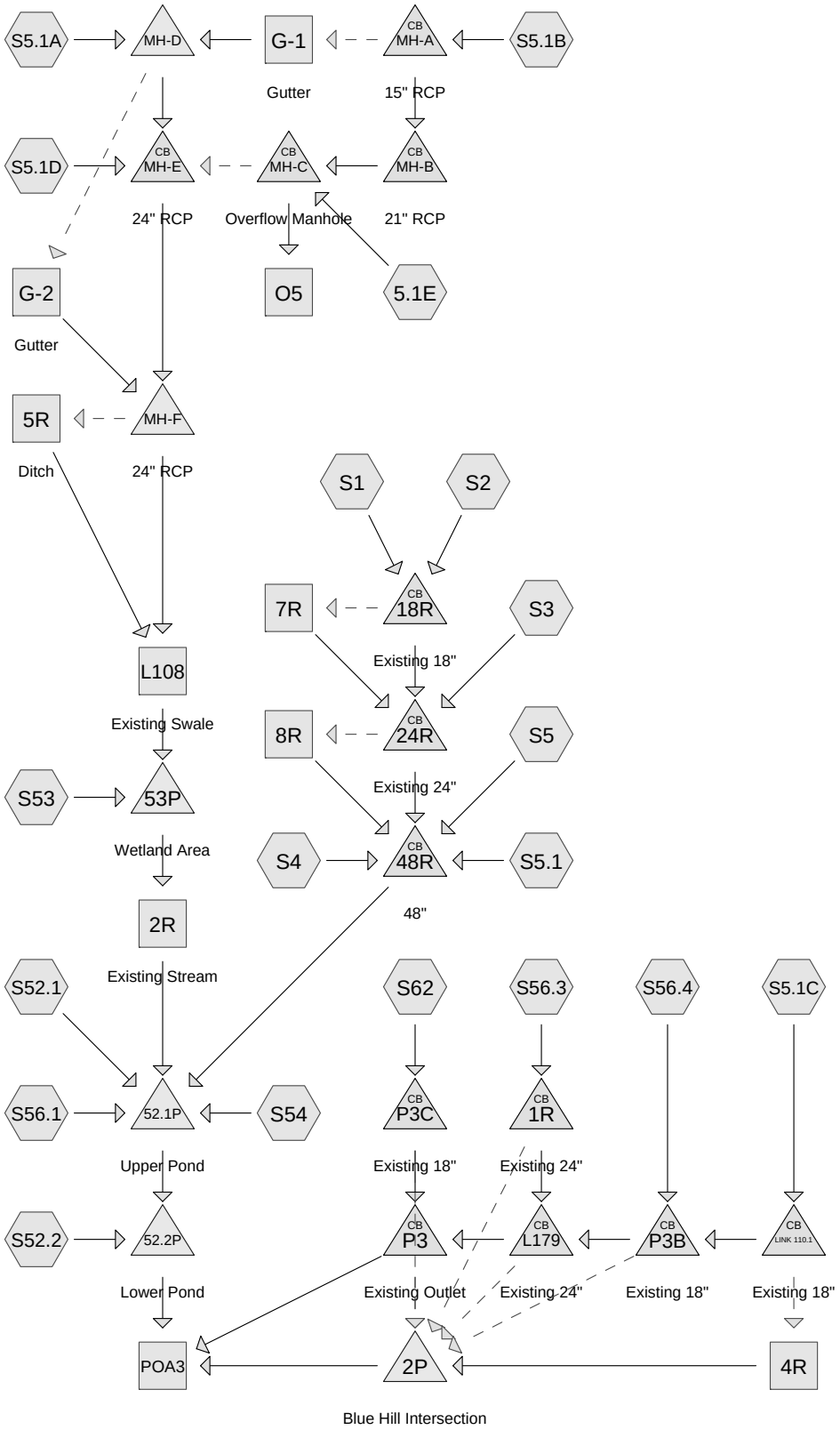


Subcat Reach Pond Link

Routing Diagram for 3659-12003C-Proposed Conditions POA 3-01
Prepared by {enter your company name here}, Printed 1/17/2013

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
9.794	43	(S1, S2)
0.530	65	(S1)
10.237	98	(S1, S2, S3, S4, S5.1)
3.960	69	(S3, S4, S5.1)
9.550	49	(S4)
0.710	60	(S5.1)
27.749	49	50-75% Grass cover, Fair, HSG A (5.1E, S5, S5.1A, S5.1B, S5.1C, S5.1D)
13.063	69	50-75% Grass cover, Fair, HSG B (S5.1C, S56.1, S56.3)
3.195	79	50-75% Grass cover, Fair, HSG C (S5.1B)
0.703	39	>75% Grass cover, Good, HSG A (S56.4)
1.174	98	Paved Areas & Roofs, HSG A (S52.1, S52.2)
11.344	98	Paved parking & roofs (5.1E, S5.1A, S5.1B, S5.1C, S5.1D, S56.1, S56.3, S56.4, S62)
2.951	98	Paved parking, HSG A (S5)
0.445	98	Water Surface, HSG A (S53, S54)
19.982	65	Woods/grass comb., Fair, HSG B (S52.1, S52.2, S53, S54)
115.386	**66**	**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	0.000	34.781	34.781		S1, S2, S3, S4, S5.1
27.749	13.063	3.195	0.000	0.000	44.007	50-75% Grass cover, Fair	5.1E, S5, S5.1A, S5.1B, S5.1C, S5.1D, S56.1, S56.3
0.703	0.000	0.000	0.000	0.000	0.703	>75% Grass cover, Good	S56.4
1.174	0.000	0.000	0.000	0.000	1.174	Paved Areas & Roofs	S52.1, S52.2
2.951	0.000	0.000	0.000	0.000	2.951	Paved parking	S5
0.000	0.000	0.000	0.000	11.344	11.344	Paved parking & roofs	5.1E, S5.1A, S5.1B, S5.1C, S5.1D, S56.1, S56.3, S56.4, S62
0.445	0.000	0.000	0.000	0.000	0.445	Water Surface	S53, S54
0.000	19.982	0.000	0.000	0.000	19.982	Woods/grass comb., Fair	S52.1, S52.2, S53, S54
33.021	**33.045**	**3.195**	**0.000**	**46.125**	**115.386**	**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	5.1E	0.00	0.00	42.0	0.0090	0.012	12.0	0.0	0.0
2	S1	0.00	0.00	42.0	0.0119	0.014	15.0	0.0	0.0
3	S1	0.00	0.00	335.0	0.0198	0.014	18.0	0.0	0.0
4	S2	0.00	0.00	65.0	0.0350	0.014	12.0	0.0	0.0
5	S2	0.00	0.00	216.0	0.0162	0.014	15.0	0.0	0.0
6	S2	0.00	0.00	77.0	0.0272	0.014	18.0	0.0	0.0
7	S4	0.00	0.00	191.0	0.0440	0.014	12.0	0.0	0.0
8	S4	0.00	0.00	347.0	0.0340	0.014	15.0	0.0	0.0
9	S4	0.00	0.00	163.0	0.0092	0.014	18.0	0.0	0.0
10	S4	0.00	0.00	176.0	0.0136	0.014	24.0	0.0	0.0
11	S5.1	0.00	0.00	34.0	0.0090	0.014	12.0	0.0	0.0
12	S5.1	0.00	0.00	163.0	0.0092	0.014	18.0	0.0	0.0
13	S5.1	0.00	0.00	176.0	0.0136	0.014	24.0	0.0	0.0
14	S5.1A	0.00	0.00	20.0	0.0100	0.012	12.0	0.0	0.0
15	S5.1B	0.00	0.00	1,200.0	0.0250	0.012	15.0	0.0	0.0
16	S5.1C	0.00	0.00	1,400.0	0.0500	0.012	12.0	0.0	0.0
17	S5.1D	0.00	0.00	45.0	0.0100	0.012	12.0	0.0	0.0
18	1R	43.90	41.90	166.0	0.0120	0.014	24.0	0.0	0.0
19	18R	107.40	94.80	428.0	0.0294	0.014	18.0	0.0	0.0
20	24R	94.80	79.90	350.0	0.0426	0.014	24.0	0.0	0.0
21	48R	77.70	47.00	1,000.0	0.0307	0.014	48.0	0.0	0.0
22	L179	41.90	41.10	60.0	0.0133	0.014	24.0	0.0	0.0
23	LINK 110.1	46.45	42.50	260.0	0.0152	0.014	18.0	0.0	0.0
24	MH-A	157.00	149.00	250.0	0.0320	0.014	15.0	0.0	0.0
25	MH-B	149.00	147.20	300.0	0.0060	0.012	21.0	0.0	0.0
26	MH-C	146.35	145.32	373.0	0.0028	0.012	24.0	0.0	0.0
27	MH-C	150.19	150.09	10.0	0.0100	0.012	12.0	0.0	0.0
28	MH-D	148.04	145.89	140.0	0.0154	0.012	24.0	0.0	0.0
29	MH-E	145.89	139.09	260.0	0.0262	0.012	24.0	0.0	0.0
30	MH-F	136.51	134.29	75.0	0.0296	0.012	24.0	0.0	0.0
31	P3	41.10	40.66	52.0	0.0085	0.014	24.0	0.0	0.0
32	P3B	42.40	41.90	63.0	0.0079	0.014	18.0	0.0	0.0
33	P3C	43.38	41.20	127.0	0.0172	0.014	18.0	0.0	0.0

Time span=0.00-20.00 hrs, dt=0.01 hrs, 2001 points x 2
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 5.1E: Runoff Area=31,933 sf 41.91% Impervious Runoff Depth>2.23"
Flow Length=142' Tc=7.6 min CN=70 Runoff=1.94 cfs 0.136 af

Subcatchment S1: Runoff Area=9.020 ac 3.55% Impervious Runoff Depth>0.57"
Flow Length=1,389' Tc=13.3 min CN=46 Runoff=3.13 cfs 0.432 af

Subcatchment S2: Runoff Area=218,770 sf 67.66% Impervious Runoff Depth>3.12"
Flow Length=871' Tc=7.2 min CN=80 Runoff=18.79 cfs 1.305 af

Subcatchment S3: Runoff Area=3.484 ac 76.46% Impervious Runoff Depth>4.23"
Tc=5.0 min CN=91 Runoff=17.99 cfs 1.229 af

Subcatchment S4: Runoff Area=13.930 ac 10.84% Impervious Runoff Depth>1.30"
Flow Length=2,418' Tc=20.2 min CN=58 Runoff=14.25 cfs 1.513 af

Subcatchment S5: Runoff Area=169,643 sf 75.76% Impervious Runoff Depth>3.71"
Tc=5.0 min CN=86 Runoff=18.28 cfs 1.204 af

Subcatchment S5.1: Runoff Area=3.325 ac 70.53% Impervious Runoff Depth>3.90"
Flow Length=1,190' Tc=14.6 min CN=88 Runoff=12.06 cfs 1.082 af

Subcatchment S5.1A: Runoff Area=558,034 sf 9.74% Impervious Runoff Depth>1.04"
Flow Length=1,375' Tc=21.0 min CN=54 Runoff=9.62 cfs 1.108 af

Subcatchment S5.1B: Runoff Area=740,256 sf 17.91% Impervious Runoff Depth>1.66"
Flow Length=2,092' Tc=24.8 min CN=63 Runoff=21.35 cfs 2.351 af

Subcatchment S5.1C: Runoff Area=16.789 ac 12.17% Impervious Runoff Depth>2.13"
Flow Length=2,090' Tc=25.1 min CN=69 Runoff=27.60 cfs 2.980 af

Subcatchment S5.1D: Runoff Area=50,009 sf 28.94% Impervious Runoff Depth>1.67"
Flow Length=355' Tc=11.3 min CN=63 Runoff=1.96 cfs 0.160 af

Subcatchment S52.1: Runoff Area=471,416 sf 7.66% Impervious Runoff Depth>2.05"
Flow Length=1,830' Tc=19.7 min CN=68 Runoff=18.91 cfs 1.852 af

Subcatchment S52.2: Runoff Area=151,112 sf 9.97% Impervious Runoff Depth>2.05"
Flow Length=752' Tc=27.6 min CN=68 Runoff=5.24 cfs 0.592 af

Subcatchment S53: Runoff Area=217,375 sf 7.95% Impervious Runoff Depth>2.06"
Flow Length=958' Tc=15.8 min CN=68 Runoff=9.51 cfs 0.855 af

Subcatchment S54: Runoff Area=101,058 sf 2.07% Impervious Runoff Depth>1.90"
Flow Length=625' Tc=18.3 min CN=66 Runoff=3.82 cfs 0.366 af

Subcatchment S56.1: Runoff Area=113,139 sf 53.15% Impervious Runoff Depth>3.51"
Tc=5.0 min CN=84 Runoff=11.65 cfs 0.759 af

Subcatchment S56.3: Runoff Area=85,676 sf 82.51% Impervious Runoff Depth>4.45"
Tc=5.0 min CN=93 Runoff=10.46 cfs 0.730 af

Subcatchment S56.4: Runoff Area=62,965 sf 51.39% Impervious Runoff Depth>2.14"
Flow Length=626' Tc=15.1 min CN=69 Runoff=2.92 cfs 0.258 af

Subcatchment S62: Runoff Area=27,209 sf 100.00% Impervious Runoff Depth>5.02"
Tc=5.0 min CN=98 Runoff=3.49 cfs 0.261 af

Reach 2R: Existing Stream Avg. Flow Depth=0.69' Max Vel=5.73 fps Inflow=21.40 cfs 2.134 af
n=0.030 L=750.0' S=0.0373 '/' Capacity=208.76 cfs Outflow=21.25 cfs 2.127 af

Reach 4R: Avg. Flow Depth=0.44' Max Vel=3.14 fps Inflow=15.48 cfs 0.526 af
n=0.030 L=105.0' S=0.0308 '/' Capacity=135.01 cfs Outflow=15.46 cfs 0.526 af

Reach 5R: Ditch Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
x 2.00 n=0.030 L=65.0' S=0.2385 '/' Capacity=303.75 cfs Outflow=0.00 cfs 0.000 af

Reach 7R: Avg. Flow Depth=0.16' Max Vel=1.72 fps Inflow=2.61 cfs 0.014 af
n=0.030 L=615.0' S=0.0353 '/' Capacity=22.79 cfs Outflow=1.14 cfs 0.014 af

Reach 8R: Avg. Flow Depth=0.13' Max Vel=1.59 fps Inflow=1.65 cfs 0.006 af
n=0.030 L=450.0' S=0.0423 '/' Capacity=24.94 cfs Outflow=0.63 cfs 0.006 af

Reach G-1: Gutter Avg. Flow Depth=0.28' Max Vel=2.31 fps Inflow=9.37 cfs 0.270 af
x 2.00 n=0.030 L=240.0' S=0.0304 '/' Capacity=42.29 cfs Outflow=9.25 cfs 0.270 af

Reach G-2: Gutter Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.030 L=260.0' S=0.0247 '/' Capacity=19.05 cfs Outflow=0.00 cfs 0.000 af

Reach L108: Existing Swale Avg. Flow Depth=0.14' Max Vel=3.38 fps Inflow=19.92 cfs 1.538 af
n=0.030 L=774.0' S=0.0646 '/' Capacity=1,762.00 cfs Outflow=19.42 cfs 1.527 af

Reach O5: Inflow=13.48 cfs 2.217 af
Outflow=13.48 cfs 2.217 af

Reach POA3: Inflow=37.33 cfs 8.349 af
Outflow=37.33 cfs 8.349 af

Pond 1R: Existing 24" Peak Elev=46.44' Inflow=10.46 cfs 0.730 af
Primary=10.46 cfs 0.730 af Secondary=0.00 cfs 0.000 af Outflow=10.46 cfs 0.730 af

Pond 2P: Blue Hill Intersection Peak Elev=47.24' Storage=12,225 cf Inflow=16.85 cfs 0.617 af
Outflow=13.63 cfs 0.491 af

Pond 18R: Existing 18" Peak Elev=116.31' Inflow=19.85 cfs 1.737 af
Primary=17.76 cfs 1.723 af Secondary=2.61 cfs 0.014 af Outflow=19.85 cfs 1.737 af

Pond 24R: Existing 24" Peak Elev=100.72' Inflow=35.19 cfs 2.966 af
Primary=33.54 cfs 2.960 af Secondary=1.65 cfs 0.006 af Outflow=35.19 cfs 2.966 af

Pond 48R: 48" Peak Elev=80.94' Inflow=66.97 cfs 6.765 af
48.0" Round Culvert n=0.014 L=1,000.0' S=0.0307 '/' Outflow=66.97 cfs 6.765 af

Pond 52.1P: Upper Pond Peak Elev=51.28' Storage=122,938 cf Inflow=90.84 cfs 11.869 af
Primary=18.52 cfs 4.293 af Secondary=33.84 cfs 7.123 af Outflow=52.15 cfs 11.416 af

Pond 52.2P: Lower Pond Peak Elev=49.20' Storage=81,716 cf Inflow=23.50 cfs 4.885 af
Outflow=10.24 cfs 4.247 af

Pond 53P: Wetland Area Peak Elev=79.91' Storage=22,499 cf Inflow=26.26 cfs 2.382 af
Outflow=21.40 cfs 2.134 af

Pond L179: Existing 24" Peak Elev=45.83' Inflow=18.43 cfs 3.350 af
Primary=18.43 cfs 3.350 af Secondary=0.00 cfs 0.000 af Outflow=18.43 cfs 3.350 af

Pond LINK 110.1: Existing 18" Peak Elev=52.32' Inflow=27.60 cfs 2.980 af
Primary=12.14 cfs 2.454 af Secondary=15.48 cfs 0.526 af Outflow=27.60 cfs 2.980 af

Pond MH-A: 15" RCP Peak Elev=163.16' Inflow=21.35 cfs 2.351 af
Primary=11.98 cfs 2.081 af Secondary=9.37 cfs 0.270 af Outflow=21.35 cfs 2.351 af

Pond MH-B: 21" RCP Peak Elev=150.94' Inflow=11.98 cfs 2.081 af
21.0" Round Culvert n=0.012 L=300.0' S=0.0060 '/' Outflow=11.98 cfs 2.081 af

Pond MH-C: Overflow Manhole Peak Elev=148.61' Inflow=13.48 cfs 2.217 af
Primary=13.48 cfs 2.217 af Secondary=0.00 cfs 0.000 af Outflow=13.48 cfs 2.217 af

Pond MH-D: Peak Elev=152.99' Storage=0 cf Inflow=18.72 cfs 1.378 af
Primary=18.72 cfs 1.378 af Secondary=0.00 cfs 0.000 af Outflow=18.72 cfs 1.378 af

Pond MH-E: 24" RCP Peak Elev=150.95' Inflow=19.92 cfs 1.538 af
24.0" Round Culvert n=0.012 L=260.0' S=0.0262 '/' Outflow=19.92 cfs 1.538 af

Pond MH-F: 24" RCP Peak Elev=148.29' Storage=0 cf Inflow=19.92 cfs 1.538 af
Primary=19.92 cfs 1.538 af Secondary=0.00 cfs 0.000 af Outflow=19.92 cfs 1.538 af

Pond P3: Existing Outlet Peak Elev=44.36' Inflow=21.90 cfs 3.612 af
Primary=21.90 cfs 3.612 af Secondary=0.00 cfs 0.000 af Outflow=21.90 cfs 3.612 af

Pond P3B: Existing 18" Peak Elev=47.24' Inflow=14.81 cfs 2.712 af
Primary=13.64 cfs 2.621 af Secondary=5.09 cfs 0.091 af Outflow=14.81 cfs 2.712 af

Pond P3C: Existing 18" Peak Elev=44.76' Inflow=3.49 cfs 0.261 af
Primary=3.49 cfs 0.261 af Secondary=0.00 cfs 0.000 af Outflow=3.49 cfs 0.261 af

Total Runoff Area = 115.386 ac Runoff Volume = 19.173 af Average Runoff Depth = 1.99"
77.34% Pervious = 89.236 ac 22.66% Impervious = 26.150 ac

Summary for Subcatchment 5.1E:

Runoff = 1.94 cfs @ 12.11 hrs, Volume= 0.136 af, Depth> 2.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
18,551	49	50-75% Grass cover, Fair, HSG A
13,382	98	Paved parking & roofs
31,933	70	Weighted Average
18,551		58.09% Pervious Area
13,382		41.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.0400	0.22		**Sheet Flow, Sheet** Grass: Short n= 0.150 P2= 3.20"
0.2	42	0.0090	4.66	3.66	**Pipe Channel, 12" RCP** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
7.6	142	Total			

Summary for Subcatchment S1:

Runoff = 3.13 cfs @ 12.31 hrs, Volume= 0.432 af, Depth> 0.57"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

	Area (ac)	CN	Description
*	8.170	43	
*	0.530	65	
*	0.320	98	
	9.020	46	Weighted Average
	8.700		96.45% Pervious Area
	0.320		3.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0250	0.19		**Sheet Flow, Sheet** Grass: Short n= 0.150 P2= 3.20"
3.2	843	0.0735	4.36		**Shallow Concentrated Flow, Shallow Conc** Unpaved Kv= 16.1 fps
0.3	69	0.0371	3.91		**Shallow Concentrated Flow, Shallow Conc** Paved Kv= 20.3 fps
0.1	42	0.0119	5.33	6.54	**Pipe Channel, 15" RCP** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.014
0.7	335	0.0198	7.77	13.73	**Pipe Channel, 18" RCP** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38'

n= 0.014

13.3	1,389	Total

Summary for Subcatchment S2:

Runoff = 18.79 cfs @ 12.10 hrs, Volume= 1.305 af, Depth> 3.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

	Area (sf)	CN	Description
*	70,760	43	
*	148,010	98	
	218,770	80	Weighted Average
	70,760		32.34% Pervious Area
	148,010		67.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	100	0.1100	0.34		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.20"
0.9	287	0.1220	5.62		**Shallow Concentrated Flow, Shallow Conc** Unpaved Kv= 16.1 fps
0.5	126	0.0425	4.18		**Shallow Concentrated Flow, Shallow Conc** Paved Kv= 20.3 fps
0.1	65	0.0350	7.88	6.19	**Pipe Channel, 12" RCP** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.014
0.6	216	0.0162	6.22	7.63	**Pipe Channel, 15" RCP** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.014
0.1	77	0.0272	9.10	16.09	**Pipe Channel, 18" RCP** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.014
7.2	871	Total			

Summary for Subcatchment S3:

Runoff = 17.99 cfs @ 12.07 hrs, Volume= 1.229 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

	Area (ac)	CN	Description
*	0.820	69	
*	2.664	98	
	3.484	91	Weighted Average
	0.820		23.54% Pervious Area
	2.664		76.46% Impervious Area

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

Summary for Subcatchment S4:

Runoff = 14.25 cfs @ 12.32 hrs, Volume= 1.513 af, Depth> 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

	Area (ac)	CN	Description
*	9.550	49	
*	2.870	69	
*	1.510	98	
	13.930	58	Weighted Average
	12.420		89.16% Pervious Area
	1.510		10.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0140	0.15		**Sheet Flow, Sheet** Grass: Short n= 0.150 P2= 3.20"
3.2	656	0.0460	3.45		**Shallow Concentrated Flow, Shallow Conc** Unpaved Kv= 16.1 fps
1.2	340	0.0870	4.75		**Shallow Concentrated Flow, Shallow Conc** Unpaved Kv= 16.1 fps
2.6	445	0.0200	2.87		**Shallow Concentrated Flow, Shallow Conc** Paved Kv= 20.3 fps
0.4	191	0.0440	8.84	6.94	**Pipe Channel, 12" RCP** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.014
0.6	347	0.0340	9.01	11.06	**Pipe Channel, 15" RCP** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.014
0.5	163	0.0092	5.29	9.36	**Pipe Channel, 18" RCP** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.014
0.4	176	0.0136	7.80	24.50	**Pipe Channel, 24" RCP** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.014
20.2	2,418	Total			

Summary for Subcatchment S5:

Runoff = 18.28 cfs @ 12.07 hrs, Volume= 1.204 af, Depth> 3.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
41,115	49	50-75% Grass cover, Fair, HSG A
128,528	98	Paved parking, HSG A
169,643	86	Weighted Average
41,115		24.24% Pervious Area
128,528		75.76% Impervious Area

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

Summary for Subcatchment S5.1:

Runoff = 12.06 cfs @ 12.19 hrs, Volume= 1.082 af, Depth> 3.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

	Area (ac)	CN	Description
*	0.270	69	
*	0.710	60	
*	2.345	98	
	3.325	88	Weighted Average
	0.980		29.47% Pervious Area
	2.345		70.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	100	0.1100	0.15		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.20"
1.4	397	0.0910	4.86		**Shallow Concentrated Flow, Shallow Conc** Unpaved Kv= 16.1 fps
1.3	320	0.0410	4.11		**Shallow Concentrated Flow, Shallow Conc** Paved Kv= 20.3 fps
0.1	34	0.0090	4.00	3.14	**Pipe Channel, 12" RCP** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.014
0.5	163	0.0092	5.29	9.36	**Pipe Channel, 18" RCP** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.014
0.4	176	0.0136	7.80	24.50	**Pipe Channel, 24" RCP** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.014
14.6	1,190	Total			

Summary for Subcatchment S5.1A:

Runoff = 9.62 cfs @ 12.34 hrs, Volume= 1.108 af, Depth> 1.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
503,709	49	50-75% Grass cover, Fair, HSG A
54,325	98	Paved parking & roofs
558,034	54	Weighted Average
503,709		90.26% Pervious Area
54,325		9.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	100	0.0100	0.13		**Sheet Flow, Sheet** Grass: Short n= 0.150 P2= 3.20"
7.2	1,100	0.0250	2.55		**Shallow Concentrated Flow, Shallow Conc** Unpaved Kv= 16.1 fps
0.8	155	0.0250	3.21		**Shallow Concentrated Flow, Shallow Conc** Paved Kv= 20.3 fps
0.1	20	0.0100	4.91	3.86	**Pipe Channel, 12" RCP** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
21.0	1,375	Total			

Summary for Subcatchment S5.1B:

Runoff = 21.35 cfs @ 12.37 hrs, Volume= 2.351 af, Depth> 1.66"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
468,516	49	50-75% Grass cover, Fair, HSG A
139,183	79	50-75% Grass cover, Fair, HSG C
132,557	98	Paved parking & roofs
740,256	63	Weighted Average
607,699		82.09% Pervious Area
132,557		17.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0500	0.11		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.20"
4.2	461	0.0130	1.84		**Shallow Concentrated Flow, Shallow Conc** Unpaved Kv= 16.1 fps
3.5	331	0.0060	1.57		**Shallow Concentrated Flow, Shallow Conc** Paved Kv= 20.3 fps
2.2	1,200	0.0250	9.02	11.06	**Pipe Channel, 15" RCP** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
24.8	2,092	Total			

Summary for Subcatchment S5.1C:

Runoff = 27.60 cfs @ 12.36 hrs, Volume= 2.980 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (ac)	CN	Description
3.244	49	50-75% Grass cover, Fair, HSG A
11.502	69	50-75% Grass cover, Fair, HSG B
2.043	98	Paved parking & roofs
16.789	69	Weighted Average
14.746		87.83% Pervious Area
2.043		12.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0500	0.11		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.20"
8.1	590	0.0590	1.21		**Shallow Concentrated Flow, Shallow Conc** Woodland Kv= 5.0 fps
2.1	1,400	0.0500	10.99	8.63	**Pipe Channel, Pipe** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
25.1	2,090	Total			

Summary for Subcatchment S5.1D:

Runoff = 1.96 cfs @ 12.17 hrs, Volume= 0.160 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
35,534	49	50-75% Grass cover, Fair, HSG A
14,475	98	Paved parking & roofs
50,009	63	Weighted Average
35,534		71.06% Pervious Area
14,475		28.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0200	0.17		**Sheet Flow, Sheet** Grass: Short n= 0.150 P2= 3.20"
1.3	210	0.0280	2.69		**Shallow Concentrated Flow, Shallow Conc** Unpaved Kv= 16.1 fps
0.2	45	0.0100	4.91	3.86	**Pipe Channel, 12" RCP** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
11.3	355	Total			

Summary for Subcatchment S52.1:

Runoff = 18.91 cfs @ 12.28 hrs, Volume= 1.852 af, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

	Area (sf)	CN	Description
	435,325	65	Woods/grass comb., Fair, HSG B
*	36,091	98	Paved Areas & Roofs, HSG A
	471,416	68	Weighted Average
	435,325		92.34% Pervious Area
	36,091		7.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0800	0.14		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.20"
7.4	1,730	0.0580	3.88		**Shallow Concentrated Flow, Shallow Conc** Unpaved Kv= 16.1 fps
19.7	1,830	Total			

Summary for Subcatchment S52.2:

Runoff = 5.24 cfs @ 12.41 hrs, Volume= 0.592 af, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

	Area (sf)	CN	Description
	136,043	65	Woods/grass comb., Fair, HSG B
*	15,069	98	Paved Areas & Roofs, HSG A
	151,112	68	Weighted Average
	136,043		90.03% Pervious Area
	15,069		9.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	100	0.0140	0.07		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.20"
2.8	652	0.0580	3.88		**Shallow Concentrated Flow, Shallow Conc** Unpaved Kv= 16.1 fps
27.6	752	Total			

Summary for Subcatchment S53:

Runoff = 9.51 cfs @ 12.23 hrs, Volume= 0.855 af, Depth> 2.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
200,092	65	Woods/grass comb., Fair, HSG B
17,283	98	Water Surface, HSG A
217,375	68	Weighted Average
200,092		92.05% Pervious Area
17,283		7.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1300	0.36		**Sheet Flow, Sheet** Grass: Short n= 0.150 P2= 3.20"
11.2	858	0.0650	1.27		**Shallow Concentrated Flow, Shallow Conc** Woodland Kv= 5.0 fps
15.8	958	Total			

Summary for Subcatchment S54:

Runoff = 3.82 cfs @ 12.26 hrs, Volume= 0.366 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
98,969	65	Woods/grass comb., Fair, HSG B
2,089	98	Water Surface, HSG A
101,058	66	Weighted Average
98,969		97.93% Pervious Area
2,089		2.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.1200	0.16		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.20"
7.8	525	0.0500	1.12		**Shallow Concentrated Flow, Shallow Conc** Woodland Kv= 5.0 fps
18.3	625	Total			

Summary for Subcatchment S56.1:

Runoff = 11.65 cfs @ 12.07 hrs, Volume= 0.759 af, Depth> 3.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
53,002	69	50-75% Grass cover, Fair, HSG B
60,137	98	Paved parking & roofs
113,139	84	Weighted Average
53,002		46.85% Pervious Area
60,137		53.15% Impervious Area

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

Summary for Subcatchment S56.3:

Runoff = 10.46 cfs @ 12.07 hrs, Volume= 0.730 af, Depth> 4.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
14,981	69	50-75% Grass cover, Fair, HSG B
70,695	98	Paved parking & roofs
85,676	93	Weighted Average
14,981		17.49% Pervious Area
70,695		82.51% Impervious Area

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

Summary for Subcatchment S56.4:

Runoff = 2.92 cfs @ 12.21 hrs, Volume= 0.258 af, Depth> 2.14"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
30,607	39	>75% Grass cover, Good, HSG A
32,358	98	Paved parking & roofs
62,965	69	Weighted Average
30,607		48.61% Pervious Area
32,358		51.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.0950	0.14		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.20"
1.5	298	0.0440	3.38		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.1	228	0.0080	1.82		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
15.1	626	Total			

Summary for Subcatchment S62:

Runoff = 3.49 cfs @ 12.07 hrs, Volume= 0.261 af, Depth> 5.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
27,209	98	Paved parking & roofs
27,209		100.00% Impervious Area

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

Summary for Reach 2R: Existing Stream

Inflow Area = 18.949 ac, 10.43% Impervious, Inflow Depth > 1.35" for 25-Year event
Inflow = 21.40 cfs @ 12.54 hrs, Volume= 2.134 af
Outflow = 21.25 cfs @ 12.56 hrs, Volume= 2.127 af, Atten= 1%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 5.73 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 2.96 fps, Avg. Travel Time= 4.2 min

Peak Storage= 2,780 cf @ 12.56 hrs
Average Depth at Peak Storage= 0.69'
Bank-Full Depth= 2.00' Flow Area= 20.0 sf, Capacity= 208.76 cfs

3.00' x 2.00' deep channel, n= 0.030
Side Slope Z-value= 3.5 '/' Top Width= 17.00'
Length= 750.0' Slope= 0.0373 '/'
Inlet Invert= 79.00', Outlet Invert= 51.00'

‡

Summary for Reach 4R:

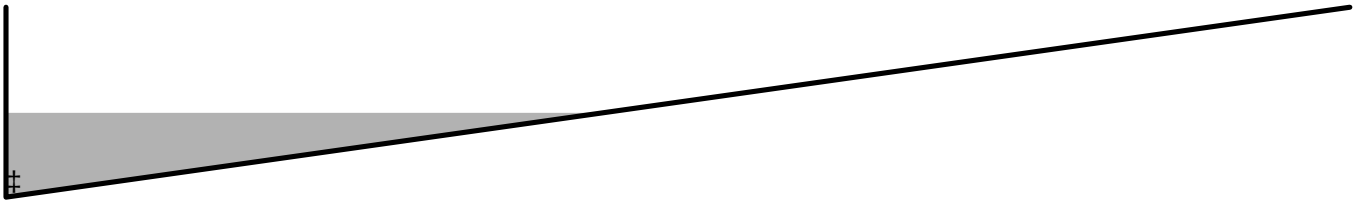
[80] Warning: Exceeded Pond LINK 110.1 by 4.18' @ 16.41 hrs (0.00 cfs 0.004 af)

Inflow = 15.48 cfs @ 12.36 hrs, Volume= 0.526 af
Outflow = 15.46 cfs @ 12.37 hrs, Volume= 0.526 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 3.14 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.54 fps, Avg. Travel Time= 1.1 min

Peak Storage= 517 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.44'
Bank-Full Depth= 1.00' Flow Area= 25.0 sf, Capacity= 135.01 cfs

0.00' x 1.00' deep channel, n= 0.030
Side Slope Z-value= 0.0 50.0 '/' Top Width= 50.00'
Length= 105.0' Slope= 0.0308 '/'
Inlet Invert= 51.23', Outlet Invert= 48.00'



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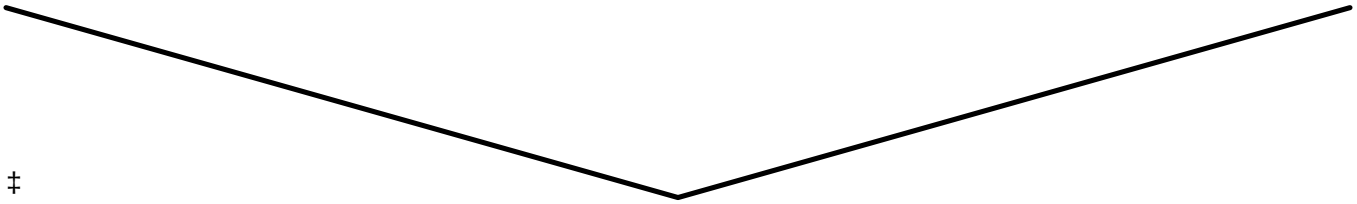
Summary for Reach 5R: Ditch

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 303.75 cfs

A factor of 2.00 has been applied to the storage and discharge capacity
0.00' x 1.00' deep channel, n= 0.030 Earth, dense weeds
Side Slope Z-value= 10.0 '/' Top Width= 20.00'
Length= 65.0' Slope= 0.2385 '/'
Inlet Invert= 149.79', Outlet Invert= 134.29'



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Summary for Reach 7R:

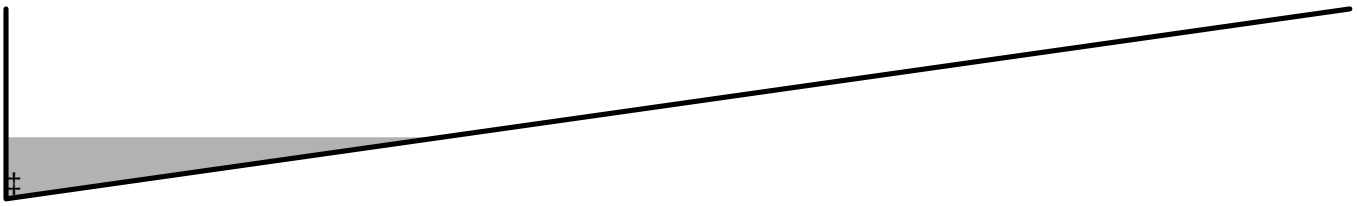
[80] Warning: Exceeded Pond 18R by 8.33' @ 19.99 hrs (0.00 cfs 0.031 af)

Inflow	=	2.61 cfs @	12.11 hrs,	Volume=	0.014 af
Outflow	=	1.14 cfs @	12.15 hrs,	Volume=	0.014 af, Atten= 57%, Lag= 2.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 1.72 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.35 fps, Avg. Travel Time= 28.9 min

Peak Storage= 405 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 22.79 cfs

0.00' x 0.50' deep channel, n= 0.030
Side Slope Z-value= 0.0 50.0 '/' Top Width= 25.00'
Length= 615.0' Slope= 0.0353 '/'
Inlet Invert= 116.06', Outlet Invert= 94.33'



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Summary for Reach 8R:

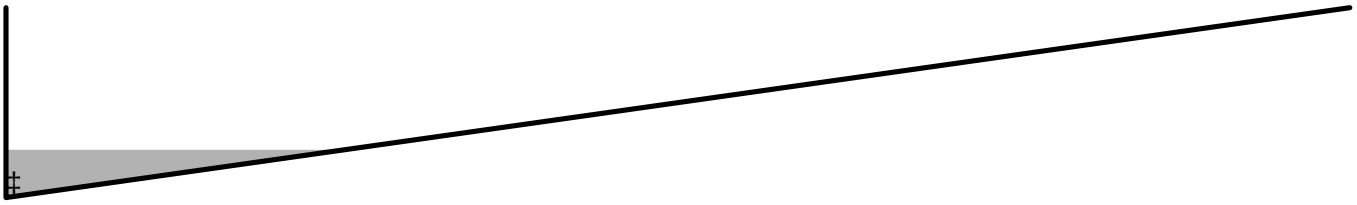
[80] Warning: Exceeded Pond 24R by 5.37' @ 19.99 hrs (0.00 cfs 0.017 af)

Inflow	=	1.65 cfs @	12.07 hrs,	Volume=	0.006 af
Outflow	=	0.63 cfs @	12.11 hrs,	Volume=	0.006 af, Atten= 62%, Lag= 2.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 1.59 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.37 fps, Avg. Travel Time= 20.4 min

Peak Storage= 178 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 24.94 cfs

0.00' x 0.50' deep channel, n= 0.030
Side Slope Z-value= 0.0 50.0 '/' Top Width= 25.00'
Length= 450.0' Slope= 0.0423 '/'
Inlet Invert= 100.54', Outlet Invert= 81.50'



Summary for Reach G-1: Gutter

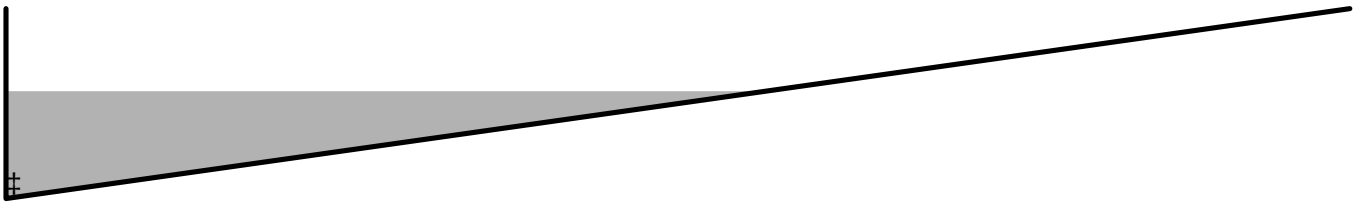
[80] Warning: Exceeded Pond MH-A by 5.17' @ 19.99 hrs (0.00 cfs 0.011 af)

Inflow	=	9.37 cfs @	12.37 hrs, Volume=	0.270 af
Outflow	=	9.25 cfs @	12.39 hrs, Volume=	0.270 af, Atten= 1%, Lag= 1.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 2.31 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 6.4 min

Peak Storage= 959 cf @ 12.39 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 0.50' Flow Area= 12.5 sf, Capacity= 42.29 cfs

A factor of 2.00 has been applied to the storage and discharge capacity
0.00' x 0.50' deep channel, n= 0.030
Side Slope Z-value= 0.0 50.0 '/' Top Width= 25.00'
Length= 240.0' Slope= 0.0304 '/'
Inlet Invert= 162.60', Outlet Invert= 155.30'



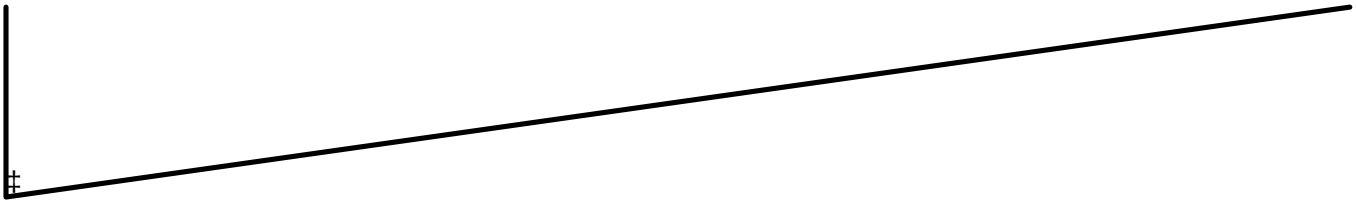
Summary for Reach G-2: Gutter

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 0.50' Flow Area= 6.3 sf, Capacity= 19.05 cfs

0.00' x 0.50' deep channel, n= 0.030
Side Slope Z-value= 0.0 50.0 '/' Top Width= 25.00'
Length= 260.0' Slope= 0.0247 '/'
Inlet Invert= 154.71', Outlet Invert= 148.29'



Summary for Reach L108: Existing Swale

Inflow Area = 13.959 ac, 11.31% Impervious, Inflow Depth > 1.32" for 25-Year event
Inflow = 19.92 cfs @ 12.38 hrs, Volume= 1.538 af
Outflow = 19.42 cfs @ 12.42 hrs, Volume= 1.527 af, Atten= 3%, Lag= 2.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 3.38 fps, Min. Travel Time= 3.8 min
Avg. Velocity = 1.24 fps, Avg. Travel Time= 10.4 min

Peak Storage= 4,451 cf @ 12.42 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 2.00' Flow Area= 100.0 sf, Capacity= 1,762.00 cfs

40.00' x 2.00' deep channel, n= 0.030
Side Slope Z-value= 5.0 '/' Top Width= 60.00'
Length= 774.0' Slope= 0.0646 '/'
Inlet Invert= 132.00', Outlet Invert= 82.00'

Summary for Reach O5:

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

Inflow Area = 17.727 ac, 18.90% Impervious, Inflow Depth > 1.50" for 25-Year event
Inflow = 13.48 cfs @ 12.16 hrs, Volume= 2.217 af
Outflow = 13.48 cfs @ 12.16 hrs, Volume= 2.217 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2

Summary for Reach POA3:

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

Inflow Area = 97.659 ac, 23.35% Impervious, Inflow Depth > 1.03" for 25-Year event
Inflow = 37.33 cfs @ 12.46 hrs, Volume= 8.349 af
Outflow = 37.33 cfs @ 12.46 hrs, Volume= 8.349 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2

Summary for Pond 1R: Existing 24"

[57] Hint: Peaked at 46.44' (Flood elevation advised)

Inflow Area = 1.967 ac, 82.51% Impervious, Inflow Depth > 4.45" for 25-Year event
Inflow = 10.46 cfs @ 12.07 hrs, Volume= 0.730 af
Outflow = 10.46 cfs @ 12.07 hrs, Volume= 0.730 af, Atten= 0%, Lag= 0.0 min
Primary = 10.46 cfs @ 12.07 hrs, Volume= 0.730 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 46.44' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	43.90'	**24.0" Round Culvert** L= 166.0' Ke= 0.500 Inlet / Outlet Invert= 43.90' / 41.90' S= 0.0120 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf
#2	Secondary	46.30'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.36 cfs @ 12.07 hrs HW=46.44' TW=45.82' (Dynamic Tailwater)
1=Culvert (Outlet Controls 10.36 cfs @ 3.36 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=43.90' TW=46.50' (Dynamic Tailwater)
2=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond 2P: Blue Hill Intersection

[80] Warning: Exceeded Pond 1R by 2.95' @ 19.99 hrs (15.69 cfs 12.889 af)
[80] Warning: Exceeded Pond L179 by 4.67' @ 19.99 hrs (1.08 cfs 0.978 af)
[80] Warning: Exceeded Pond P3 by 5.43' @ 19.99 hrs (21.28 cfs 29.689 af)
[80] Warning: Exceeded Pond P3B by 4.11' @ 19.99 hrs (20.12 cfs 23.901 af)
[80] Warning: Exceeded Pond P3C by 3.54' @ 19.99 hrs (3.04 cfs 2.327 af)

Inflow = 16.85 cfs @ 12.33 hrs, Volume= 0.617 af
Outflow = 13.63 cfs @ 12.47 hrs, Volume= 0.491 af, Atten= 19%, Lag= 8.4 min
Primary = 13.63 cfs @ 12.47 hrs, Volume= 0.491 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 47.24' @ 12.47 hrs Surf.Area= 36,516 sf Storage= 12,225 cf

Plug-Flow detention time= 22.3 min calculated for 0.491 af (79% of inflow)
Center-of-Mass det. time= 18.6 min (761.8 - 743.1)

Volume	Invert	Avail.Storage	Storage Description
#1	46.50'	58,355 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.50	10	0	0
47.00	21,119	5,282	5,282
48.00	85,027	53,073	58,355

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	**Curb, C= 3.27** Offset (feet) 0.00 140.50 231.95 323.40 493.00 Elev. (feet) 48.50 47.50 47.00 47.50 48.50

Primary OutFlow Max=13.63 cfs @ 12.47 hrs HW=47.24' TW=0.00' (Dynamic Tailwater)
↑**1=Curb** (Weir Controls 13.63 cfs @ 0.64 fps)

Summary for Pond 18R: Existing 18"

[57] Hint: Peaked at 116.31' (Flood elevation advised)

Inflow Area = 14.042 ac, 26.48% Impervious, Inflow Depth > 1.48" for 25-Year event
Inflow = 19.85 cfs @ 12.11 hrs, Volume= 1.737 af
Outflow = 19.85 cfs @ 12.11 hrs, Volume= 1.737 af, Atten= 0%, Lag= 0.0 min
Primary = 17.76 cfs @ 12.16 hrs, Volume= 1.723 af
Secondary = 2.61 cfs @ 12.11 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 116.31' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	107.40'	**18.0" Round Culvert** L= 428.0' Square-edged headwall, Ke= 0.500

			Inlet / Outlet Invert= 107.40' / 94.80' S= 0.0294 '/' Cc= 0.900
			n= 0.014, Flow Area= 1.77 sf
#2	Secondary	116.06'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600
			Limited to weir flow at low heads

Primary OutFlow Max=17.67 cfs @ 12.16 hrs HW=116.22' TW=99.80' (Dynamic Tailwater)
1=Culvert (Outlet Controls 17.67 cfs @ 10.00 fps)

Secondary OutFlow Max=2.61 cfs @ 12.11 hrs HW=116.30' TW=116.19' (Dynamic Tailwater)
2=Orifice/Grate (Weir Controls 2.61 cfs @ 1.34 fps)

Summary for Pond 24R: Existing 24"

[57] Hint: Peaked at 100.72' (Flood elevation advised)
[62] Hint: Exceeded Reach 7R OUTLET depth by 6.35' @ 12.07 hrs

Inflow Area =	17.526 ac,	36.41% Impervious,	Inflow Depth >	2.03"	for 25-Year event
Inflow =	35.19 cfs @	12.07 hrs,	Volume=	2.966 af	
Outflow =	35.19 cfs @	12.07 hrs,	Volume=	2.966 af,	Atten= 0%, Lag= 0.0 min
Primary =	33.54 cfs @	12.08 hrs,	Volume=	2.960 af	
Secondary =	1.65 cfs @	12.07 hrs,	Volume=	0.006 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 100.72' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	94.80'	**24.0" Round Culvert** L= 350.0' Ke= 0.500
			Inlet / Outlet Invert= 94.80' / 79.90' S= 0.0426 '/' Cc= 0.900
			n= 0.014, Flow Area= 3.14 sf
#2	Secondary	100.54'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600
			Limited to weir flow at low heads

Primary OutFlow Max=33.54 cfs @ 12.08 hrs HW=100.72' TW=80.90' (Dynamic Tailwater)
1=Culvert (Inlet Controls 33.54 cfs @ 10.68 fps)

Secondary OutFlow Max=1.60 cfs @ 12.07 hrs HW=100.71' TW=100.63' (Dynamic Tailwater)
2=Orifice/Grate (Weir Controls 1.60 cfs @ 1.15 fps)

Summary for Pond 48R: 48"

[57] Hint: Peaked at 80.94' (Flood elevation advised)

Inflow Area =	38.676 ac,	34.10% Impervious,	Inflow Depth >	2.10"	for 25-Year event
Inflow =	66.97 cfs @	12.11 hrs,	Volume=	6.765 af	
Outflow =	66.97 cfs @	12.11 hrs,	Volume=	6.765 af,	Atten= 0%, Lag= 0.0 min
Primary =	66.97 cfs @	12.11 hrs,	Volume=	6.765 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 80.94' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	77.70'	**48.0" Round Culvert** L= 1,000.0' Ke= 0.500

Inlet / Outlet Invert= 77.70' / 47.00' S= 0.0307 '/' Cc= 0.900
n= 0.014, Flow Area= 12.57 sf

Primary OutFlow Max=66.95 cfs @ 12.11 hrs HW=80.94' TW=49.37' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 66.95 cfs @ 6.13 fps)

Summary for Pond 52.1P: Upper Pond

[61] Hint: Exceeded Reach 2R outlet invert by 0.28' @ 12.66 hrs

Inflow Area = 73.364 ac, 23.75% Impervious, Inflow Depth > 1.94" for 25-Year event
Inflow = 90.84 cfs @ 12.11 hrs, Volume= 11.869 af
Outflow = 52.15 cfs @ 12.62 hrs, Volume= 11.416 af, Atten= 43%, Lag= 30.5 min
Primary = 18.52 cfs @ 12.54 hrs, Volume= 4.293 af
Secondary = 33.84 cfs @ 12.66 hrs, Volume= 7.123 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 51.28' @ 12.66 hrs Surf.Area= 34,984 sf Storage= 122,938 cf

Plug-Flow detention time= 48.3 min calculated for 11.411 af (96% of inflow)
Center-of-Mass det. time= 34.4 min (840.1 - 805.7)

Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	481,854 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
47.00	22,830	0	0
48.00	25,408	24,119	24,119
49.00	28,123	26,766	50,885
50.00	31,194	29,659	80,543
51.00	34,270	32,732	113,275
52.00	36,829	35,550	148,825
53.00	39,431	38,130	186,955
54.00	42,077	40,754	227,709
60.00	42,638	254,145	481,854

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	**12.0" Vert. Orifice/Grate X 3.00** C= 0.600
#2	Primary	52.75'	**46.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Secondary	49.75'	**18.0" Vert. Orifice/Grate** C= 0.600
#4	Secondary	47.25'	**24.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=18.52 cfs @ 12.54 hrs HW=51.20' TW=48.53' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 18.52 cfs @ 7.86 fps)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=33.84 cfs @ 12.66 hrs HW=51.28' (Free Discharge)
└**3=Orifice/Grate** (Orifice Controls 7.51 cfs @ 4.25 fps)
└**4=Orifice/Grate** (Orifice Controls 26.33 cfs @ 8.38 fps)

Summary for Pond 52.2P: Lower Pond

Inflow Area = 76.833 ac, 23.12% Impervious, Inflow Depth > 0.76" for 25-Year event
Inflow = 23.50 cfs @ 12.45 hrs, Volume= 4.885 af
Outflow = 10.24 cfs @ 13.55 hrs, Volume= 4.247 af, Atten= 56%, Lag= 65.7 min
Primary = 10.24 cfs @ 13.55 hrs, Volume= 4.247 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 49.20' @ 13.55 hrs Surf.Area= 39,766 sf Storage= 81,716 cf

Plug-Flow detention time= 124.0 min calculated for 4.245 af (87% of inflow)
Center-of-Mass det. time= 82.0 min (907.7 - 825.8)

Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	563,967 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
47.00	34,526	0	0
48.00	36,921	35,724	35,724
49.00	39,302	38,112	73,835
50.00	41,632	40,467	114,302
51.00	45,142	43,387	157,689
60.00	45,142	406,278	563,967

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	**18.0" Vert. Orifice/Grate** C= 0.600
#2	Primary	50.00'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Primary	51.00'	**15.0' 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=10.24 cfs @ 13.55 hrs HW=49.20' TW=0.00' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 10.24 cfs @ 5.80 fps)
- **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 53P: Wetland Area

Inflow Area = 18.949 ac, 10.43% Impervious, Inflow Depth > 1.51" for 25-Year event
Inflow = 26.26 cfs @ 12.40 hrs, Volume= 2.382 af
Outflow = 21.40 cfs @ 12.54 hrs, Volume= 2.134 af, Atten= 19%, Lag= 8.4 min
Primary = 21.40 cfs @ 12.54 hrs, Volume= 2.134 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 79.91' @ 12.55 hrs Surf.Area= 16,866 sf Storage= 22,499 cf

Plug-Flow detention time= 54.5 min calculated for 2.133 af (90% of inflow)
Center-of-Mass det. time= 22.4 min (848.3 - 825.9)

Volume	Invert	Avail.Storage	Storage Description
#1	77.00'	93,245 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
77.00	449	0	0
78.00	2,374	1,412	1,412
79.00	12,873	7,624	9,035
80.00	17,283	15,078	24,113
84.00	17,283	69,132	93,245

Device	Routing	Invert	Outlet Devices
#1	Primary	79.00'	**14.0' 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=21.41 cfs @ 12.54 hrs HW=79.90' TW=79.68' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 21.41 cfs @ 1.69 fps)

Summary for Pond L179: Existing 24"

[57] Hint: Peaked at 45.83' (Flood elevation advised)

Inflow Area = 20.201 ac, 21.82% Impervious, Inflow Depth > 1.99" for 25-Year event
Inflow = 18.43 cfs @ 12.08 hrs, Volume= 3.350 af
Outflow = 18.43 cfs @ 12.08 hrs, Volume= 3.350 af, Atten= 0%, Lag= 0.0 min
Primary = 18.43 cfs @ 12.08 hrs, Volume= 3.350 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 45.83' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.90'	**24.0" Round Culvert** L= 60.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 41.90' / 41.10' S= 0.0133 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf
#2	Secondary	46.89'	**30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=18.32 cfs @ 12.08 hrs HW=45.82' TW=44.36' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 18.32 cfs @ 5.83 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.90' TW=46.50' (Dynamic Tailwater)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond LINK 110.1: Existing 18"

[57] Hint: Peaked at 52.32' (Flood elevation advised)

Inflow Area = 16.789 ac, 12.17% Impervious, Inflow Depth > 2.13" for 25-Year event
Inflow = 27.60 cfs @ 12.36 hrs, Volume= 2.980 af
Outflow = 27.60 cfs @ 12.36 hrs, Volume= 2.980 af, Atten= 0%, Lag= 0.0 min
Primary = 12.14 cfs @ 12.68 hrs, Volume= 2.454 af
Secondary = 15.48 cfs @ 12.36 hrs, Volume= 0.526 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 52.32' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	46.45'	**18.0" Round Culvert** L= 260.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 46.45' / 42.50' S= 0.0152 '/' Cc= 0.900 n= 0.014, Flow Area= 1.77 sf
#2	Secondary	51.23'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.13 cfs @ 12.68 hrs HW=51.64' TW=46.50' (Dynamic Tailwater)
1=Culvert (Outlet Controls 12.13 cfs @ 6.87 fps)

Secondary OutFlow Max=15.48 cfs @ 12.36 hrs HW=52.32' TW=51.67' (Dynamic Tailwater)
2=Orifice/Grate (Orifice Controls 15.48 cfs @ 3.87 fps)

Summary for Pond MH-A: 15" RCP

[57] Hint: Peaked at 163.16' (Flood elevation advised)

Inflow Area = 16.994 ac, 17.91% Impervious, Inflow Depth > 1.66" for 25-Year event
Inflow = 21.35 cfs @ 12.37 hrs, Volume= 2.351 af
Outflow = 21.35 cfs @ 12.37 hrs, Volume= 2.351 af, Atten= 0%, Lag= 0.0 min
Primary = 11.98 cfs @ 12.37 hrs, Volume= 2.081 af
Secondary = 9.37 cfs @ 12.37 hrs, Volume= 0.270 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 163.16' @ 12.37 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	157.00'	**15.0" Round Culvert** L= 250.0' Ke= 0.500 Inlet / Outlet Invert= 157.00' / 149.00' S= 0.0320 '/' Cc= 0.900 n= 0.014, Flow Area= 1.23 sf
#2	Secondary	162.60'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=11.98 cfs @ 12.37 hrs HW=163.16' TW=150.94' (Dynamic Tailwater)
1=Culvert (Outlet Controls 11.98 cfs @ 9.76 fps)

Secondary OutFlow Max=9.36 cfs @ 12.37 hrs HW=163.16' TW=162.88' (Dynamic Tailwater)
2=Orifice/Grate (Weir Controls 9.36 cfs @ 2.08 fps)

Summary for Pond MH-B: 21" RCP

[57] Hint: Peaked at 150.94' (Flood elevation advised)

Inflow Area = 16.994 ac, 17.91% Impervious, Inflow Depth > 1.47" for 25-Year event
Inflow = 11.98 cfs @ 12.37 hrs, Volume= 2.081 af
Outflow = 11.98 cfs @ 12.37 hrs, Volume= 2.081 af, Atten= 0%, Lag= 0.0 min
Primary = 11.98 cfs @ 12.37 hrs, Volume= 2.081 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 150.94' @ 12.37 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	149.00'	**21.0" Round Culvert** L= 300.0' Ke= 0.500 Inlet / Outlet Invert= 149.00' / 147.20' S= 0.0060 '/' Cc= 0.900 n= 0.012, Flow Area= 2.41 sf

Primary OutFlow Max=11.98 cfs @ 12.37 hrs HW=150.94' TW=148.51' (Dynamic Tailwater)
1=Culvert (Inlet Controls 11.98 cfs @ 4.98 fps)

Summary for Pond MH-C: Overflow Manhole

[57] Hint: Peaked at 148.61' (Flood elevation advised)

Inflow Area = 17.727 ac, 18.90% Impervious, Inflow Depth > 1.50" for 25-Year event
Inflow = 13.48 cfs @ 12.16 hrs, Volume= 2.217 af
Outflow = 13.48 cfs @ 12.16 hrs, Volume= 2.217 af, Atten= 0%, Lag= 0.0 min
Primary = 13.48 cfs @ 12.16 hrs, Volume= 2.217 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 148.61' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	146.35'	**24.0" Round Culvert** L= 373.0' Ke= 0.500 Inlet / Outlet Invert= 146.35' / 145.32' S= 0.0028 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Secondary	150.19'	**12.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 150.19' / 150.09' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=13.47 cfs @ 12.16 hrs HW=148.61' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 13.47 cfs @ 4.75 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=146.35' TW=145.91' (Dynamic Tailwater)
2=Culvert (Controls 0.00 cfs)

Summary for Pond MH-D:

Inflow Area = 12.811 ac, 9.74% Impervious, Inflow Depth > 1.29" for 25-Year event
Inflow = 18.72 cfs @ 12.38 hrs, Volume= 1.378 af
Outflow = 18.72 cfs @ 12.38 hrs, Volume= 1.378 af, Atten= 0%, Lag= 0.0 min
Primary = 18.72 cfs @ 12.38 hrs, Volume= 1.378 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 152.99' @ 12.38 hrs Surf.Area= 14 sf Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 1.378 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (827.9 - 827.9)

Volume	Invert	Avail.Storage	Storage Description
#1	152.99'	89,175 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.99	0	0	0
154.71	14,500	12,470	12,470
160.00	14,500	76,705	89,175

Device	Routing	Invert	Outlet Devices
#1	Primary	148.04'	**24.0" Round Culvert** L= 140.0' Ke= 0.500 Inlet / Outlet Invert= 148.04' / 145.89' S= 0.0154 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Secondary	154.71'	**20.0' long x 20.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=20.86 cfs @ 12.38 hrs HW=152.99' TW=150.95' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 20.86 cfs @ 6.64 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=152.99' TW=154.71' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond MH-E: 24" RCP

[57] Hint: Peaked at 150.95' (Flood elevation advised)
[80] Warning: Exceeded Pond MH-C by 2.45' @ 12.38 hrs (1.52 cfs 0.015 af)

Inflow Area = 13.959 ac, 11.31% Impervious, Inflow Depth > 1.32" for 25-Year event
Inflow = 19.92 cfs @ 12.38 hrs, Volume= 1.538 af
Outflow = 19.92 cfs @ 12.38 hrs, Volume= 1.538 af, Atten= 0%, Lag= 0.0 min
Primary = 19.92 cfs @ 12.38 hrs, Volume= 1.538 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 150.95' @ 12.38 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	145.89'	**24.0" Round Culvert** L= 260.0' Ke= 0.500 Inlet / Outlet Invert= 145.89' / 139.09' S= 0.0262 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=19.92 cfs @ 12.38 hrs HW=150.95' TW=148.29' (Dynamic Tailwater)
1=Culvert (Outlet Controls 19.92 cfs @ 6.34 fps)

Summary for Pond MH-F: 24" RCP

[80] Warning: Exceeded Pond MH-E by 2.38' @ 0.00 hrs (17.90 cfs 2.070 af)

Inflow Area =	13.959 ac,	11.31% Impervious,	Inflow Depth >	1.32" for 25-Year event
Inflow =	19.92 cfs @	12.38 hrs,	Volume=	1.538 af
Outflow =	19.92 cfs @	12.38 hrs,	Volume=	1.538 af, Atten= 0%, Lag= 0.0 min
Primary =	19.92 cfs @	12.38 hrs,	Volume=	1.538 af
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 148.29' @ 12.35 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (827.2 - 827.2)

Volume	Invert	Avail.Storage	Storage Description
#1	148.29'	8,878 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
148.29	0	0	0
149.79	810	608	608
160.00	810	8,270	8,878

Device	Routing	Invert	Outlet Devices
#1	Primary	136.51'	**24.0" Round Culvert** L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 136.51' / 134.29' S= 0.0296 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf
#2	Secondary	149.79'	**40.0' 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=49.67 cfs @ 12.38 hrs HW=148.29' TW=132.14' (Dynamic Tailwater)
1=Culvert (Inlet Controls 49.67 cfs @ 15.81 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=148.29' TW=149.79' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond P3: Existing Outlet

[57] Hint: Peaked at 44.36' (Flood elevation advised)

Inflow Area = 20.826 ac, 24.17% Impervious, Inflow Depth > 2.08" for 25-Year event
Inflow = 21.90 cfs @ 12.08 hrs, Volume= 3.612 af
Outflow = 21.90 cfs @ 12.08 hrs, Volume= 3.612 af, Atten= 0%, Lag= 0.0 min
Primary = 21.90 cfs @ 12.08 hrs, Volume= 3.612 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 44.36' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	41.10'	**24.0" Round Culvert** L= 52.0' Ke= 0.500 Inlet / Outlet Invert= 41.10' / 40.66' S= 0.0085 '/' Cc= 0.900 n= 0.014, Flow Area= 3.14 sf
#2	Secondary	45.79'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=21.88 cfs @ 12.08 hrs HW=44.36' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 21.88 cfs @ 6.96 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=41.10' TW=46.50' (Dynamic Tailwater)
2=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond P3B: Existing 18"

[57] Hint: Peaked at 47.24' (Flood elevation advised)

Inflow Area = 18.234 ac, 15.28% Impervious, Inflow Depth > 1.78" for 25-Year event
Inflow = 14.81 cfs @ 12.24 hrs, Volume= 2.712 af
Outflow = 14.81 cfs @ 12.24 hrs, Volume= 2.712 af, Atten= 0%, Lag= 0.0 min
Primary = 13.64 cfs @ 12.46 hrs, Volume= 2.621 af
Secondary = 5.09 cfs @ 12.09 hrs, Volume= 0.091 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 47.24' @ 12.45 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.40'	**18.0" Round Culvert** L= 63.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 42.40' / 41.90' S= 0.0079 '/' Cc= 0.900 n= 0.014, Flow Area= 1.77 sf
#2	Secondary	45.92'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=13.67 cfs @ 12.46 hrs HW=47.23' TW=44.59' (Dynamic Tailwater)
1=Culvert (Outlet Controls 13.67 cfs @ 7.74 fps)

Secondary OutFlow Max=5.08 cfs @ 12.09 hrs HW=46.77' TW=46.70' (Dynamic Tailwater)
2=Orifice/Grate (Orifice Controls 5.08 cfs @ 1.27 fps)

Summary for Pond P3C: Existing 18"

[57] Hint: Peaked at 44.76' (Flood elevation advised)

Inflow Area = 0.625 ac,100.00% Impervious, Inflow Depth > 5.02" for 25-Year event
Inflow = 3.49 cfs @ 12.07 hrs, Volume= 0.261 af
Outflow = 3.49 cfs @ 12.07 hrs, Volume= 0.261 af, Atten= 0%, Lag= 0.0 min
Primary = 3.49 cfs @ 12.07 hrs, Volume= 0.261 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 44.76' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	43.38'	**18.0" Round Culvert** L= 127.0' Ke= 0.500 Inlet / Outlet Invert= 43.38' / 41.20' S= 0.0172 '/' Cc= 0.900 n= 0.014, Flow Area= 1.77 sf
#2	Secondary	46.77'	**30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.46 cfs @ 12.07 hrs HW=44.76' TW=44.35' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.46 cfs @ 2.66 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=43.38' TW=46.50' (Dynamic Tailwater)
2=Orifice/Grate (Controls 0.00 cfs)