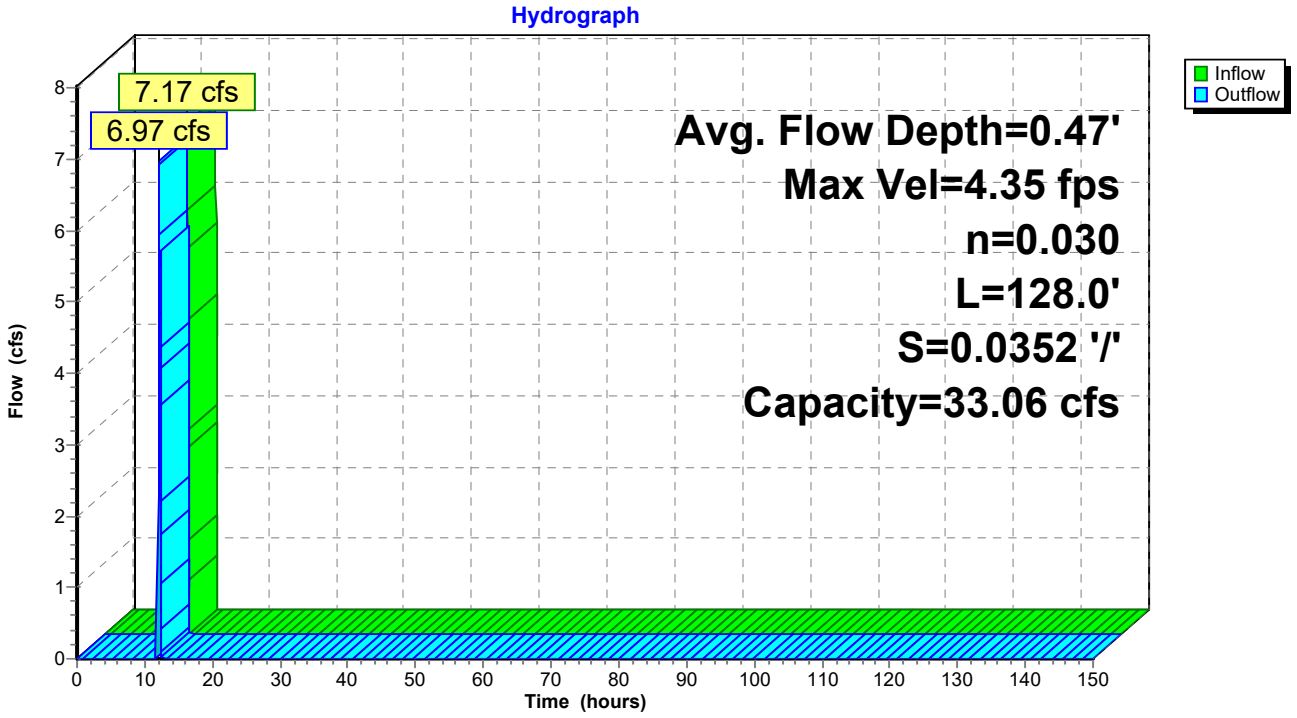
Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 4.35 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.70 fps, Avg. Travel Time= 1.3 min

Peak Storage= 205 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.47' , Surface Width= 4.82'
Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 33.06 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 8.00'
Length= 128.0' Slope= 0.0352 '/'
Inlet Invert= 330.00', Outlet Invert= 325.50'

‡

Reach 5R: Overflow Path



Summary for Reach 6R: Plunge pool to stream

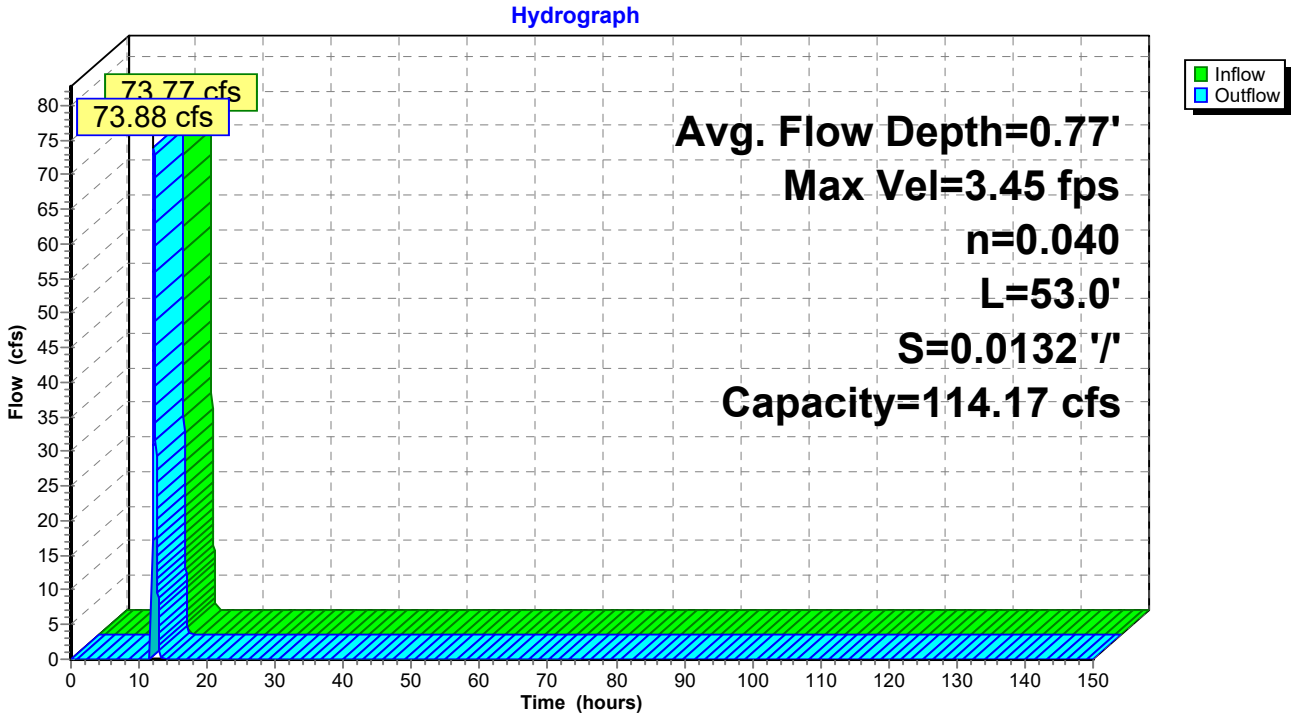
Inflow = 73.77 cfs @ 12.17 hrs, Volume= 2.591 af
Outflow = 73.88 cfs @ 12.17 hrs, Volume= 2.591 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 50R : reach within Riggs Brook to outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.45 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.37 fps, Avg. Travel Time= 0.6 min

Peak Storage= 1,136 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.77' , Surface Width= 28.00'
Bank-Full Depth= 1.00' Flow Area= 28.0 sf, Capacity= 114.17 cfs

28.00' x 1.00' deep channel, n= 0.040
Length= 53.0' Slope= 0.0132 '/'
Inlet Invert= 326.70', Outlet Invert= 326.00'

Reach 6R: Plunge pool to stream



Summary for Reach 16R: reach within Patrick Brook to outlet

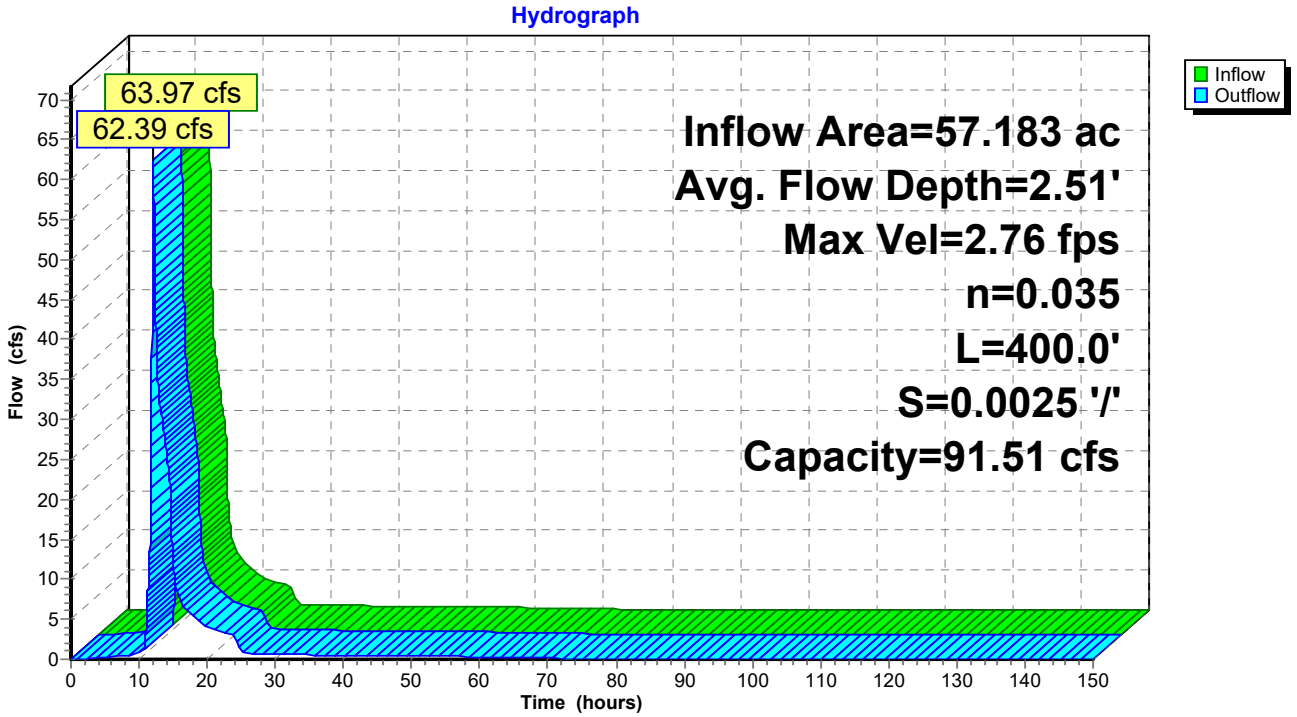
Inflow Area = 57.183 ac, 36.45% Impervious, Inflow Depth = 3.16" for 100-Year event
Inflow = 63.97 cfs @ 12.00 hrs, Volume= 15.056 af
Outflow = 62.39 cfs @ 12.04 hrs, Volume= 15.056 af, Atten= 2%, Lag= 2.1 min
Routed to Pond 8P : S/N 002 Patrick Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.76 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 14.0 min

Peak Storage= 9,031 cf @ 12.04 hrs
Average Depth at Peak Storage= 2.51' , Surface Width= 14.02'
Bank-Full Depth= 3.00' Flow Area= 30.0 sf, Capacity= 91.51 cfs

4.00' x 3.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 400.0' Slope= 0.0025 '/'
Inlet Invert= 324.00', Outlet Invert= 323.00'

Reach 16R: reach within Patrick Brook to outlet



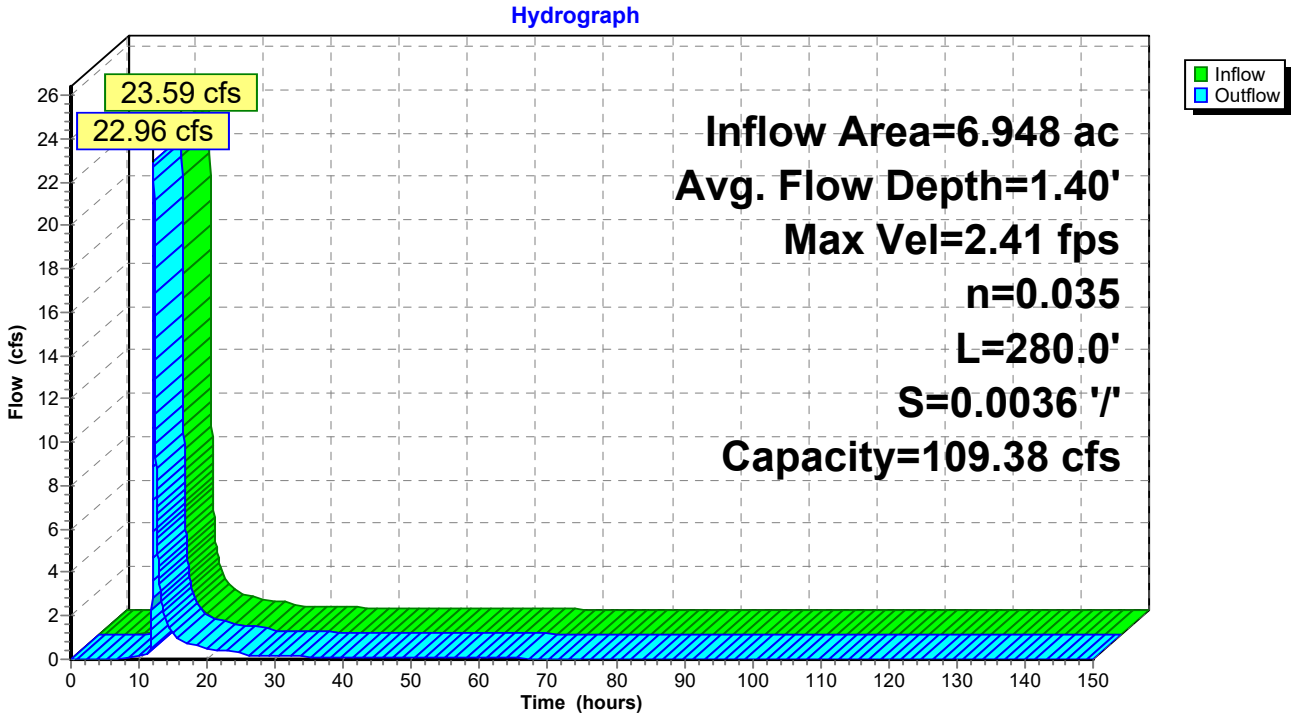
Summary for Reach 22R: reach within Patrick Brook

Inflow Area = 6.948 ac, 36.32% Impervious, Inflow Depth = 3.65" for 100-Year event
Inflow = 23.59 cfs @ 12.11 hrs, Volume= 2.110 af
Outflow = 22.96 cfs @ 12.14 hrs, Volume= 2.110 af, Atten= 3%, Lag= 1.8 min
Routed to Reach 16R : reach within Patrick Brook to outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.41 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.34 fps, Avg. Travel Time= 13.6 min

Peak Storage= 2,664 cf @ 12.14 hrs
Average Depth at Peak Storage= 1.40' , Surface Width= 9.60'
Bank-Full Depth= 3.00' Flow Area= 30.0 sf, Capacity= 109.38 cfs

4.00' x 3.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 280.0' Slope= 0.0036 '/'
Inlet Invert= 325.00', Outlet Invert= 324.00'



Summary for Reach 24R: reach within Patrick Brook

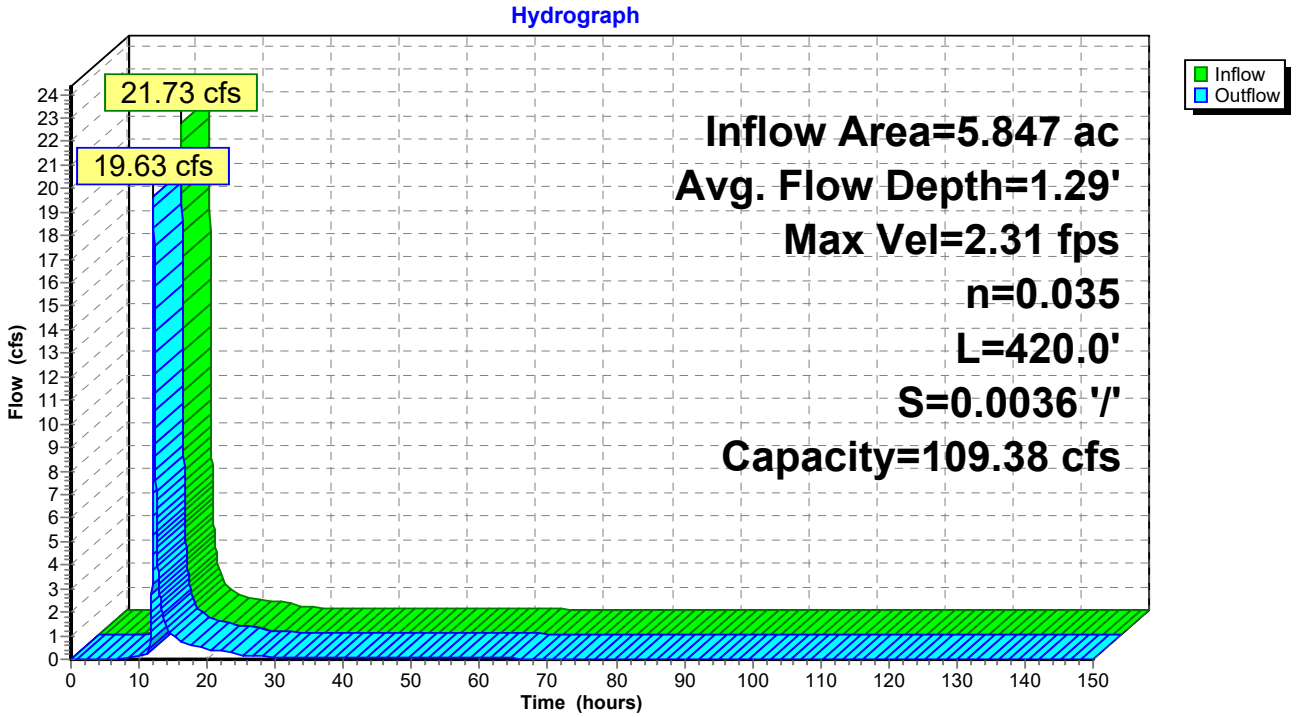
Inflow Area = 5.847 ac, 38.35% Impervious, Inflow Depth = 3.66" for 100-Year event
Inflow = 21.73 cfs @ 12.08 hrs, Volume= 1.784 af
Outflow = 19.63 cfs @ 12.13 hrs, Volume= 1.784 af, Atten= 10%, Lag= 2.8 min
Routed to Reach 22R : reach within Patrick Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.31 fps, Min. Travel Time= 3.0 min
Avg. Velocity = 0.33 fps, Avg. Travel Time= 21.1 min

Peak Storage= 3,567 cf @ 12.13 hrs
Average Depth at Peak Storage= 1.29' , Surface Width= 9.16'
Bank-Full Depth= 3.00' Flow Area= 30.0 sf, Capacity= 109.38 cfs

4.00' x 3.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 420.0' Slope= 0.0036 '/'
Inlet Invert= 326.50', Outlet Invert= 325.00'

Reach 24R: reach within Patrick Brook



Summary for Reach 25R: reach within Patrick Brook

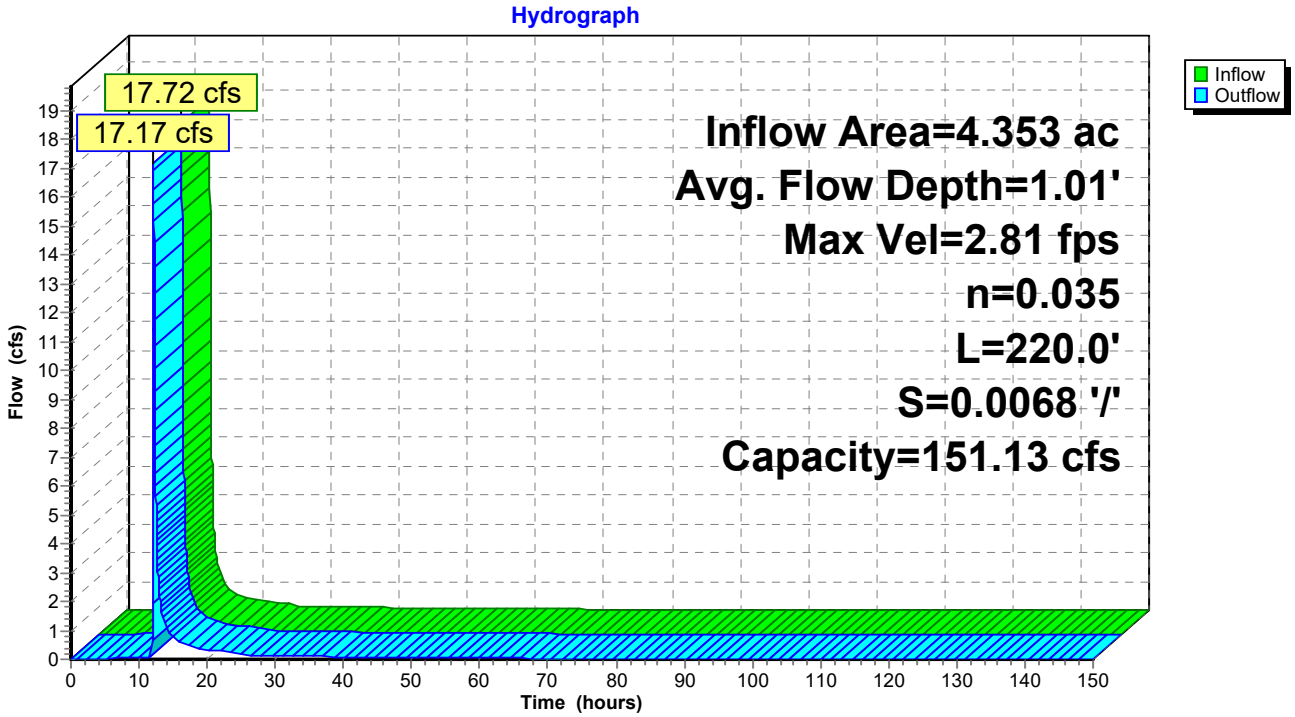
Inflow Area = 4.353 ac, 50.76% Impervious, Inflow Depth = 3.85" for 100-Year event
Inflow = 17.72 cfs @ 12.07 hrs, Volume= 1.397 af
Outflow = 17.17 cfs @ 12.09 hrs, Volume= 1.397 af, Atten= 3%, Lag= 1.4 min
Routed to Reach 24R : reach within Patrick Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.81 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 0.42 fps, Avg. Travel Time= 8.8 min

Peak Storage= 1,346 cf @ 12.09 hrs
Average Depth at Peak Storage= 1.01' , Surface Width= 8.06'
Bank-Full Depth= 3.00' Flow Area= 30.0 sf, Capacity= 151.13 cfs

4.00' x 3.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 220.0' Slope= 0.0068 '/'
Inlet Invert= 328.00', Outlet Invert= 326.50'

Reach 25R: reach within Patrick Brook



Summary for Reach 26R: reach within Patrick Brook

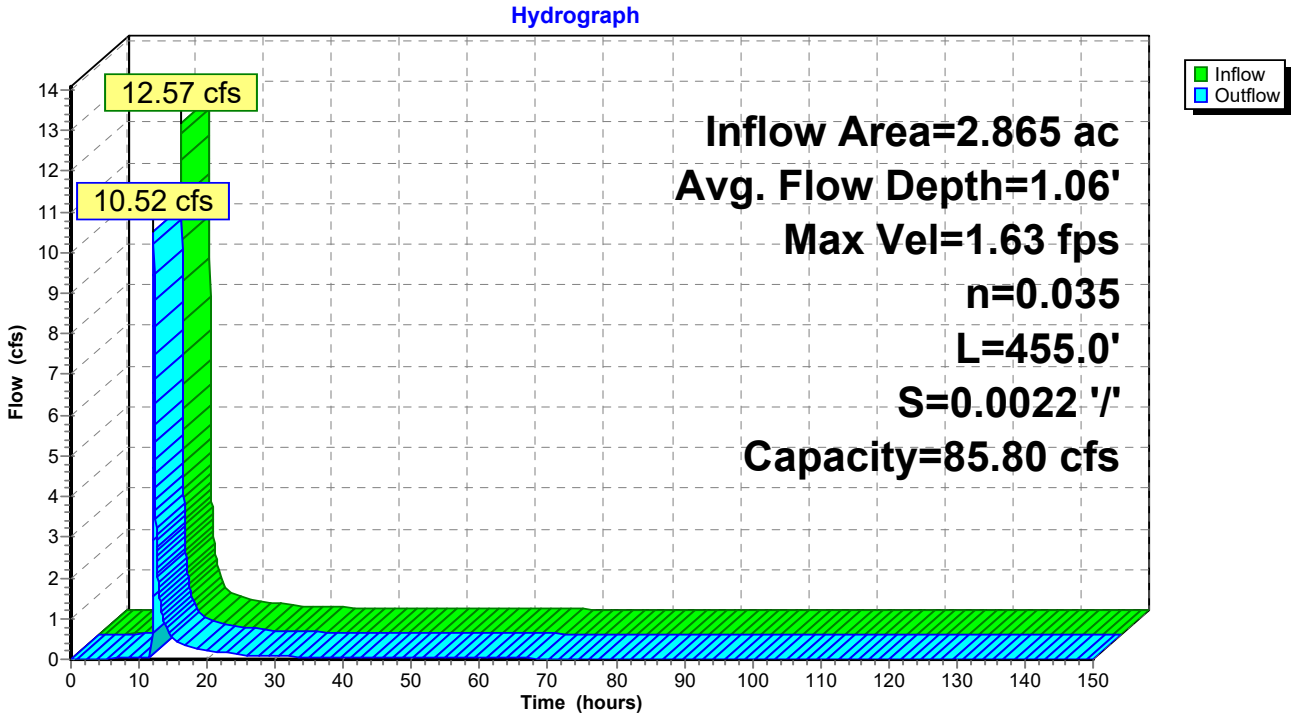
Inflow Area = 2.865 ac, 52.60% Impervious, Inflow Depth = 3.81" for 100-Year event
Inflow = 12.57 cfs @ 12.08 hrs, Volume= 0.909 af
Outflow = 10.52 cfs @ 12.15 hrs, Volume= 0.909 af, Atten= 16%, Lag= 3.8 min
Routed to Reach 25R : reach within Patrick Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 1.63 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.25 fps, Avg. Travel Time= 30.8 min

Peak Storage= 2,938 cf @ 12.15 hrs
Average Depth at Peak Storage= 1.06' , Surface Width= 8.23'
Bank-Full Depth= 3.00' Flow Area= 30.0 sf, Capacity= 85.80 cfs

4.00' x 3.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 455.0' Slope= 0.0022 '/'
Inlet Invert= 329.00', Outlet Invert= 328.00'

Reach 26R: reach within Patrick Brook



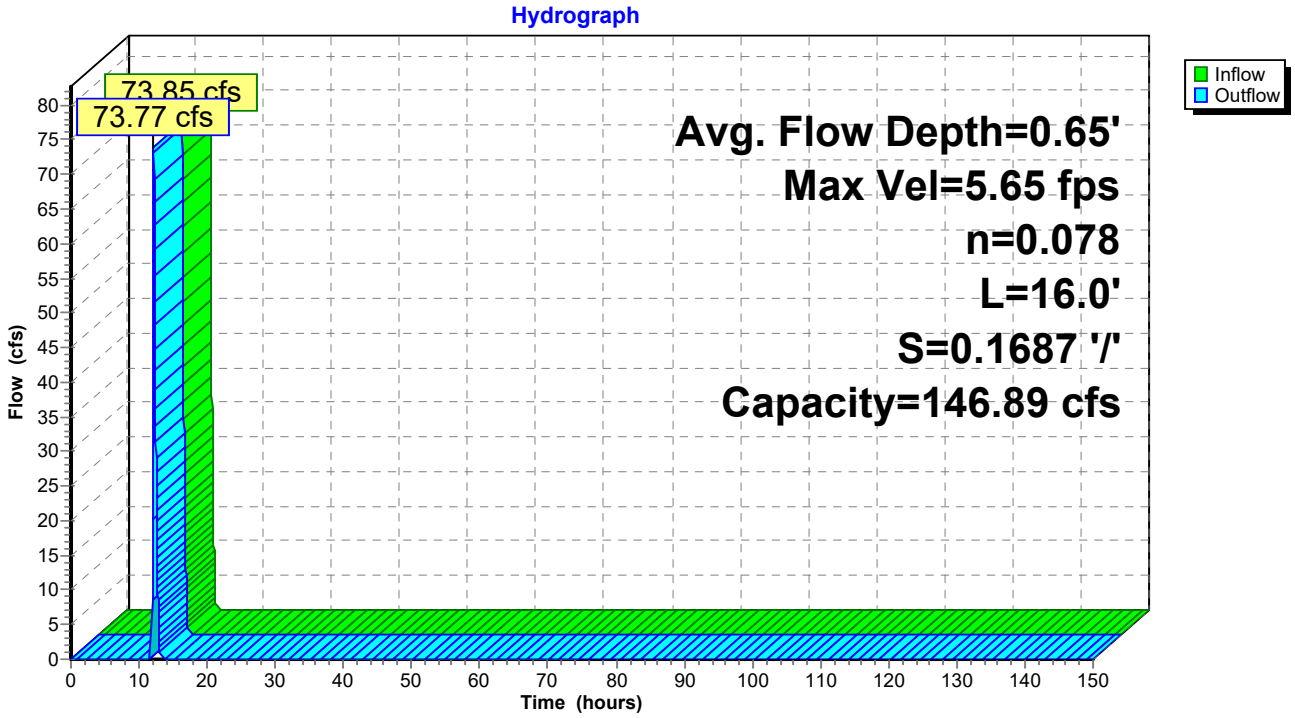
Summary for Reach 28R: emergency spillway

Inflow = 73.85 cfs @ 12.16 hrs, Volume= 2.591 af
Outflow = 73.77 cfs @ 12.17 hrs, Volume= 2.591 af, Atten= 0%, Lag= 0.2 min
Routed to Reach 6R : Plunge pool to stream

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 5.65 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.14 fps, Avg. Travel Time= 0.1 min

Peak Storage= 209 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.65' , Surface Width= 20.00'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 146.89 cfs

20.00' x 1.00' deep channel, n= 0.078 Riprap, 12-inch
Length= 16.0' Slope= 0.1687 '/'
Inlet Invert= 328.70', Outlet Invert= 326.00'



Summary for Reach 35R: Channel from Level Spreader to Brook

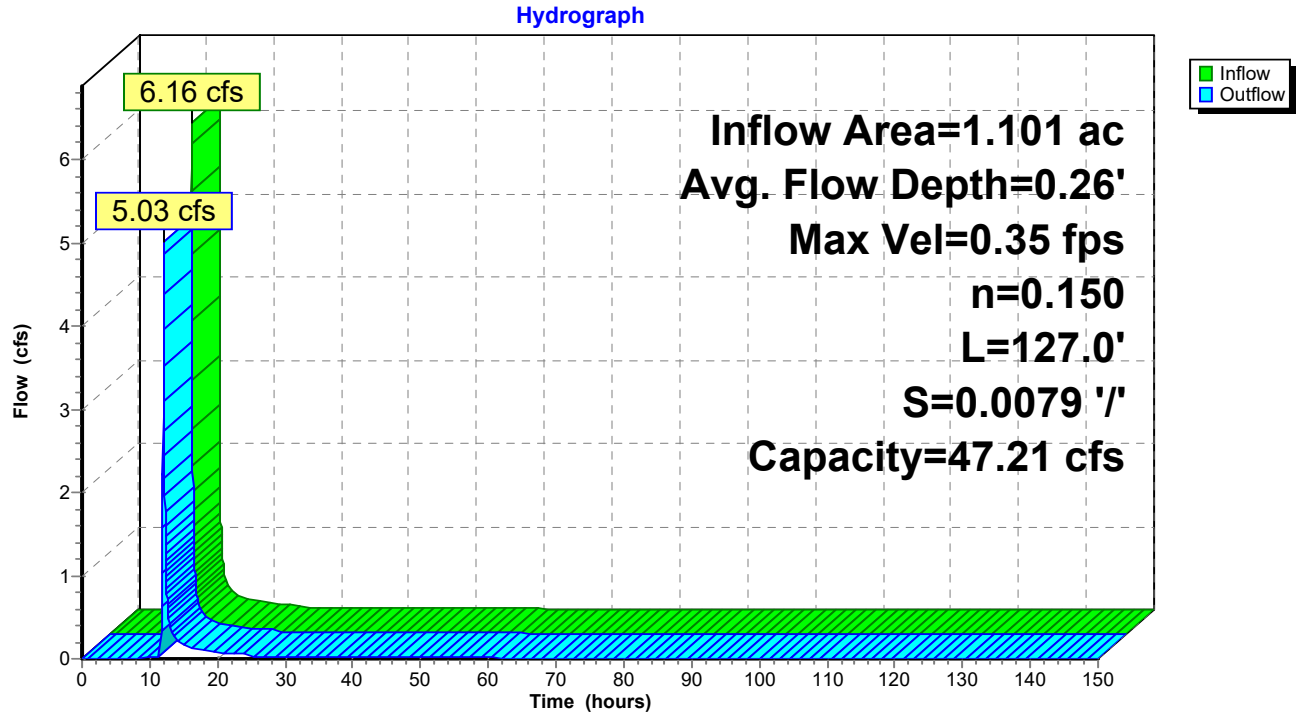
Inflow Area = 1.101 ac, 25.57% Impervious, Inflow Depth = 3.56" for 100-Year event
Inflow = 6.16 cfs @ 12.00 hrs, Volume= 0.326 af
Outflow = 5.03 cfs @ 12.05 hrs, Volume= 0.326 af, Atten= 18%, Lag= 3.2 min
Routed to Reach 22R : reach within Patrick Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.35 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.04 fps, Avg. Travel Time= 47.2 min

Peak Storage= 1,803 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.26' , Surface Width= 55.00'
Bank-Full Depth= 1.00' Flow Area= 55.0 sf, Capacity= 47.21 cfs

55.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Length= 127.0' Slope= 0.0079 '/'
Inlet Invert= 326.00', Outlet Invert= 325.00'

Reach 35R: Channel from Level Spreader to Brook



Summary for Reach 39R: Channel from Level Spreader to Brook

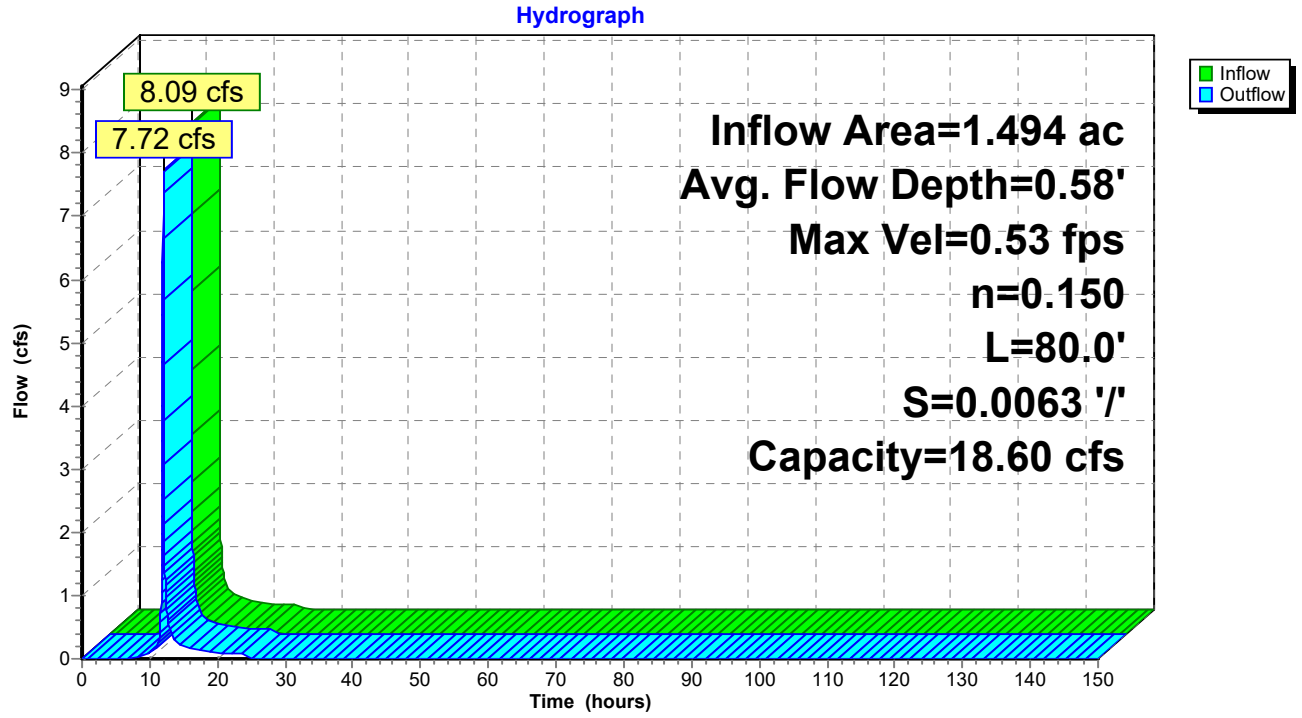
Inflow Area = 1.494 ac, 2.19% Impervious, Inflow Depth = 3.11" for 100-Year event
Inflow = 8.09 cfs @ 11.97 hrs, Volume= 0.387 af
Outflow = 7.72 cfs @ 12.00 hrs, Volume= 0.387 af, Atten= 5%, Lag= 1.4 min
Routed to Reach 24R : reach within Patrick Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.53 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.08 fps, Avg. Travel Time= 16.2 min

Peak Storage= 1,166 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.58' , Surface Width= 25.00'
Bank-Full Depth= 1.00' Flow Area= 25.0 sf, Capacity= 18.60 cfs

25.00' x 1.00' deep channel, n= 0.150
Length= 80.0' Slope= 0.0063 '/'
Inlet Invert= 327.00', Outlet Invert= 326.50'

Reach 39R: Channel from Level Spreader to Brook



Summary for Reach 41R: Channel from Level Spreader to Brook

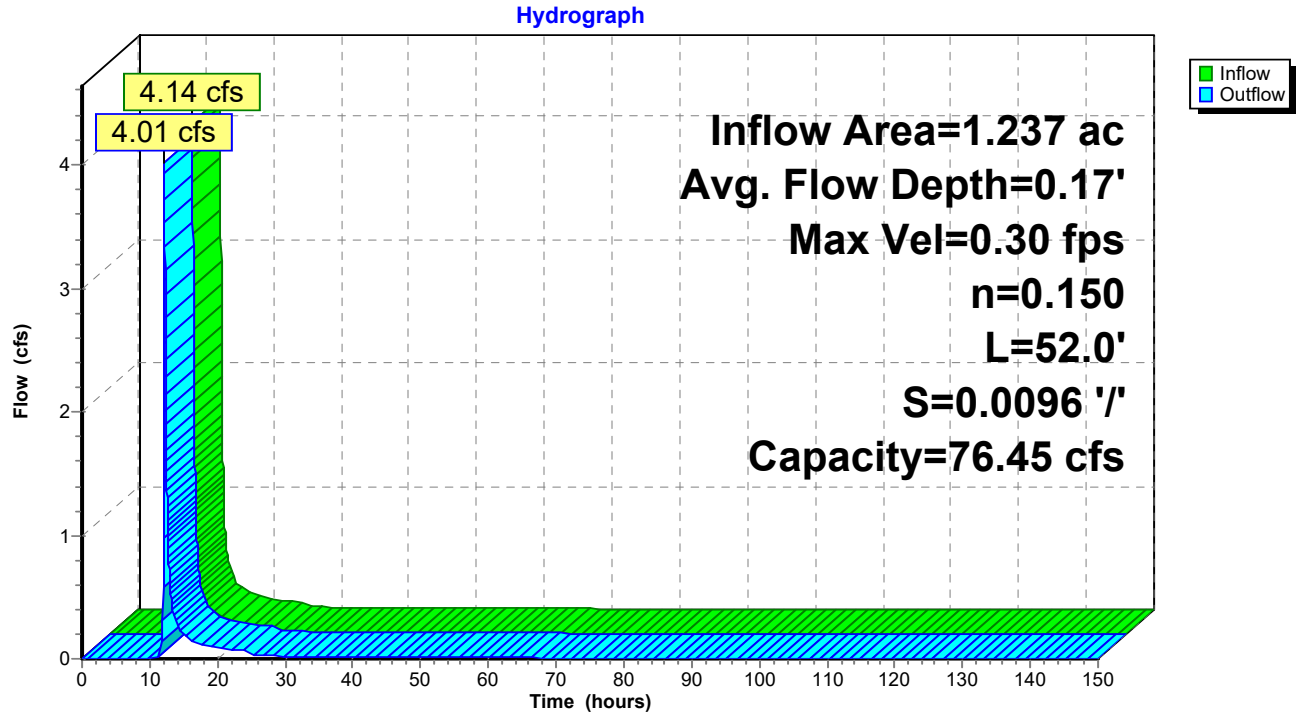
Inflow Area = 1.237 ac, 49.43% Impervious, Inflow Depth = 3.40" for 100-Year event
Inflow = 4.14 cfs @ 12.11 hrs, Volume= 0.351 af
Outflow = 4.01 cfs @ 12.14 hrs, Volume= 0.351 af, Atten= 3%, Lag= 2.1 min
Routed to Reach 25R : reach within Patrick Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.30 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.05 fps, Avg. Travel Time= 16.7 min

Peak Storage= 704 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.17' , Surface Width= 80.00'
Bank-Full Depth= 1.00' Flow Area= 80.0 sf, Capacity= 76.45 cfs

80.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Length= 52.0' Slope= 0.0096 '/'
Inlet Invert= 328.50', Outlet Invert= 328.00'

Reach 41R: Channel from Level Spreader to Brook



Summary for Reach 43R: Channel from Level Spreader to Brook

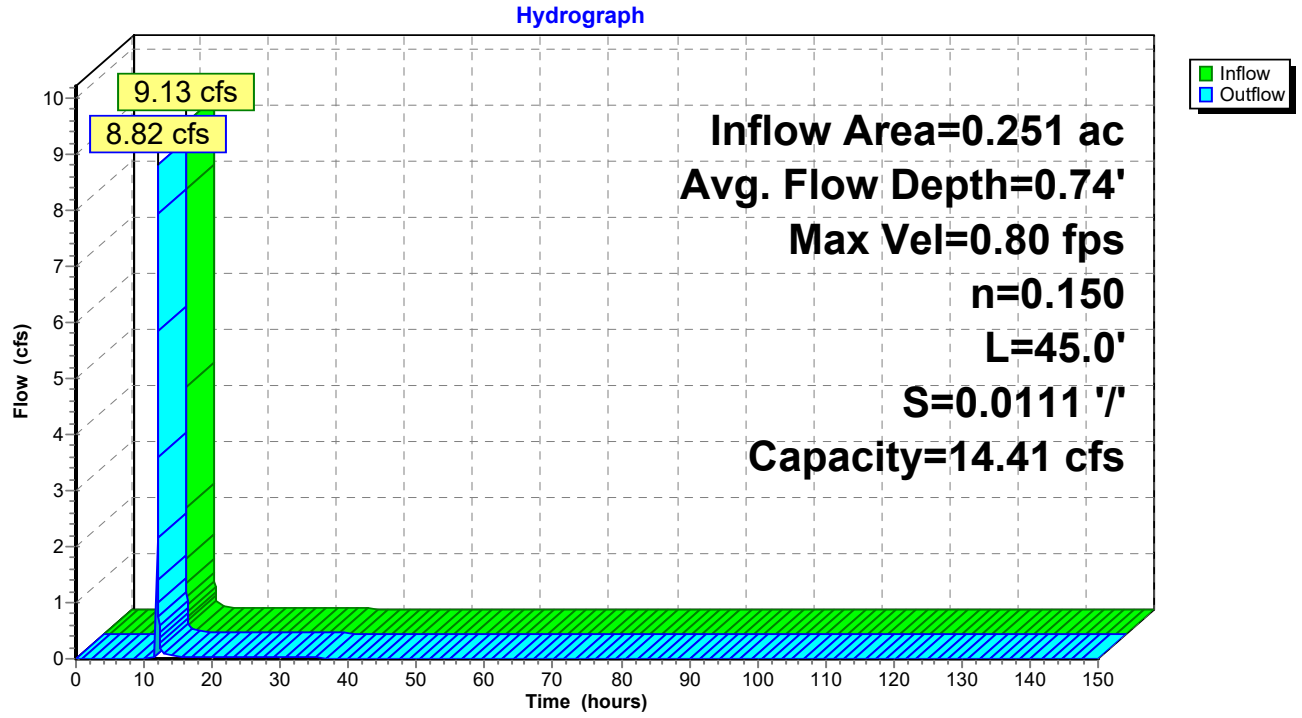
Inflow Area = 0.251 ac, 36.31% Impervious, Inflow Depth = 6.56" for 100-Year event
Inflow = 9.13 cfs @ 12.03 hrs, Volume= 0.137 af
Outflow = 8.82 cfs @ 12.04 hrs, Volume= 0.137 af, Atten= 3%, Lag= 0.9 min
Routed to Reach 25R : reach within Patrick Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.80 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 0.06 fps, Avg. Travel Time= 13.6 min

Peak Storage= 497 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.74' , Surface Width= 15.00'
Bank-Full Depth= 1.00' Flow Area= 15.0 sf, Capacity= 14.41 cfs

15.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Length= 45.0' Slope= 0.0111 '/'
Inlet Invert= 328.50', Outlet Invert= 328.00'

Reach 43R: Channel from Level Spreader to Brook



Summary for Reach 45R: Channel from Level Spreader to Brook

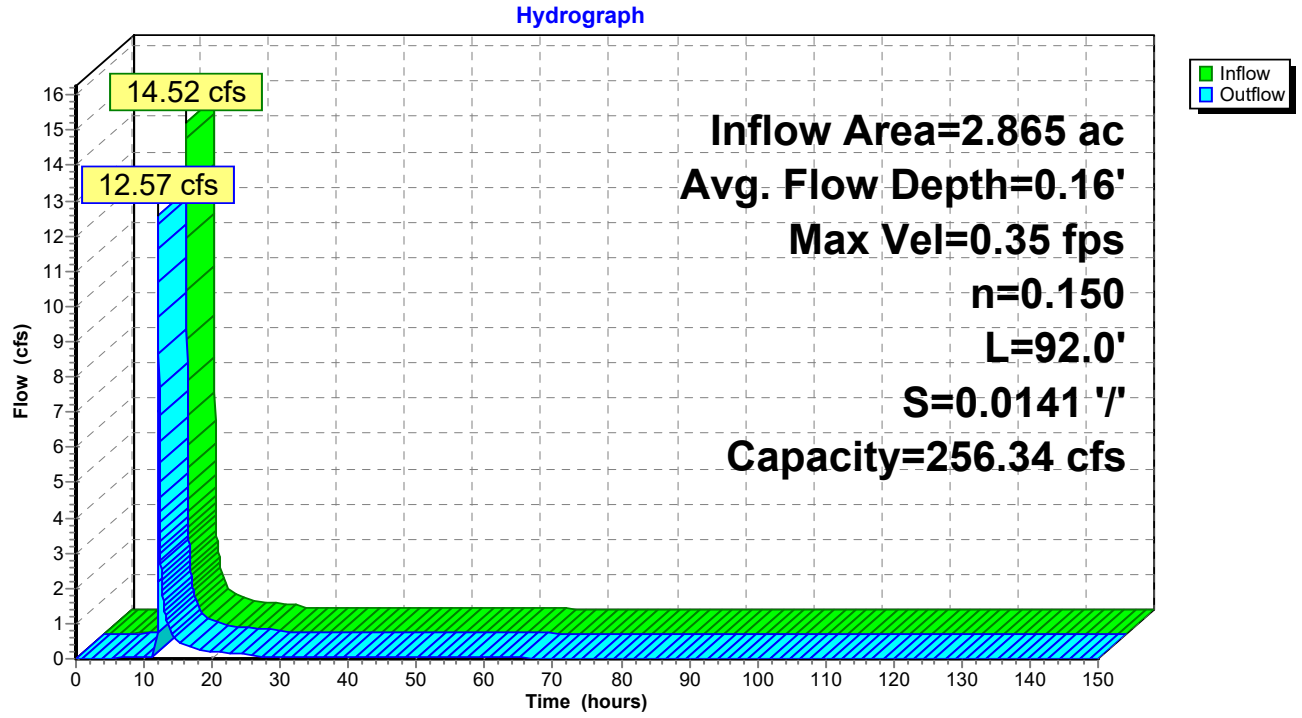
Inflow Area = 2.865 ac, 52.60% Impervious, Inflow Depth = 3.81" for 100-Year event
Inflow = 14.52 cfs @ 12.03 hrs, Volume= 0.909 af
Outflow = 12.57 cfs @ 12.08 hrs, Volume= 0.909 af, Atten= 13%, Lag= 3.2 min
Routed to Reach 26R : reach within Patrick Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 0.35 fps, Min. Travel Time= 4.4 min
Avg. Velocity = 0.06 fps, Avg. Travel Time= 26.5 min

Peak Storage= 3,290 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.16' , Surface Width= 219.00'
Bank-Full Depth= 1.00' Flow Area= 219.0 sf, Capacity= 256.34 cfs

219.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Length= 92.0' Slope= 0.0141 '/'
Inlet Invert= 330.30', Outlet Invert= 329.00'

Reach 45R: Channel from Level Spreader to Brook



Summary for Reach 50R: reach within Riggs Brook to outlet

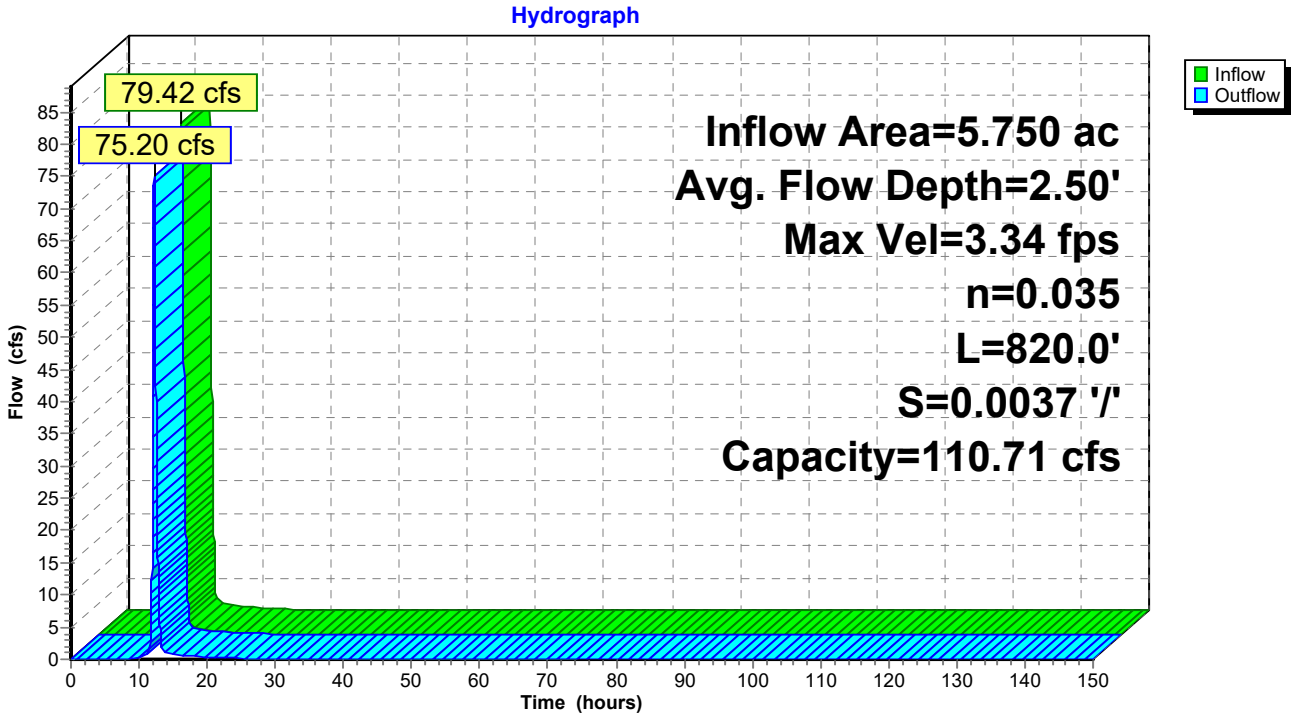
Inflow Area = 5.750 ac, 5.01% Impervious, Inflow Depth = 8.56" for 100-Year event
Inflow = 79.42 cfs @ 12.15 hrs, Volume= 4.100 af
Outflow = 75.20 cfs @ 12.21 hrs, Volume= 4.100 af, Atten= 5%, Lag= 3.6 min
Routed to Pond 9P : S/N 001 Riggs Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.34 fps, Min. Travel Time= 4.1 min
Avg. Velocity = 0.57 fps, Avg. Travel Time= 24.0 min

Peak Storage= 18,465 cf @ 12.21 hrs
Average Depth at Peak Storage= 2.50' , Surface Width= 14.00'
Bank-Full Depth= 3.00' Flow Area= 30.0 sf, Capacity= 110.71 cfs

4.00' x 3.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 820.0' Slope= 0.0037 '/'
Inlet Invert= 326.00', Outlet Invert= 323.00'

Reach 50R: reach within Riggs Brook to outlet



Summary for Pond 1P: CB #6 Yard Drain

Inflow Area = 0.263 ac, 36.50% Impervious, Inflow Depth = 3.77" for 100-Year event
Inflow = 1.73 cfs @ 11.95 hrs, Volume= 0.083 af
Outflow = 1.39 cfs @ 11.99 hrs, Volume= 0.083 af, Atten= 19%, Lag= 2.6 min
Primary = 1.39 cfs @ 11.99 hrs, Volume= 0.083 af
Routed to Pond CB1 : (Rim @ 331.15) (CB#1 to GW)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 330.57' @ 11.99 hrs Surf.Area= 1,133 sf Storage= 577 cf

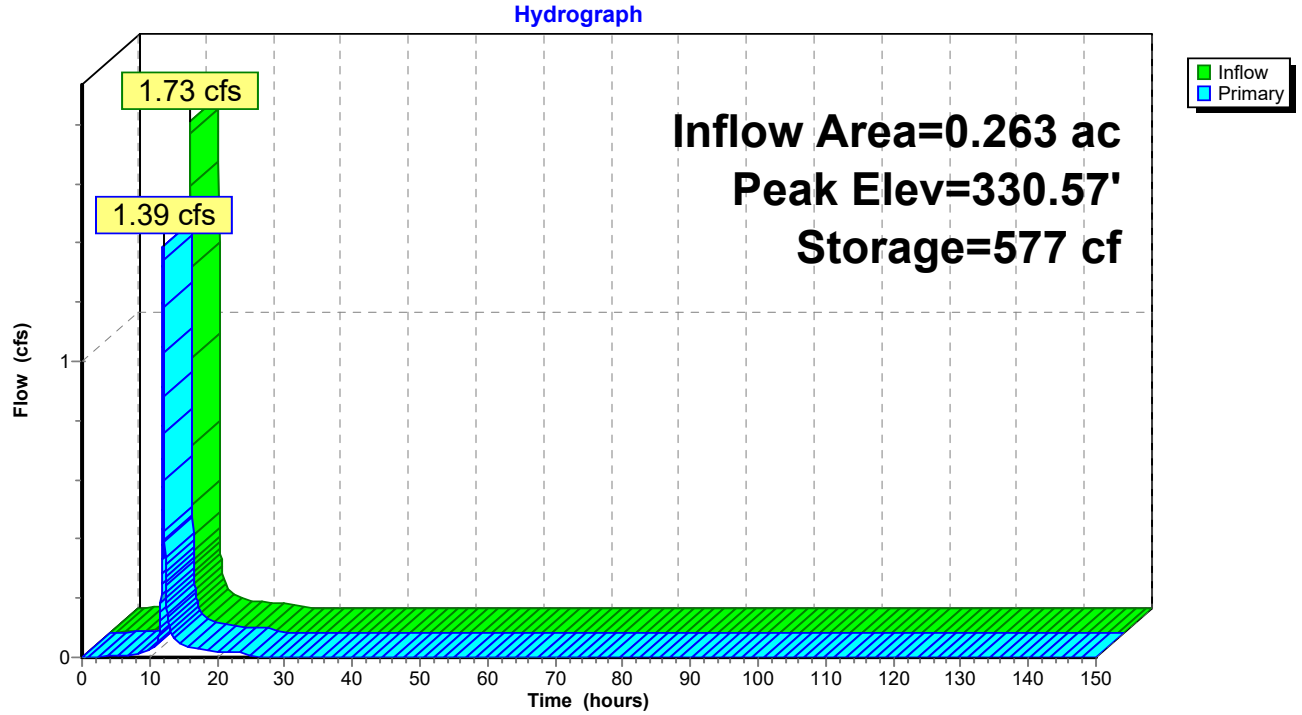
Plug-Flow detention time= 28.1 min calculated for 0.083 af (100% of inflow)
Center-of-Mass det. time= 28.0 min (807.5 - 779.5)

Volume	Invert	Avail.Storage	Storage Description
#1	330.00'	1,829 cf	**20.00'W x 45.00'L x 1.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	330.00'	**15.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.38 cfs @ 11.99 hrs HW=330.57' TW=329.28' (Dynamic Tailwater)
↳**1=Orifice/Grate** (Orifice Controls 1.38 cfs @ 2.56 fps)

Pond 1P: CB #6 Yard Drain



Summary for Pond 2P: CB 8A

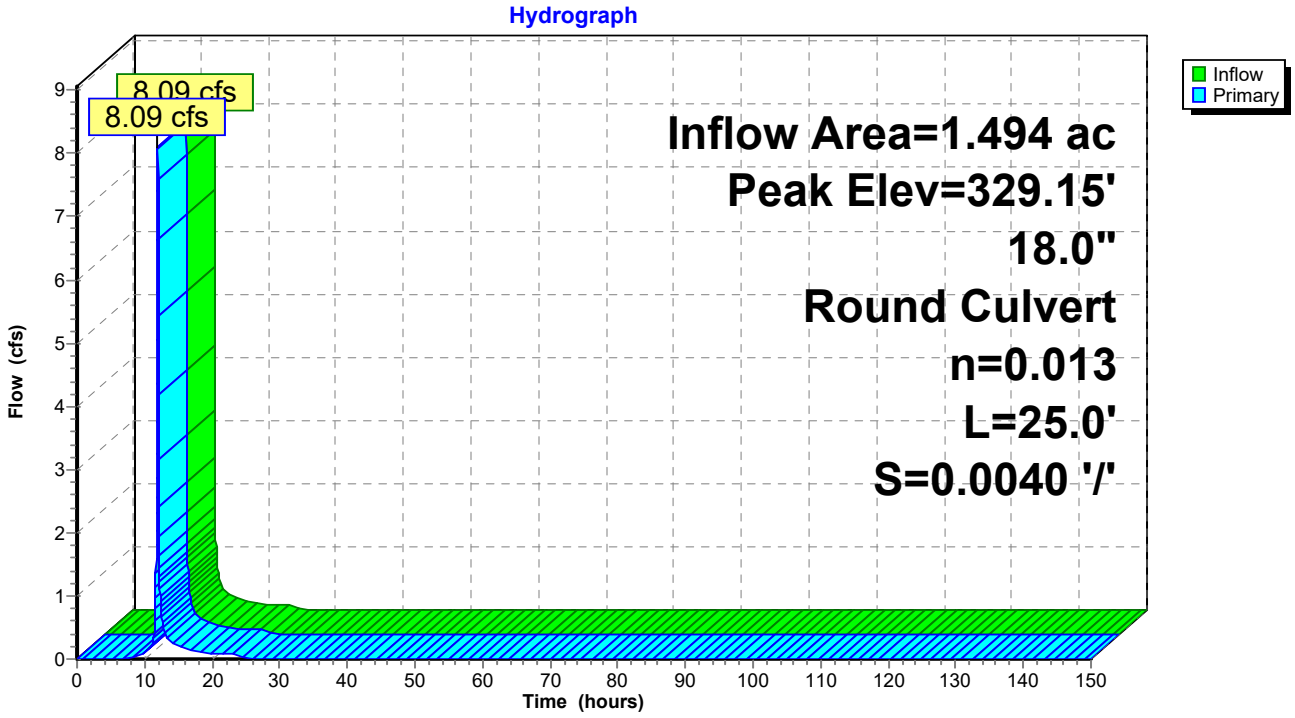
Inflow Area = 1.494 ac, 2.19% Impervious, Inflow Depth = 3.11" for 100-Year event
Inflow = 8.09 cfs @ 11.97 hrs, Volume= 0.387 af
Outflow = 8.09 cfs @ 11.97 hrs, Volume= 0.387 af, Atten= 0%, Lag= 0.0 min
Primary = 8.09 cfs @ 11.97 hrs, Volume= 0.387 af
Routed to Reach 39R : Channel from Level Spreader to Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 329.15' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	327.10'	**18.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 327.10' / 327.00' S= 0.0040 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.03 cfs @ 11.97 hrs HW=329.13' TW=327.57' (Dynamic Tailwater)
1=Culvert (Barrel Controls 8.03 cfs @ 4.54 fps)

Pond 2P: CB 8A



Summary for Pond 3P: GW3

Inflow Area = 0.251 ac, 36.31% Impervious, Inflow Depth = 6.57" for 100-Year event
Inflow = 10.14 cfs @ 12.00 hrs, Volume= 0.137 af
Outflow = 9.13 cfs @ 12.03 hrs, Volume= 0.137 af, Atten= 10%, Lag= 1.5 min
Primary = 3.46 cfs @ 12.03 hrs, Volume= 0.087 af
Routed to Reach 43R : Channel from Level Spreader to Brook
Secondary = 5.67 cfs @ 12.03 hrs, Volume= 0.050 af
Routed to Reach 43R : Channel from Level Spreader to Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Starting Elev= 328.50' Surf.Area= 1,878 sf Storage= 1,878 cf
Peak Elev= 329.87' @ 12.03 hrs Surf.Area= 2,234 sf Storage= 4,038 cf (2,160 cf above start)

Plug-Flow detention time= 464.8 min calculated for 0.094 af (69% of inflow)
Center-of-Mass det. time= 262.9 min (1,017.9 - 755.0)

Volume	Invert	Avail.Storage	Storage Description
#1	326.00'	6,563 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

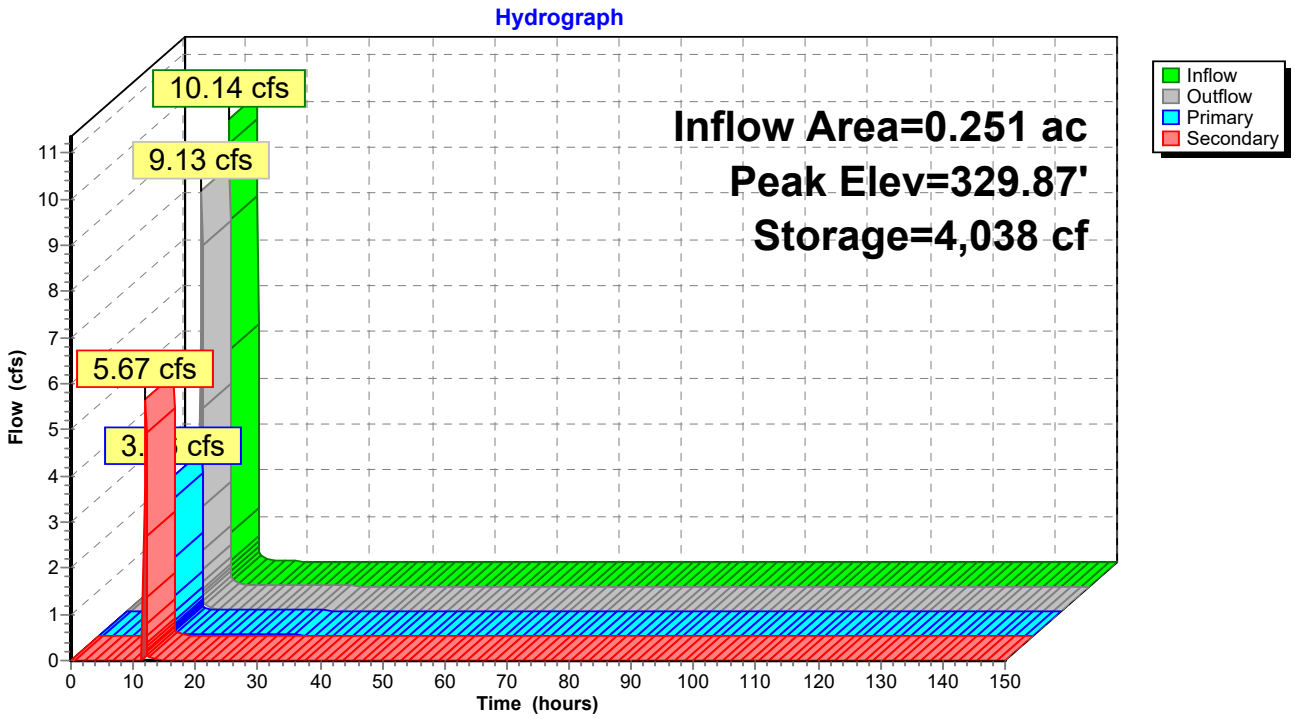
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
326.00	1,878	0.0	0	0
329.00	1,878	40.0	2,254	2,254
330.90	2,658	100.0	4,309	6,563

Device	Routing	Invert	Outlet Devices
#1	Primary	328.50'	**18.0" Round Culvert** L= 15.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 328.50' / 328.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	328.50'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	329.50'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	329.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.32 cfs @ 12.03 hrs HW=329.86' TW=329.18' (Dynamic Tailwater)
1=Culvert (Passes 3.32 cfs of 4.55 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.02 cfs @ 3.98 fps)
3=Orifice/Grate (Weir Controls 3.30 cfs @ 1.96 fps)

Secondary OutFlow Max=5.45 cfs @ 12.03 hrs HW=329.86' TW=329.18' (Dynamic Tailwater)
4=Broad-Crested Rectangular Weir (Weir Controls 5.45 cfs @ 1.52 fps)

Pond 3P: GW3


Hydrograph
Inflow Area=0.251 ac
Peak Elev=329.87'
Storage=4,038 cf
10.14 cfs
9.13 cfs
5.67 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
1
2
3
4
5
6
7
8
9
10
11
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150

Summary for Pond 4P: GW 4

Inflow Area = 2.865 ac, 52.60% Impervious, Inflow Depth = 3.81" for 100-Year event
Inflow = 14.63 cfs @ 12.02 hrs, Volume= 0.910 af
Outflow = 14.52 cfs @ 12.03 hrs, Volume= 0.909 af, Atten= 1%, Lag= 0.7 min
Primary = 3.08 cfs @ 12.03 hrs, Volume= 0.711 af
Routed to Reach 45R : Channel from Level Spreader to Brook
Secondary = 11.44 cfs @ 12.03 hrs, Volume= 0.198 af
Routed to Reach 45R : Channel from Level Spreader to Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Starting Elev= 330.80' Surf.Area= 5,719 sf Storage= 3,431 cf
Peak Elev= 332.59' @ 12.03 hrs Surf.Area= 8,997 sf Storage= 14,402 cf (10,971 cf above start)

Plug-Flow detention time= 538.8 min calculated for 0.830 af (91% of inflow)
Center-of-Mass det. time= 435.4 min (1,220.2 - 784.8)

Volume	Invert	Avail.Storage	Storage Description
#1	329.30'	18,263 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

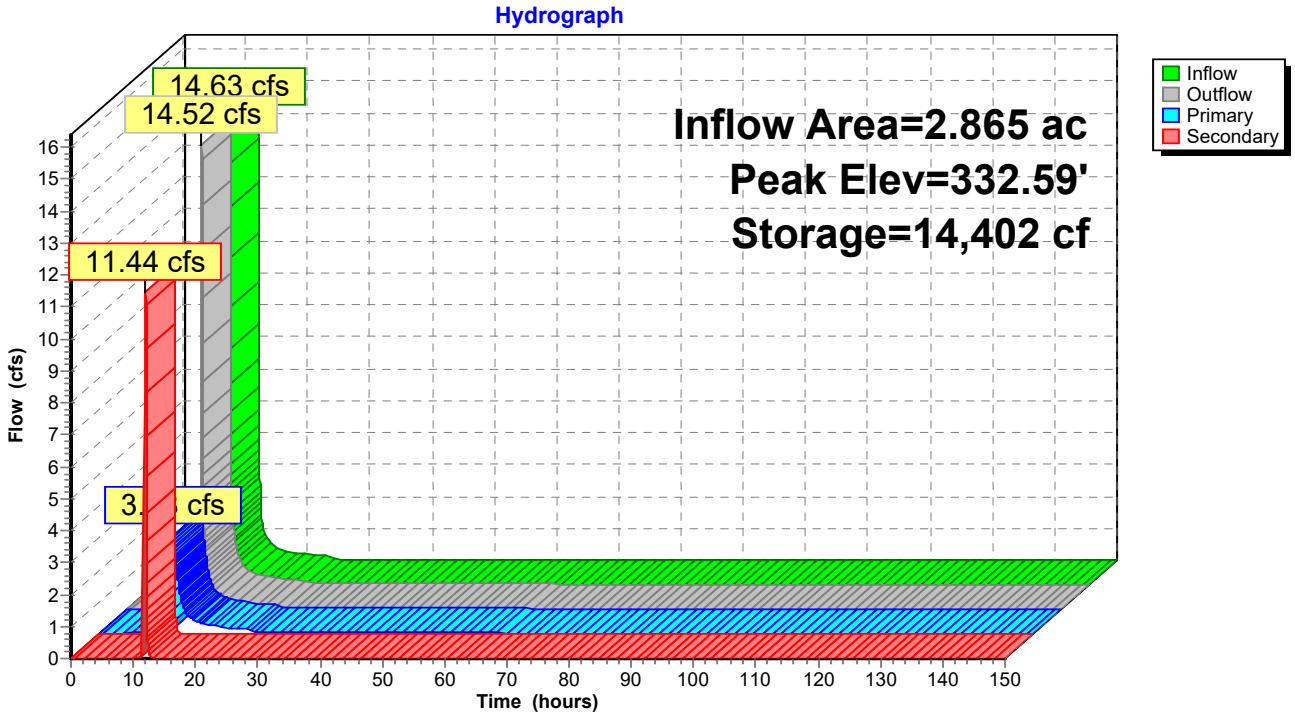
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
329.30	5,719	0.0	0	0
331.30	5,719	40.0	4,575	4,575
332.00	8,071	100.0	4,826	9,402
333.00	9,652	100.0	8,862	18,263

Device	Routing	Invert	Outlet Devices
#1	Primary	330.80'	**18.0" Round Culvert** L= 17.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 330.80' / 330.40' S= 0.0235 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	330.80'	**1.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	332.25'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	332.50'	**194.0' long x 5.0' 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) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=3.07 cfs @ 12.03 hrs HW=332.59' TW=330.44' (Dynamic Tailwater)
└─**1=Culvert** (Passes 3.07 cfs of 6.84 cfs potential flow)
├─**2=Orifice/Grate** (Orifice Controls 0.08 cfs @ 6.32 fps)
└─**3=Orifice/Grate** (Weir Controls 3.00 cfs @ 1.89 fps)

Secondary OutFlow Max=11.37 cfs @ 12.03 hrs HW=332.59' TW=330.44' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 11.37 cfs @ 0.68 fps)

Pond 4P: GW 4


Hydrograph
14.63 cfs
14.52 cfs
11.44 cfs
Inflow Area=2.865 ac
Peak Elev=332.59'
Storage=14,402 cf
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Summary for Pond 5P: GW 2

Inflow Area = 1.237 ac, 49.43% Impervious, Inflow Depth = 3.82" for 100-Year event
Inflow = 6.54 cfs @ 12.01 hrs, Volume= 0.393 af
Outflow = 4.14 cfs @ 12.11 hrs, Volume= 0.351 af, Atten= 37%, Lag= 5.6 min
Primary = 4.14 cfs @ 12.11 hrs, Volume= 0.351 af
Routed to Reach 41R : Channel from Level Spreader to Brook
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 41R : Channel from Level Spreader to Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Starting Elev= 327.50' Surf.Area= 1,930 sf Storage= 1,930 cf
Peak Elev= 329.41' @ 12.11 hrs Surf.Area= 7,631 sf Storage= 9,079 cf (7,149 cf above start)

Plug-Flow detention time= 533.1 min calculated for 0.306 af (78% of inflow)
Center-of-Mass det. time= 381.8 min (1,158.8 - 777.0)

Volume	Invert	Avail.Storage	Storage Description
#1	325.00'	14,236 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

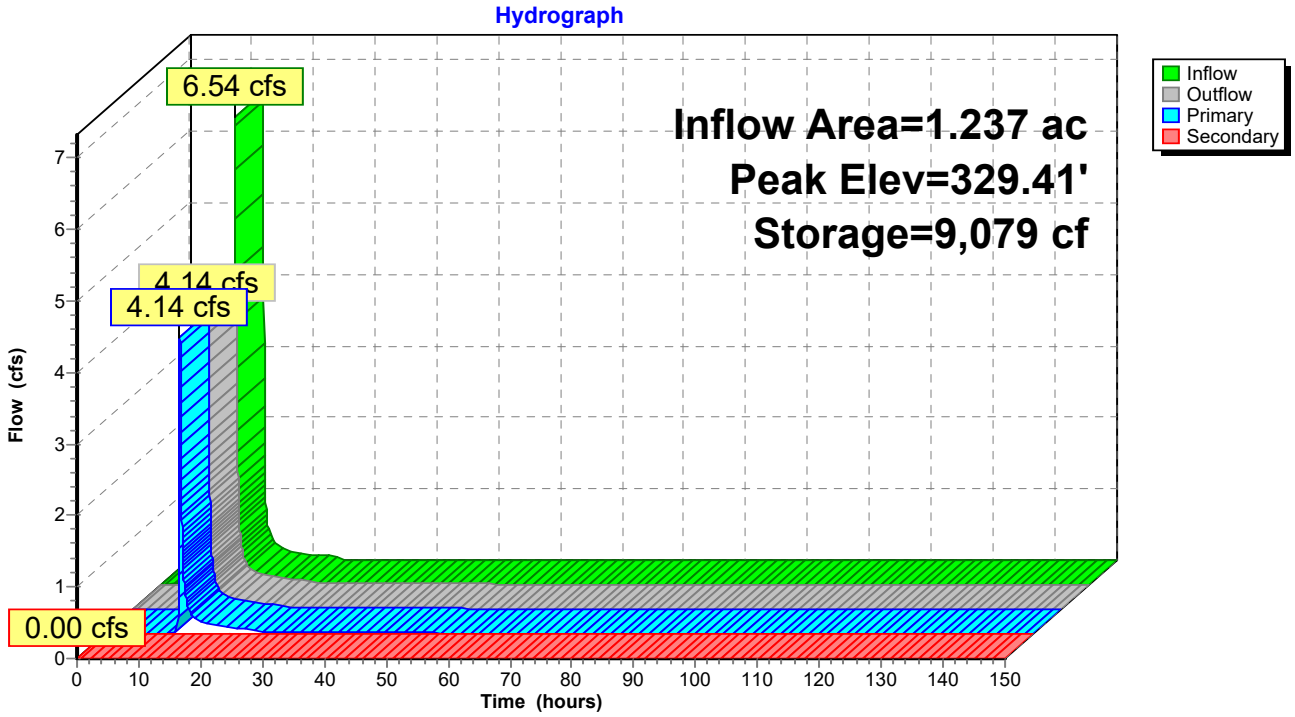
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
325.00	1,930	0.0	0	0
328.00	1,930	40.0	2,316	2,316
330.00	9,990	100.0	11,920	14,236

Device	Routing	Invert	Outlet Devices
#1	Primary	327.50'	**18.0" Round Culvert** L= 33.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 327.50' / 327.50' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	327.50'	**1.1" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	329.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	329.50'	**82.0' long x 5.0' 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) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=4.13 cfs @ 12.11 hrs HW=329.41' TW=328.66' (Dynamic Tailwater)
└**1=Culvert** (Passes 4.13 cfs of 6.82 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 4.17 fps)
└**3=Orifice/Grate** (Weir Controls 4.10 cfs @ 2.10 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=327.50' TW=328.50' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5P: GW 2


Hydrograph
Inflow
Outflow
Primary
Secondary
6.54 cfs
4.14 cfs
4.14 cfs
0.00 cfs
Inflow Area=1.237 ac
Peak Elev=329.41'
Storage=9,079 cf
Flow (cfs)
Time (hours)
0
1
2
3
4
5
6
7
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150

Summary for Pond 6P: GW 1

Inflow Area = 1.101 ac, 25.57% Impervious, Inflow Depth = 3.56" for 100-Year event
Inflow = 6.49 cfs @ 11.97 hrs, Volume= 0.327 af
Outflow = 6.16 cfs @ 12.00 hrs, Volume= 0.326 af, Atten= 5%, Lag= 1.5 min
Primary = 0.62 cfs @ 12.00 hrs, Volume= 0.113 af
Routed to Reach 35R : Channel from Level Spreader to Brook
Secondary = 5.54 cfs @ 12.00 hrs, Volume= 0.213 af
Routed to Reach 35R : Channel from Level Spreader to Brook

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Starting Elev= 326.80' Surf.Area= 6,549 sf Storage= 6,549 cf
Peak Elev= 327.61' @ 12.00 hrs Surf.Area= 8,264 sf Storage= 10,189 cf (3,640 cf above start)

Plug-Flow detention time= 954.2 min calculated for 0.176 af (54% of inflow)
Center-of-Mass det. time= 417.4 min (1,208.2 - 790.7)

Volume	Invert	Avail.Storage	Storage Description
#1	324.30'	26,868 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

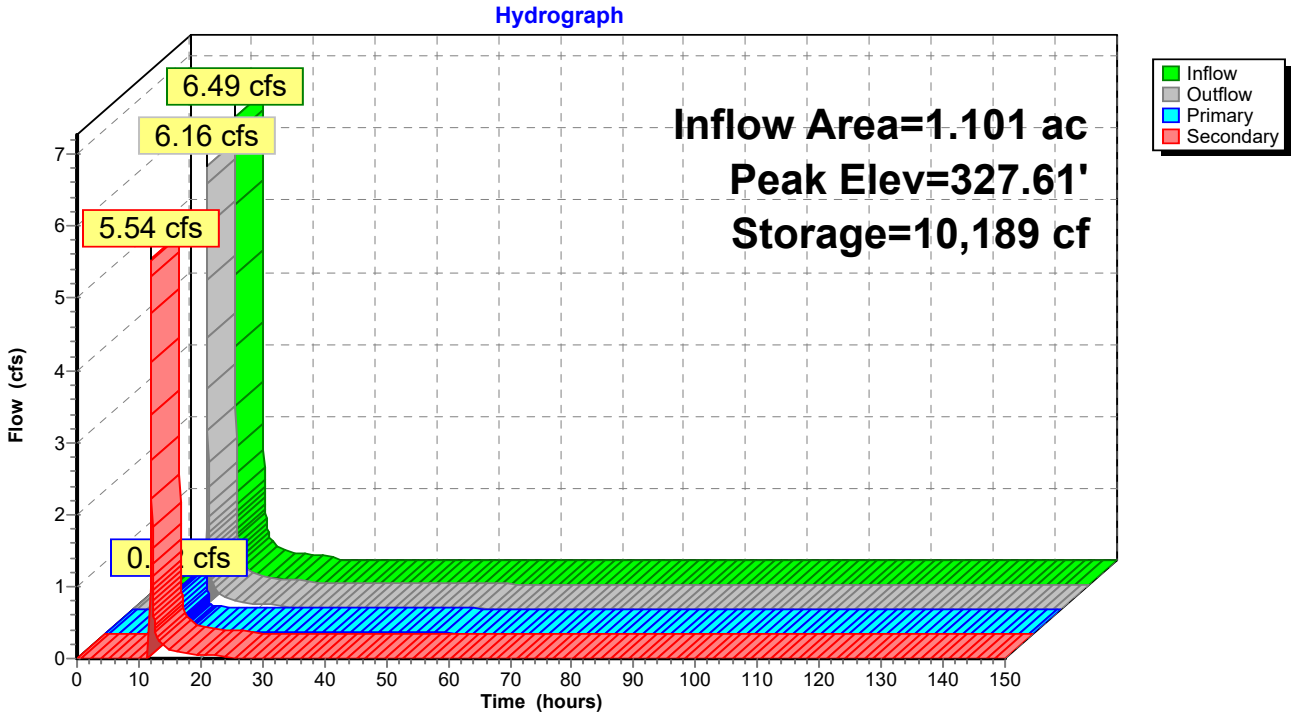
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
324.30	6,549	0.0	0	0
327.30	6,549	40.0	7,859	7,859
329.00	15,815	100.0	19,009	26,868

Device	Routing	Invert	Outlet Devices
#1	Primary	326.80'	**18.0" Round Culvert** L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 326.80' / 326.00' S= 0.0286 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	326.80'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	327.50'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	327.50'	**61.0' long x 5.0' 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) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.62 cfs @ 12.00 hrs HW=327.61' TW=326.23' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.62 cfs of 3.01 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 4.23 fps)
└**3=Orifice/Grate** (Weir Controls 0.59 cfs @ 1.11 fps)

Secondary OutFlow Max=5.51 cfs @ 12.00 hrs HW=327.61' TW=326.23' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 5.51 cfs @ 0.79 fps)

Pond 6P: GW 1

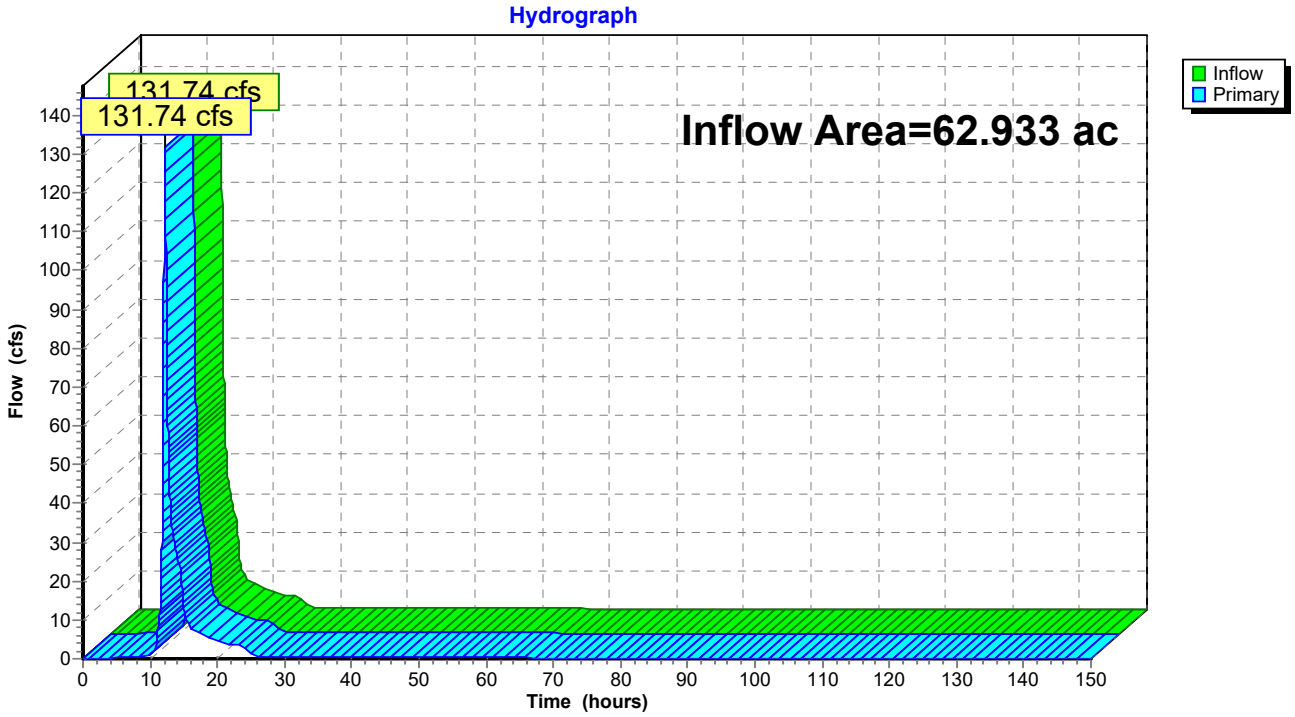

Hydrograph
6.49 cfs
6.16 cfs
5.54 cfs
Inflow Area=1.101 ac
Peak Elev=327.61'
Storage=10,189 cf
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
1
2
3
4
5
6
7
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150

Summary for Pond 7P: Total Discharge

Inflow Area = 62.933 ac, 33.57% Impervious, Inflow Depth = 3.65" for 100-Year event
Inflow = 131.74 cfs @ 12.19 hrs, Volume= 19.155 af
Primary = 131.74 cfs @ 12.19 hrs, Volume= 19.155 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs

Pond 7P: Total Discharge

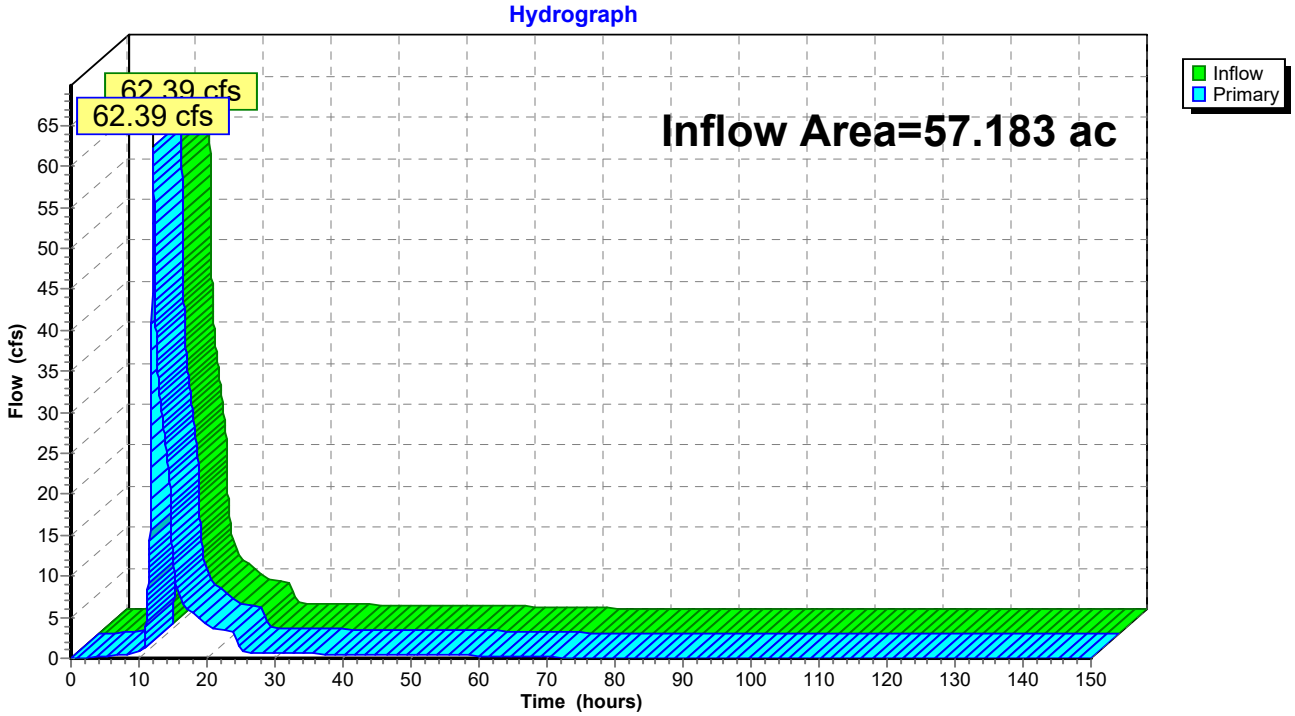


Summary for Pond 8P: S/N 002 Patrick Brook

Inflow Area = 57.183 ac, 36.45% Impervious, Inflow Depth = 3.16" for 100-Year event
Inflow = 62.39 cfs @ 12.04 hrs, Volume= 15.056 af
Primary = 62.39 cfs @ 12.04 hrs, Volume= 15.056 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 7P : Total Discharge

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs

Pond 8P: S/N 002 Patrick Brook

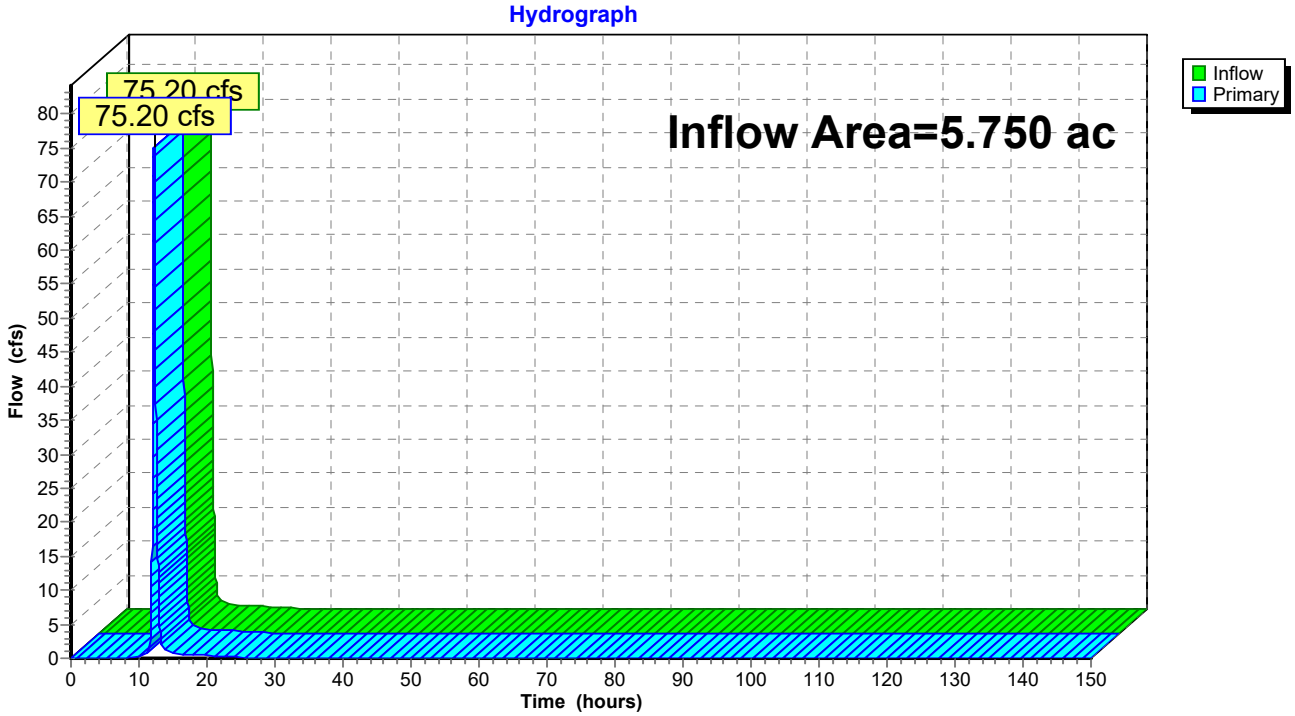


Summary for Pond 9P: S/N 001 Riggs Brook

Inflow Area = 5.750 ac, 5.01% Impervious, Inflow Depth = 8.56" for 100-Year event
Inflow = 75.20 cfs @ 12.21 hrs, Volume= 4.100 af
Primary = 75.20 cfs @ 12.21 hrs, Volume= 4.100 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 7P : Total Discharge

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs

Pond 9P: S/N 001 Riggs Brook



Summary for Pond 10P: (Rim @ 351.5) (CB #46 to CB #43)

Inflow Area = 4.828 ac, 44.92% Impervious, Inflow Depth = 3.93" for 100-Year event
Inflow = 28.64 cfs @ 11.99 hrs, Volume= 1.581 af
Outflow = 28.64 cfs @ 11.99 hrs, Volume= 1.581 af, Atten= 0%, Lag= 0.0 min
Primary = 28.64 cfs @ 11.99 hrs, Volume= 1.581 af
Routed to Pond 11P : (Rim @ 345.05) (CB #43 to CB #8)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 33P : (Rim @ 333.8) (DMH #4 to CB #4)

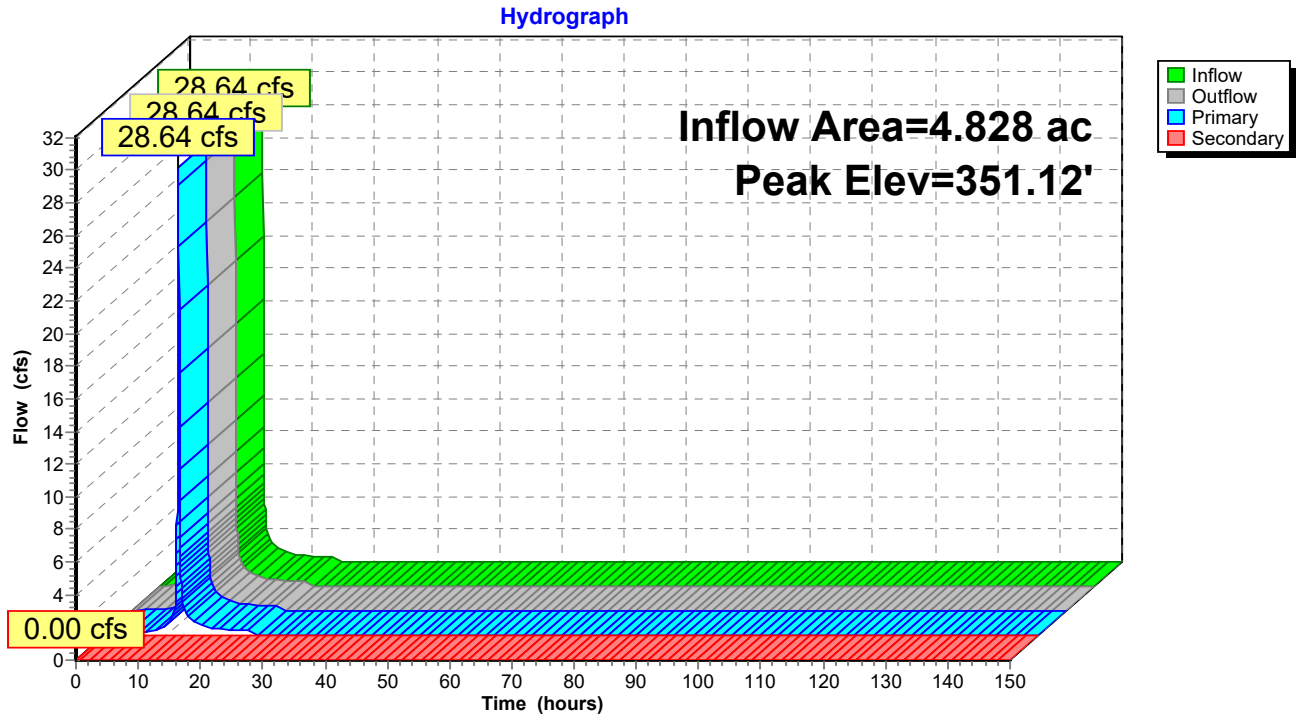
Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 351.12' @ 12.00 hrs
Flood Elev= 351.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	345.50'	**24.0" Round Culvert** L= 244.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 345.50' / 340.50' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	351.50'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=27.64 cfs @ 11.99 hrs HW=350.88' TW=345.42' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 27.64 cfs @ 8.80 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=345.50' TW=328.90' (Dynamic Tailwater)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: (Rim @ 351.5) (CB #46 to CB #43)



Summary for Pond 11P: (Rim @ 345.05) (CB #43 to CB #8)

Inflow Area = 13.570 ac, 51.11% Impervious, Inflow Depth = 4.05" for 100-Year event
Inflow = 72.27 cfs @ 12.01 hrs, Volume= 4.581 af
Outflow = 72.27 cfs @ 12.01 hrs, Volume= 4.581 af, Atten= 0%, Lag= 0.0 min
Primary = 64.30 cfs @ 11.98 hrs, Volume= 4.531 af
Routed to Pond 14P : (Rim @ 337.1) (CB #8 to Main GW)
Secondary = 8.77 cfs @ 12.02 hrs, Volume= 0.050 af
Routed to Pond 14P : (Rim @ 337.1) (CB #8 to Main GW)

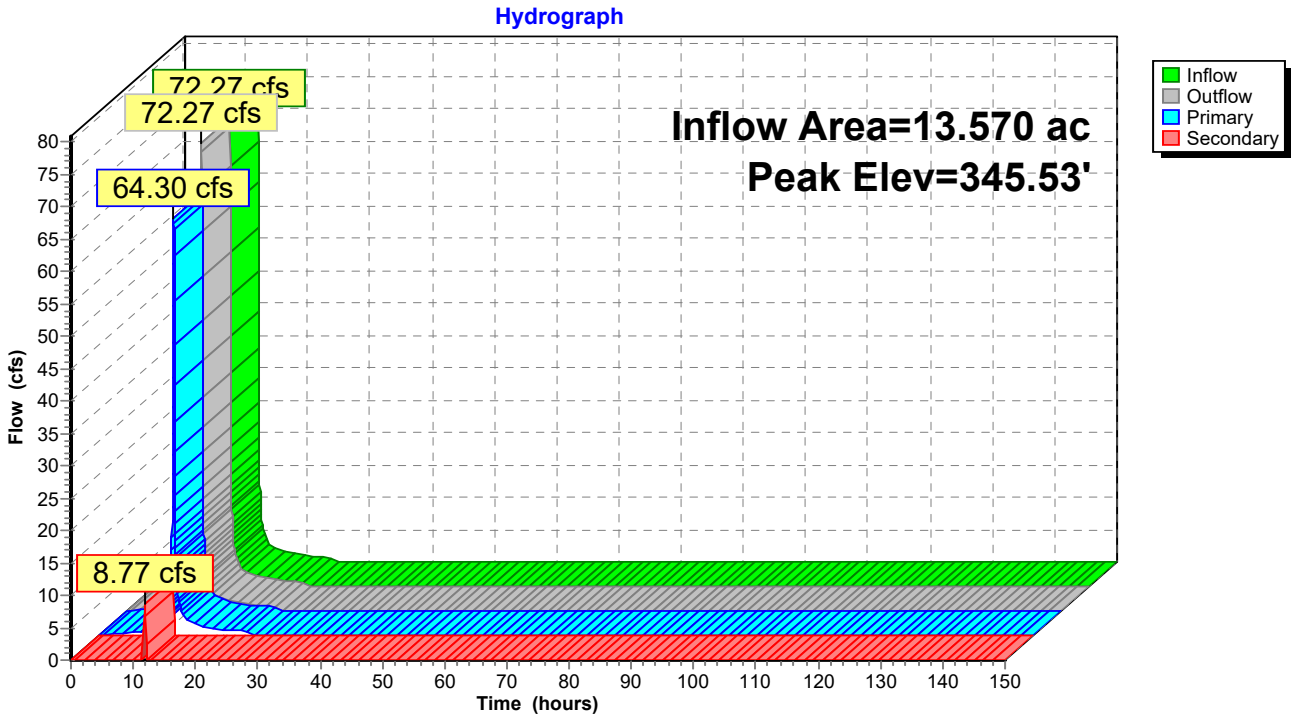
Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 345.53' @ 12.02 hrs
Flood Elev= 345.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	339.90'	**36.0" Round Culvert** L= 696.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 339.90' / 329.80' S= 0.0145 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 7.07 sf
#2	Secondary	345.05'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=63.12 cfs @ 11.98 hrs HW=345.36' TW=337.25' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 63.12 cfs @ 8.93 fps)

Secondary OutFlow Max=8.55 cfs @ 12.02 hrs HW=345.52' TW=337.38' (Dynamic Tailwater)
└**2=Orifice/Grate** (Weir Controls 8.55 cfs @ 2.25 fps)

Pond 11P: (Rim @ 345.05) (CB #43 to CB #8)



Summary for Pond 12P: Detention Pond

Inflow Area = 5.711 ac, 60.00% Impervious, Inflow Depth = 4.21" for 100-Year event
Inflow = 33.85 cfs @ 12.00 hrs, Volume= 2.006 af
Outflow = 8.89 cfs @ 12.49 hrs, Volume= 2.004 af, Atten= 74%, Lag= 29.2 min
Primary = 8.89 cfs @ 12.49 hrs, Volume= 2.004 af
Routed to Pond 17P : (Rim @ 338.7) (CB #52 to DMH #2)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 336.16' @ 12.22 hrs Surf.Area= 14,907 sf Storage= 39,710 cf

Plug-Flow detention time= 96.7 min calculated for 2.004 af (100% of inflow)
Center-of-Mass det. time= 96.2 min (864.0 - 767.8)

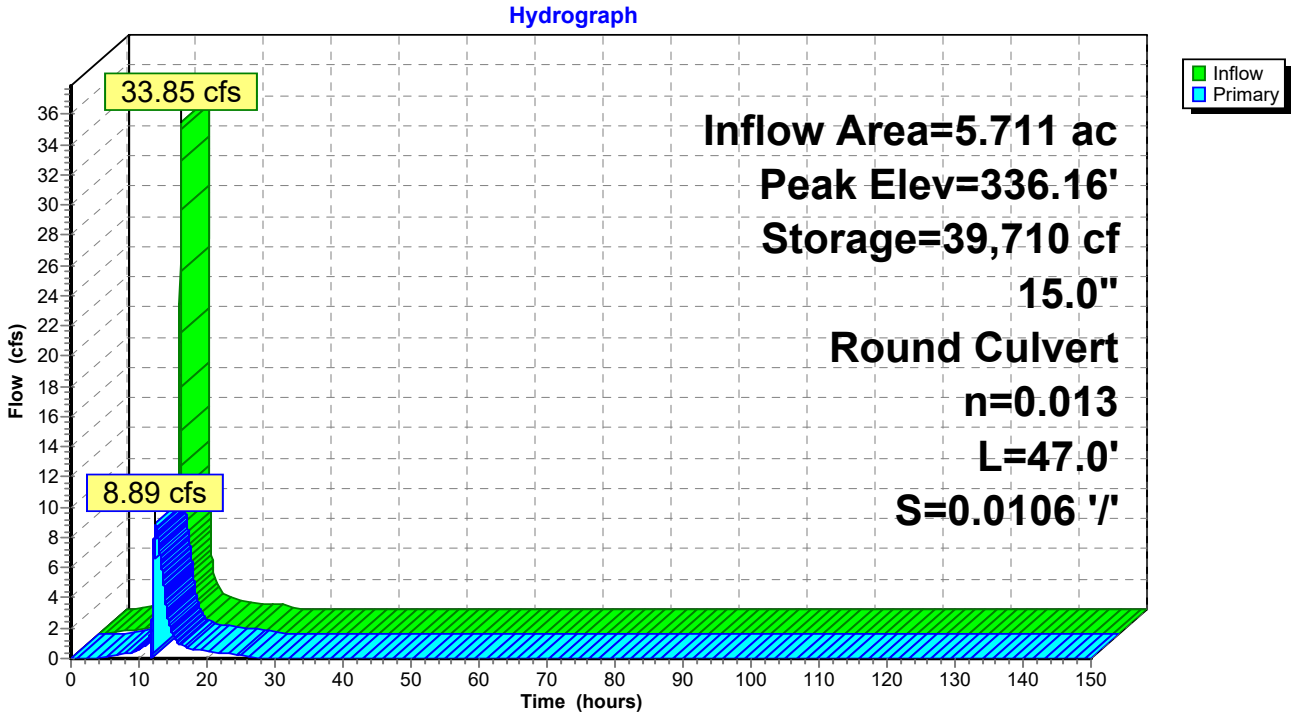
Volume	Invert	Avail.Storage	Storage Description
#1	333.00'	69,744 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
333.00	10,280	0	0
334.00	11,680	10,980	10,980
335.00	13,136	12,408	23,388
336.00	14,649	13,893	37,281
337.00	16,218	15,434	52,714
338.00	17,842	17,030	69,744

Device	Routing	Invert	Outlet Devices
#1	Primary	333.00'	**15.0" Round Culvert** L= 47.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 333.00' / 332.50' S= 0.0106 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=8.93 cfs @ 12.49 hrs HW=335.91' TW=333.62' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 8.93 cfs @ 7.27 fps)

Pond 12P: Detention Pond



Summary for Pond 13P: (Rim @ 338.1) (DMH #2 to CB #8)

Inflow Area = 9.115 ac, 63.71% Impervious, Inflow Depth = 4.28" for 100-Year event
Inflow = 21.47 cfs @ 11.99 hrs, Volume= 3.249 af
Outflow = 21.47 cfs @ 11.99 hrs, Volume= 3.249 af, Atten= 0%, Lag= 0.0 min
Primary = 18.48 cfs @ 11.94 hrs, Volume= 3.183 af
Routed to Pond 14P : (Rim @ 337.1) (CB #8 to Main GW)
Secondary = 8.84 cfs @ 12.01 hrs, Volume= 0.066 af
Routed to Pond 3P : GW3

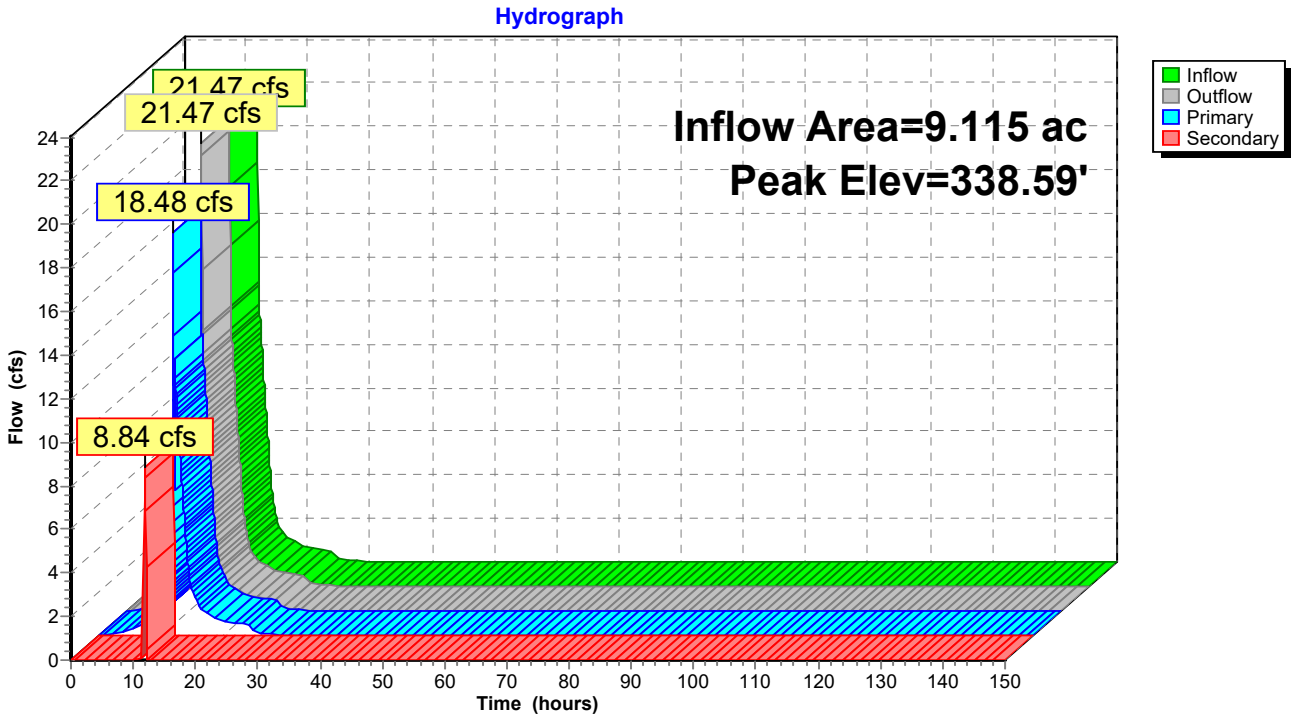
Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 338.59' @ 12.01 hrs
Flood Elev= 338.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	331.13'	**24.0" Round Culvert** L= 312.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 331.13' / 329.54' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	338.10'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.79 cfs @ 11.94 hrs HW=336.84' TW=336.03' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 9.79 cfs @ 3.12 fps)

Secondary OutFlow Max=8.68 cfs @ 12.01 hrs HW=338.58' TW=329.80' (Dynamic Tailwater)
└**2=Orifice/Grate** (Weir Controls 8.68 cfs @ 2.26 fps)

Pond 13P: (Rim @ 338.1) (DMH #2 to CB #8)



Summary for Pond 14P: (Rim @ 337.1) (CB #8 to Main GW)

Inflow Area = 24.715 ac, 55.98% Impervious, Inflow Depth = 4.11" for 100-Year event
Inflow = 95.99 cfs @ 12.01 hrs, Volume= 8.457 af
Outflow = 95.99 cfs @ 12.01 hrs, Volume= 8.457 af, Atten= 0%, Lag= 0.0 min
Primary = 92.55 cfs @ 12.00 hrs, Volume= 8.439 af
Routed to Pond 16P : Main Gravel Wetland
Secondary = 4.01 cfs @ 12.02 hrs, Volume= 0.018 af
Routed to Pond 16P : Main Gravel Wetland

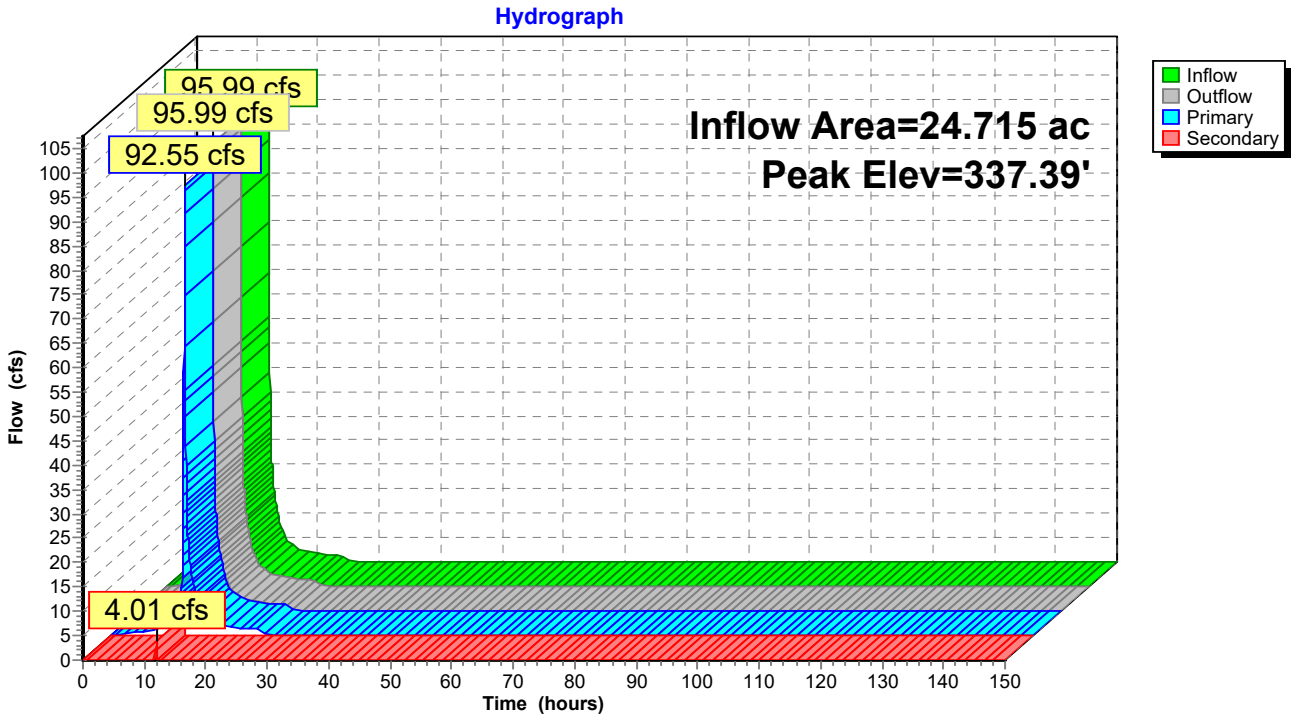
Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 337.39' @ 12.02 hrs
Flood Elev= 337.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	329.52'	**42.0" Round Culvert** L= 729.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 329.52' / 325.50' S= 0.0055 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 9.62 sf
#2	Secondary	337.10'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=91.50 cfs @ 12.00 hrs HW=337.34' TW=329.18' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 91.50 cfs @ 9.51 fps)

Secondary OutFlow Max=3.83 cfs @ 12.02 hrs HW=337.38' TW=329.36' (Dynamic Tailwater)
└**2=Orifice/Grate** (Weir Controls 3.83 cfs @ 1.72 fps)

Pond 14P: (Rim @ 337.1) (CB #8 to Main GW)



Summary for Pond 15P: (Invert @ 328.1) (Yard Drain to CB #1)

Inflow Area = 4.419 ac, 15.87% Impervious, Inflow Depth = 3.38" for 100-Year event
Inflow = 14.84 cfs @ 12.16 hrs, Volume= 1.244 af
Outflow = 15.10 cfs @ 12.20 hrs, Volume= 1.243 af, Atten= 0%, Lag= 2.5 min
Primary = 9.30 cfs @ 12.34 hrs, Volume= 1.130 af
Routed to Pond CB1 : (Rim @ 331.15) (CB#1 to GW)
Secondary = 7.17 cfs @ 12.19 hrs, Volume= 0.113 af
Routed to Reach 5R : Overflow Path

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 330.54' @ 12.20 hrs Surf.Area= 3,950 sf Storage= 5,500 cf

Plug-Flow detention time= 9.5 min calculated for 1.243 af (100% of inflow)
Center-of-Mass det. time= 9.0 min (824.5 - 815.6)

Volume	Invert	Avail.Storage	Storage Description
#1	328.00'	5,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

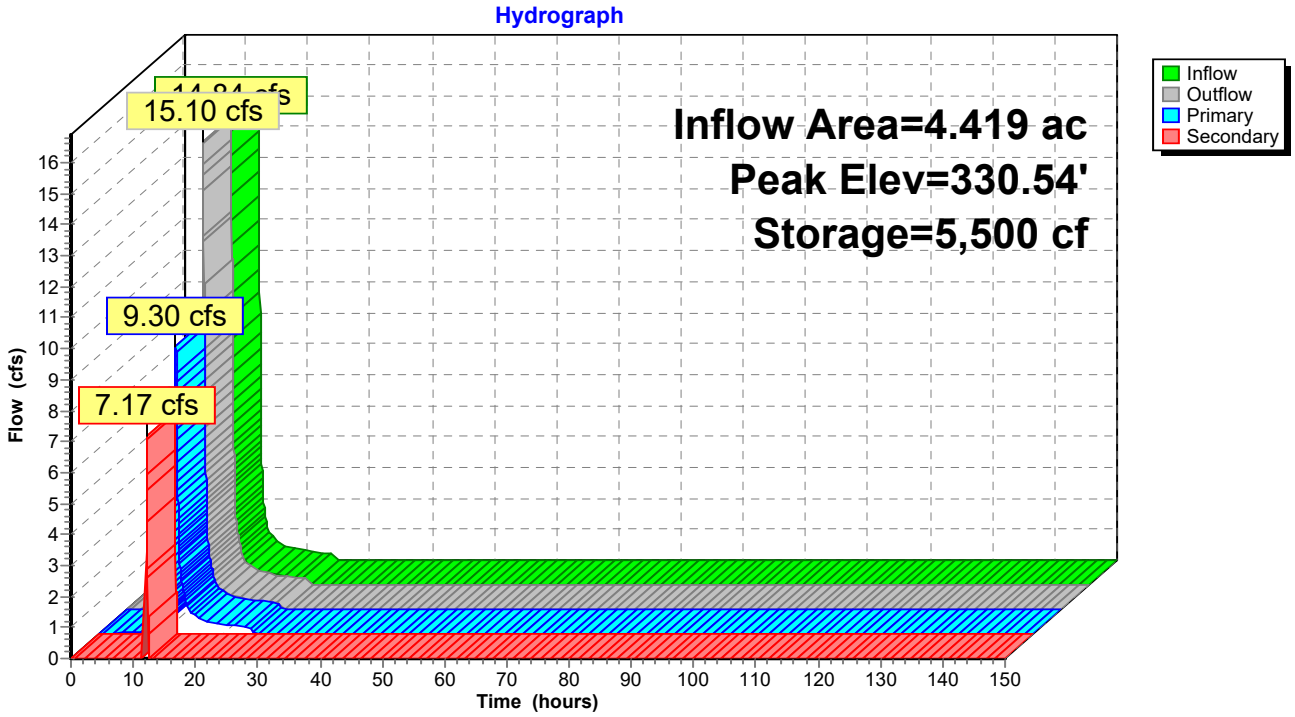
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
328.00	450	0	0
330.50	3,950	5,500	5,500

Device	Routing	Invert	Outlet Devices
#1	Primary	328.10'	**24.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 328.10' / 326.80' S= 0.0260 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	330.00'	**10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=9.81 cfs @ 12.34 hrs HW=330.33' TW=329.91' (Dynamic Tailwater)
1=Culvert (Inlet Controls 9.81 cfs @ 3.12 fps)

Secondary OutFlow Max=6.46 cfs @ 12.19 hrs HW=330.53' TW=330.46' (Dynamic Tailwater)
2=Sharp-Crested Rectangular Weir (Weir Controls 6.46 cfs @ 1.23 fps)

Pond 15P: (Invert @ 328.1) (Yard Drain to CB #1)



Summary for Pond 16P: Main Gravel Wetland

Inflow Area = 43.989 ac, 40.56% Impervious, Inflow Depth = 3.83" for 100-Year event
Inflow = 163.97 cfs @ 12.02 hrs, Volume= 14.031 af
Outflow = 102.47 cfs @ 12.17 hrs, Volume= 14.028 af, Atten= 38%, Lag= 8.4 min
Primary = 28.69 cfs @ 12.20 hrs, Volume= 11.437 af
Routed to Reach 16R : reach within Patrick Brook to outlet
Secondary = 73.85 cfs @ 12.16 hrs, Volume= 2.591 af
Routed to Reach 28R : emergency spillway

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Starting Elev= 324.50' Surf.Area= 22,146 sf Storage= 31,004 cf
Peak Elev= 330.03' @ 12.17 hrs Surf.Area= 44,385 sf Storage= 208,430 cf (177,426 cf above start)

Plug-Flow detention time= 277.2 min calculated for 13.315 af (95% of inflow)
Center-of-Mass det. time= 224.0 min (1,023.1 - 799.1)

Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	252,223 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

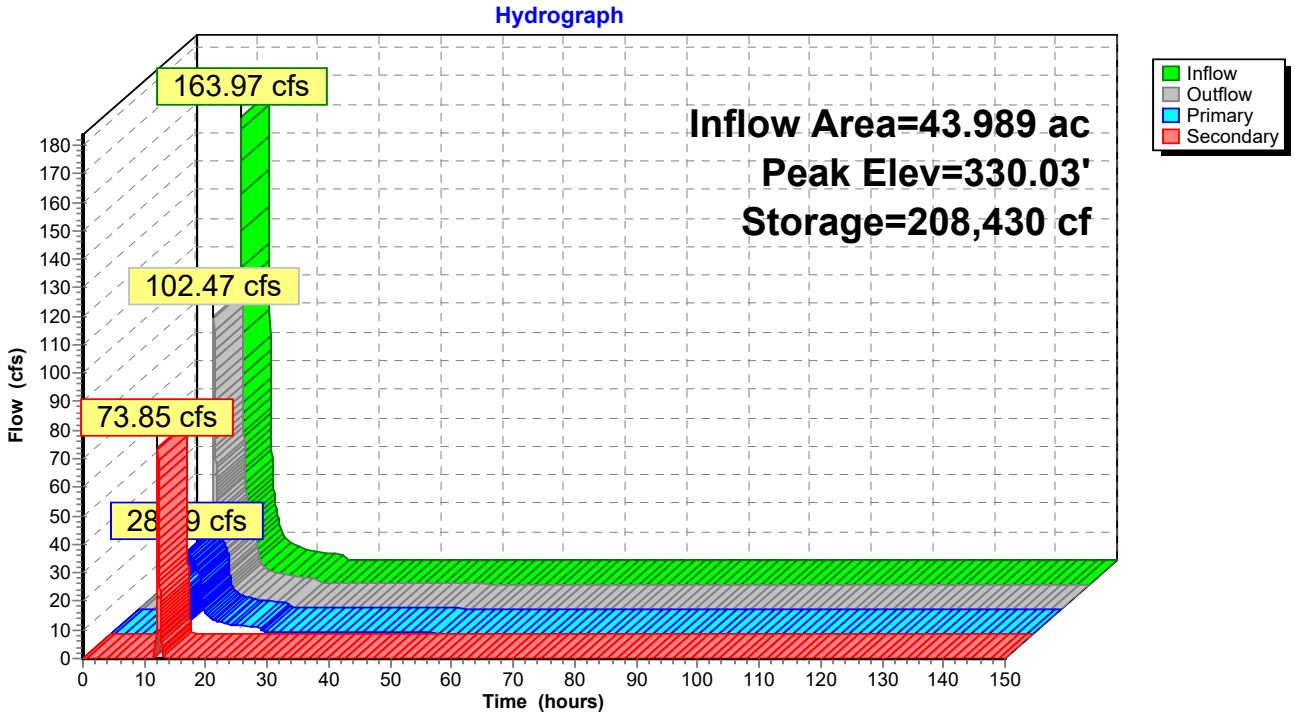
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
321.00	22,146	0.0	0	0
325.00	22,146	40.0	35,434	35,434
326.00	26,028	100.0	24,087	59,521
327.00	30,037	100.0	28,033	87,553
328.00	39,628	100.0	34,833	122,386
329.00	42,706	100.0	41,167	163,553
331.00	45,964	100.0	88,670	252,223

Device	Routing	Invert	Outlet Devices
#1	Primary	324.50'	**24.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 324.50' / 324.10' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	324.50'	**3.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	326.90'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	328.90'	**20.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Primary OutFlow Max=28.78 cfs @ 12.20 hrs HW=330.01' TW=326.39' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 28.78 cfs @ 9.16 fps)
└─**2=Orifice/Grate** (Passes < 0.61 cfs potential flow)
└─**3=Orifice/Grate** (Passes < 106.70 cfs potential flow)

Secondary OutFlow Max=73.70 cfs @ 12.16 hrs HW=330.03' TW=329.35' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 73.70 cfs @ 3.26 fps)

Pond 16P: Main Gravel Wetland



Summary for Pond 17P: (Rim @ 338.7) (CB #52 to DMH #2)

Inflow Area = 9.115 ac, 63.71% Impervious, Inflow Depth = 4.28" for 100-Year event
Inflow = 21.47 cfs @ 11.99 hrs, Volume= 3.249 af
Outflow = 21.47 cfs @ 11.99 hrs, Volume= 3.249 af, Atten= 0%, Lag= 0.0 min
Primary = 20.56 cfs @ 11.95 hrs, Volume= 3.183 af
Routed to Pond 13P : (Rim @ 338.1) (DMH #2 to CB #8)
Secondary = 9.15 cfs @ 12.01 hrs, Volume= 0.066 af
Routed to Pond 13P : (Rim @ 338.1) (DMH #2 to CB #8)

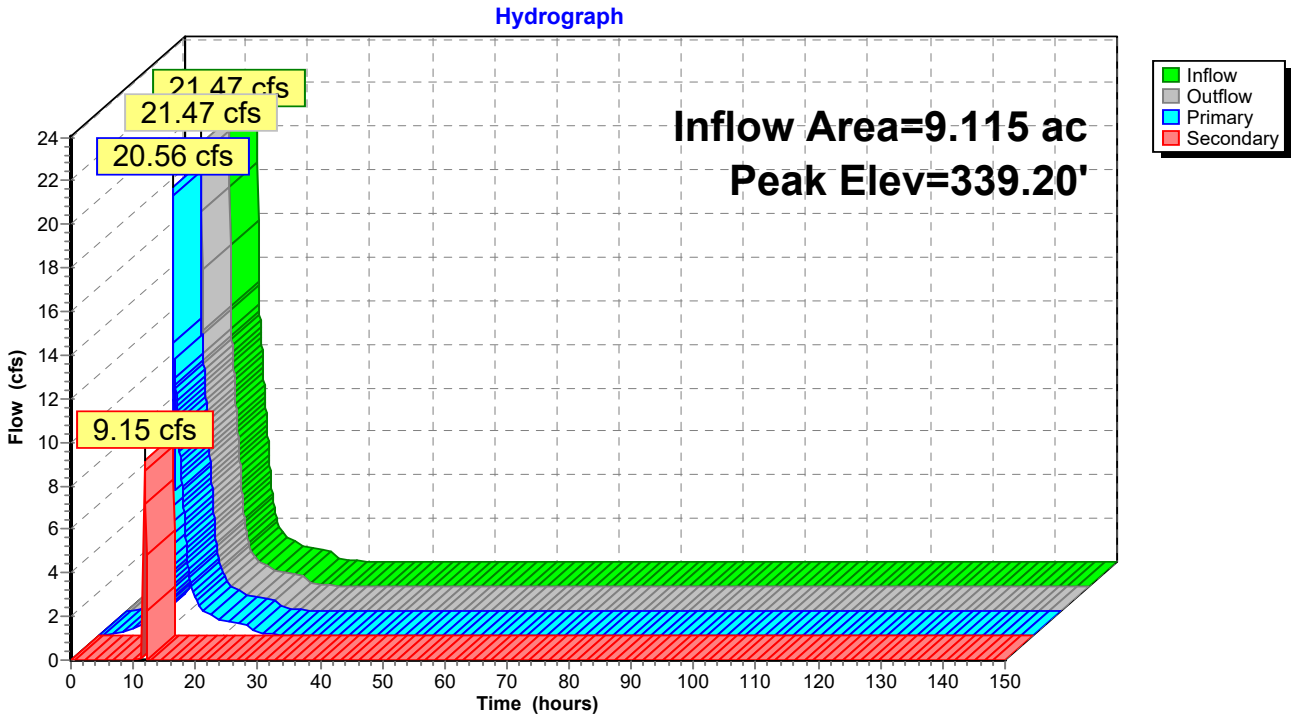
Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 339.20' @ 12.01 hrs
Flood Elev= 338.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	331.55'	**24.0" Round Culvert** L= 38.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 331.55' / 331.15' S= 0.0105 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	338.70'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.98 cfs @ 11.95 hrs HW=338.18' TW=337.91' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 7.98 cfs @ 2.54 fps)

Secondary OutFlow Max=9.00 cfs @ 12.01 hrs HW=339.19' TW=338.58' (Dynamic Tailwater)
└**2=Orifice/Grate** (Weir Controls 9.00 cfs @ 2.29 fps)

Pond 17P: (Rim @ 338.7) (CB #52 to DMH #2)



Summary for Pond 18P: CB #70A Yard Drain

Inflow Area = 0.584 ac, 38.98% Impervious, Inflow Depth = 3.49" for 100-Year event
Inflow = 3.26 cfs @ 11.97 hrs, Volume= 0.170 af
Outflow = 2.37 cfs @ 12.04 hrs, Volume= 0.162 af, Atten= 27%, Lag= 3.7 min
Primary = 2.37 cfs @ 12.04 hrs, Volume= 0.162 af
Routed to Pond 4P : GW 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 334.91' @ 12.04 hrs Surf.Area= 2,299 sf Storage= 1,839 cf

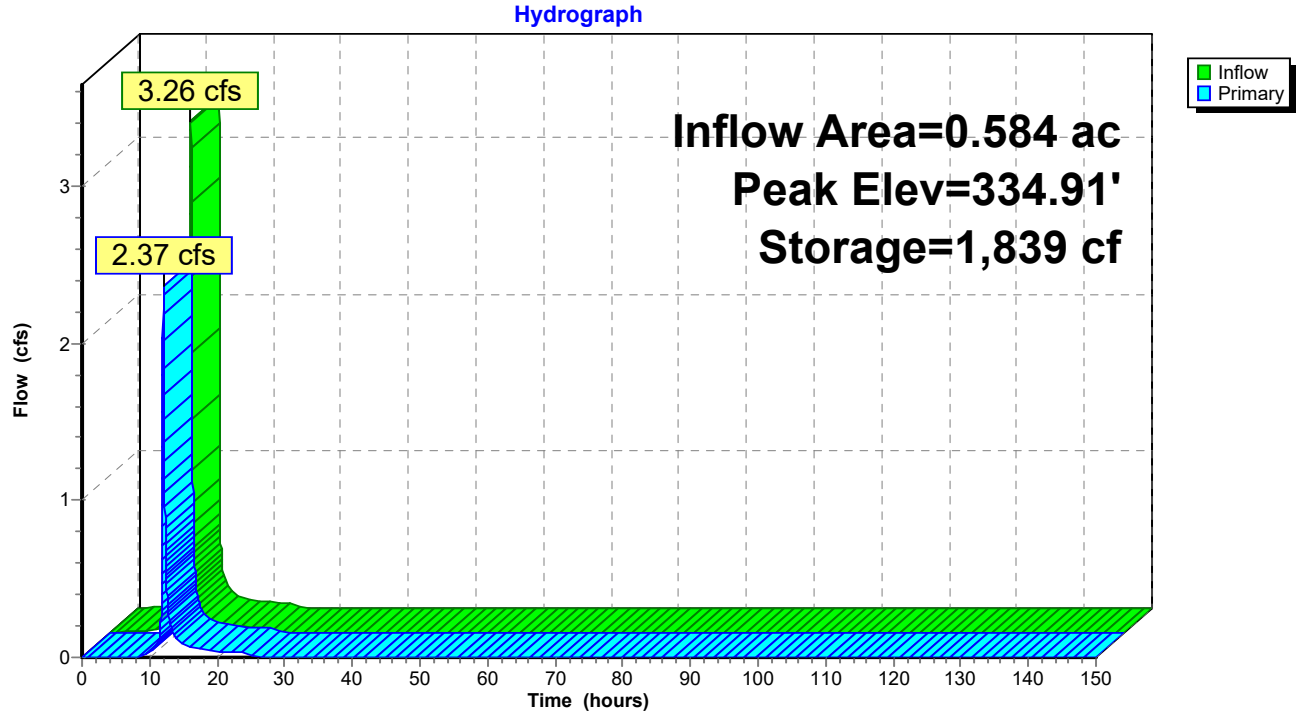
Plug-Flow detention time= 88.4 min calculated for 0.162 af (95% of inflow)
Center-of-Mass det. time= 60.1 min (843.0 - 783.0)

Volume	Invert	Avail.Storage	Storage Description
#1	334.00'	4,736 cf	**25.00'W x 70.00'L x 2.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	334.20'	**18.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.36 cfs @ 12.04 hrs HW=334.91' TW=332.59' (Dynamic Tailwater)
↳**1=Orifice/Grate** (Orifice Controls 2.36 cfs @ 2.87 fps)

Pond 18P: CB #70A Yard Drain



Summary for Pond 21P: (Rim @ 333.5) (CB#4 to CB#1)

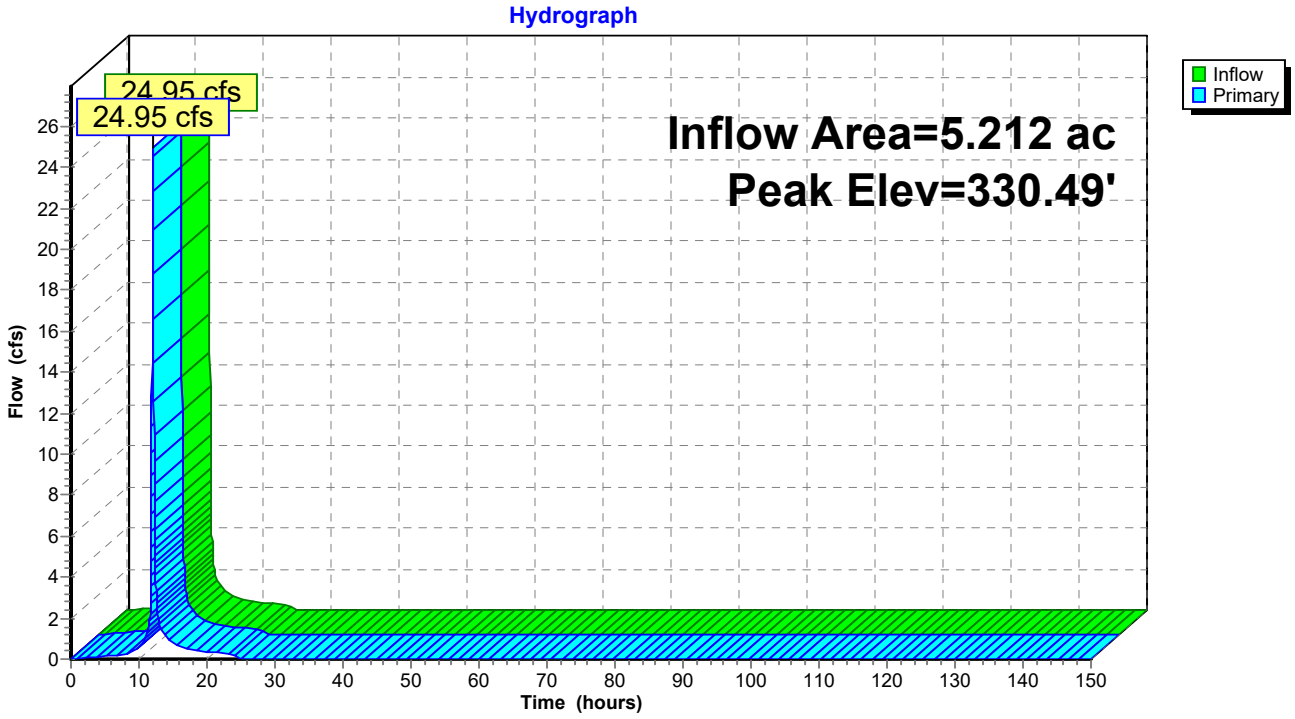
Inflow Area = 5.212 ac, 38.38% Impervious, Inflow Depth = 3.80" for 100-Year event
Inflow = 24.95 cfs @ 12.05 hrs, Volume= 1.652 af
Outflow = 24.95 cfs @ 12.05 hrs, Volume= 1.652 af, Atten= 0%, Lag= 0.0 min
Primary = 24.95 cfs @ 12.05 hrs, Volume= 1.652 af
Routed to Pond CB1 : (Rim @ 331.15) (CB#1 to GW)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 330.49' @ 12.13 hrs
Flood Elev= 333.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	326.98'	**42.0" Round Culvert** L= 193.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 326.98' / 326.02' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 9.62 sf
#2	Primary	333.50'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=19.02 cfs @ 12.05 hrs HW=330.20' TW=329.93' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 19.02 cfs @ 2.69 fps)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 21P: (Rim @ 333.5) (CB#4 to CB#1)



Summary for Pond 33P: (Rim @ 333.8) (DMH #4 to CB #4)

Inflow Area = 5.212 ac, 38.38% Impervious, Inflow Depth = 3.80" for 100-Year event
Inflow = 24.95 cfs @ 12.05 hrs, Volume= 1.652 af
Outflow = 24.95 cfs @ 12.05 hrs, Volume= 1.652 af, Atten= 0%, Lag= 0.0 min
Primary = 24.95 cfs @ 12.05 hrs, Volume= 1.652 af
Routed to Pond 21P : (Rim @ 333.5) (CB#4 to CB#1)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 21P : (Rim @ 333.5) (CB#4 to CB#1)

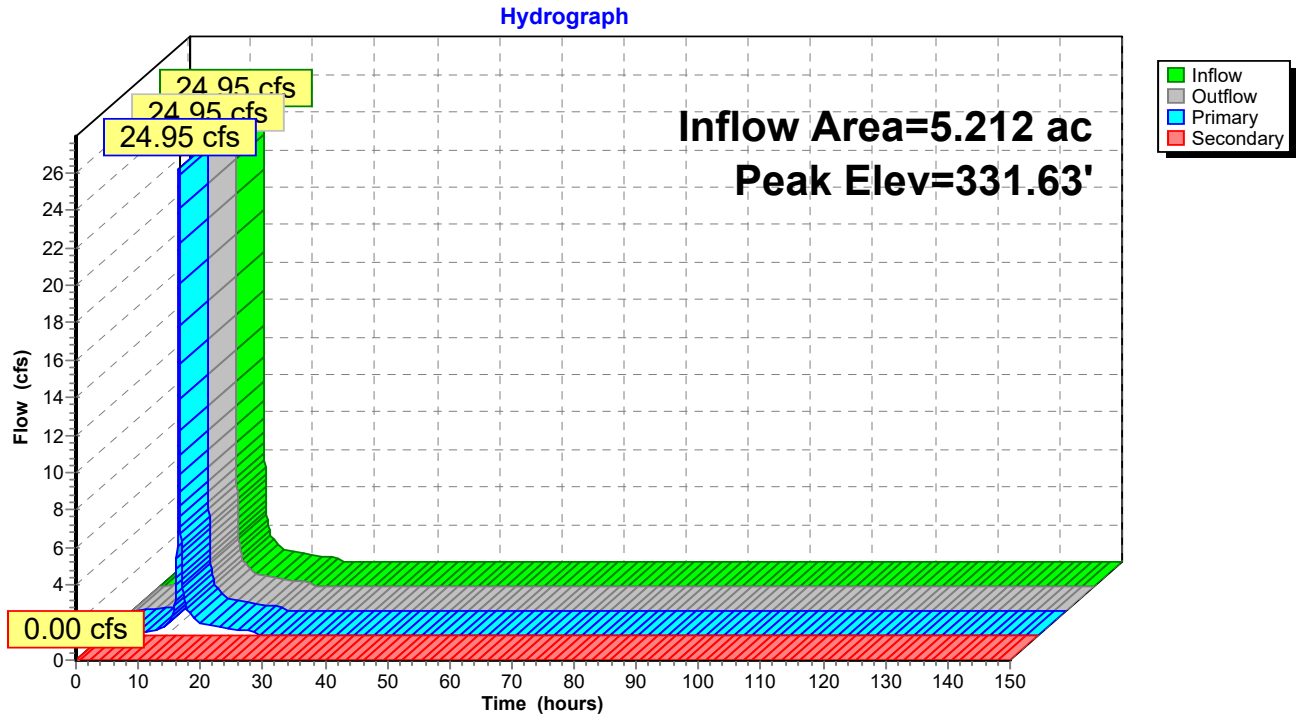
Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 331.63' @ 12.08 hrs
Flood Elev= 333.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	328.90'	**30.0" Round Culvert** L= 179.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 328.90' / 327.00' S= 0.0106 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Secondary	333.80'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=23.44 cfs @ 12.05 hrs HW=331.55' TW=330.20' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 23.44 cfs @ 5.60 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=328.90' TW=326.98' (Dynamic Tailwater)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 33P: (Rim @ 333.8) (DMH #4 to CB #4)



Summary for Pond CB1: (Rim @ 331.15) (CB#1 to GW)

Inflow Area = 9.894 ac, 28.28% Impervious, Inflow Depth = 3.47" for 100-Year event
Inflow = 30.37 cfs @ 12.04 hrs, Volume= 2.865 af
Outflow = 30.37 cfs @ 12.04 hrs, Volume= 2.865 af, Atten= 0%, Lag= 0.0 min
Primary = 30.37 cfs @ 12.04 hrs, Volume= 2.865 af
Routed to Pond 16P : Main Gravel Wetland
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 16P : Main Gravel Wetland

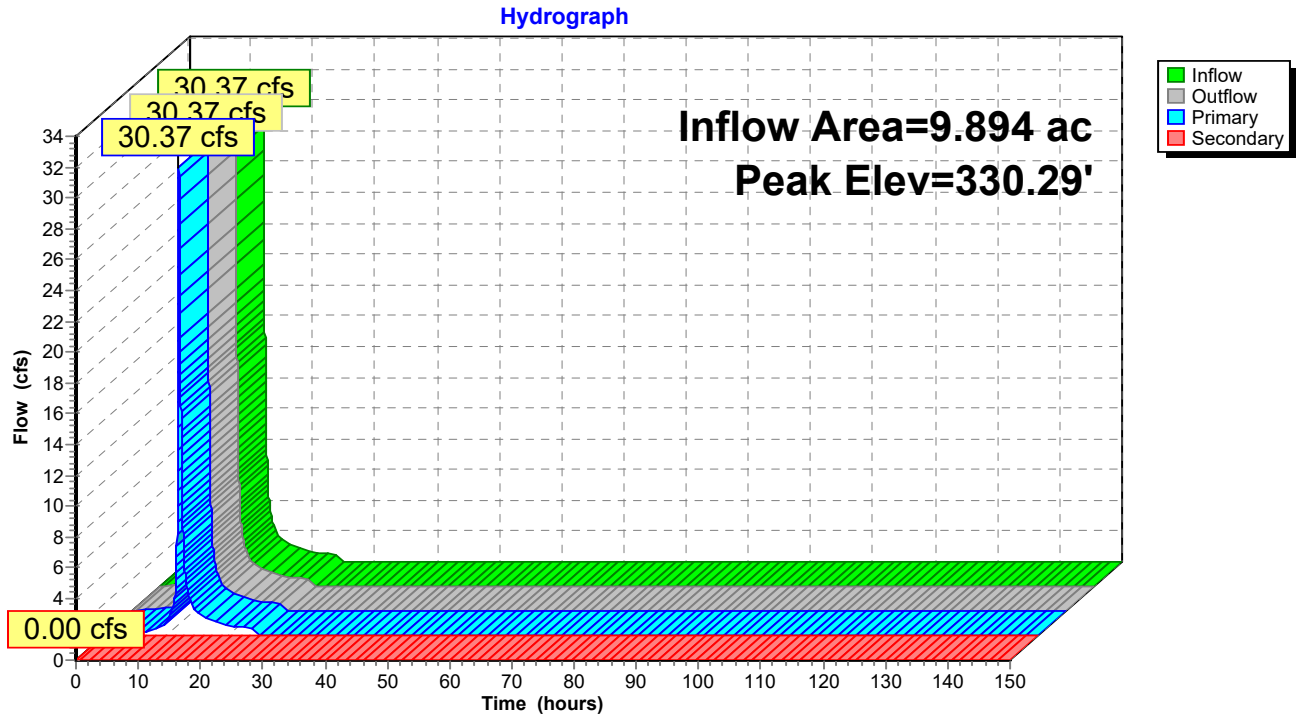
Routing by Dyn-Stor-Ind method, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs
Peak Elev= 330.29' @ 12.14 hrs
Flood Elev= 331.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	326.00'	**42.0" Round Culvert** L= 76.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 326.00' / 325.50' S= 0.0066 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 9.62 sf
#2	Secondary	331.15'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=23.26 cfs @ 12.04 hrs HW=329.86' TW=329.61' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 23.26 cfs @ 2.42 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=326.00' TW=324.50' (Dynamic Tailwater)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB1: (Rim @ 331.15) (CB#1 to GW)



Summary for Link 1L: 42" inlet flow

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Primary outflow = Inflow, Time Span= 0.00-150.00 hrs, dt= 0.02 hrs

Link 1L: 42" inlet flow