

POST-DEVELOPMENT DRAINAGE CALCULATIONS

5554 VMD Post- Development

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
75,400	39	>75% Grass cover, Good, HSG A (110, 140, 150, 210, 221, 224, 320, 331)
25,505	48	Brush, Poor, HSG A (200, 340)
103,555	98	Paved parking, HSG A (110, 150, 160, 210, 221, 224, 310, 320)
1,840	98	Unconnected pavement, HSG A (140, 331)
98,150	98	Unconnected roofs, HSG A (Roof)
61,165	36	Woods, Fair, HSG A (200, 340)
365,615	72	TOTAL AREA

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Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
365,615	HSG A	110, 140, 150, 160, 200, 210, 221, 224, 310, 320, 331, 340, Roof
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
365,615		TOTAL AREA

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Summary for Subcatchment 110: To Exist Drvie

Runoff = 0.18 cfs @ 12.14 hrs, Volume= 637 cf, Depth= 0.81"
Routed to Reach 1R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
5,055	98	Paved parking, HSG A
4,355	39	>75% Grass cover, Good, HSG A
9,410	71	Weighted Average
4,355		46.28% Pervious Area
5,055		53.72% Impervious Area

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

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Summary for Subcatchment 140: overland to Basin

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 1 cf, Depth= 0.00"
Routed to Pond 165 : infiltration basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Adj	Description
18,585	39		>75% Grass cover, Good, HSG A
850	98		Unconnected pavement, HSG A
19,435	42	40	Weighted Average, UI Adjusted
18,585			95.63% Pervious Area
850			4.37% Impervious Area
850			100.00% Unconnected

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

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Summary for Subcatchment 150: S. Pave- Tree Filter Boxes

Runoff = 0.85 cfs @ 12.09 hrs, Volume= 2,348 cf, Depth= 1.19"
Routed to Pond 151P : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
15,460	98	Paved parking, HSG A
8,150	39	>75% Grass cover, Good, HSG A
23,610	78	Weighted Average
8,150		34.52% Pervious Area
15,460		65.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 6

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Summary for Subcatchment 160: S Loading - trench drain

Runoff = 1.21 cfs @ 12.13 hrs, Volume= 4,508 cf, Depth> 2.86"
Routed to Pond 161 : Stormwater Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
18,930	98	Paved parking, HSG A
18,930		100.00% Impervious Area

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

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Summary for Subcatchment 200: Overland Flows

Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0 cf, Depth= 0.00"
 Routed to Reach 1R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
32,335	36	Woods, Fair, HSG A
10,610	48	Brush, Poor, HSG A
42,945	39	Weighted Average
42,945		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.00"
1.0	75	0.0150	1.22		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
0.0	10	0.2000	4.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.4	135	Total, Increased to minimum Tc = 6.0 min			

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Summary for Subcatchment 210: Front Tree Filters- south

Runoff = 0.65 cfs @ 12.13 hrs, Volume= 2,151 cf, Depth= 1.13"
Routed to Pond 332P : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
8,150	39	>75% Grass cover, Good, HSG A
14,620	98	Paved parking, HSG A
22,770	77	Weighted Average
8,150		35.79% Pervious Area
14,620		64.21% Impervious Area

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

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Summary for Subcatchment 221: Front Tree Filter - north

Runoff = 0.92 cfs @ 12.13 hrs, Volume= 3,107 cf, Depth= 2.25"
Routed to Pond 222 : Recharge Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
14,955	98	Paved parking, HSG A
1,645	39	>75% Grass cover, Good, HSG A
16,600	92	Weighted Average
1,645		9.91% Pervious Area
14,955		90.09% Impervious Area

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

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Summary for Subcatchment 224: Front Parking - Lo Pt

Runoff = 0.39 cfs @ 12.13 hrs, Volume= 1,269 cf, Depth= 1.59"
Routed to Pond 223 : Stormwater Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
7,375	98	Paved parking, HSG A
2,200	39	>75% Grass cover, Good, HSG A
9,575	84	Weighted Average
2,200		22.98% Pervious Area
7,375		77.02% Impervious Area

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

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Summary for Subcatchment 310: N Loading

Runoff = 0.43 cfs @ 12.13 hrs, Volume= 1,608 cf, Depth> 2.86"
Routed to Pond 301 : Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
6,750	98	Paved parking, HSG A
6,750		100.00% Impervious Area

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

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Summary for Subcatchment 320: S. Pave- Tree Filter Boxes

Runoff = 1.29 cfs @ 12.09 hrs, Volume= 3,635 cf, Depth= 1.66"
Routed to Pond 321 : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
20,410	98	Paved parking, HSG A
5,805	39	>75% Grass cover, Good, HSG A
26,215	85	Weighted Average
5,805		22.14% Pervious Area
20,410		77.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 6

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Summary for Subcatchment 331: overland to Basin

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 1 cf, Depth= 0.00"
Routed to Pond 300 : Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Adj	Description
26,510	39		>75% Grass cover, Good, HSG A
990	98		Unconnected pavement, HSG A
27,500	41	40	Weighted Average, UI Adjusted
26,510			96.40% Pervious Area
990			3.60% Impervious Area
990			100.00% Unconnected

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

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Summary for Subcatchment 340: Overland Flows

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 2 cf, Depth= 0.00"
 Routed to Reach 3R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
28,830	36	Woods, Fair, HSG A
14,895	48	Brush, Poor, HSG A
43,725	40	Weighted Average
43,725		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.00"
1.0	75	0.0150	1.22		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
0.0	10	0.2000	4.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.4	135	Total, Increased to minimum Tc = 6.0 min			

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Summary for Subcatchment Roof: Roof

Runoff = 6.26 cfs @ 12.13 hrs, Volume= 23,375 cf, Depth> 2.86"
Routed to Pond 165 : infiltration basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.09"

Area (sf)	CN	Description
98,150	98	Unconnected roofs, HSG A
98,150		100.00% Impervious Area
98,150		100.00% Unconnected

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

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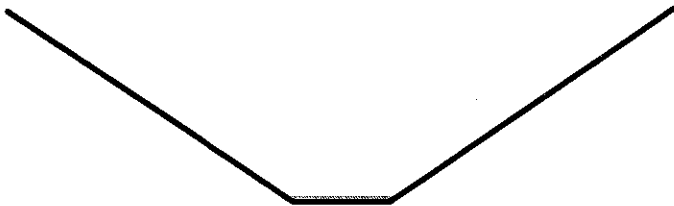
Summary for Reach 1R: S'Iy Ditch

Inflow Area = 261,425 sf, 67.09% Impervious, Inflow Depth = 0.04" for 2-Year event
Inflow = 0.70 cfs @ 12.15 hrs, Volume= 967 cf
Outflow = 0.07 cfs @ 14.37 hrs, Volume= 939 cf, Atten= 90%, Lag= 133.0 min
Routed to Reach 2R : 24" Culvert

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.12 fps, Min. Travel Time= 105.9 min
Avg. Velocity = 0.07 fps, Avg. Travel Time= 183.8 min

Peak Storage= 440 cf @ 12.60 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 3.54'
Bank-Full Depth= 6.00' Flow Area= 72.0 sf, Capacity= 58.69 cfs

3.00' x 6.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 1.5 ' / ' Top Width= 21.00'
Length= 750.0' Slope= 0.0007 ' / '
Inlet Invert= 224.00', Outlet Invert= 223.46'



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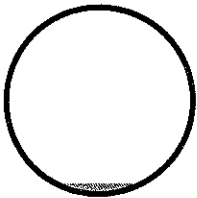
Summary for Reach 2R: 24" Culvert

Inflow Area = 261,425 sf, 67.09% Impervious, Inflow Depth > 0.04" for 2-Year event
Inflow = 0.07 cfs @ 14.37 hrs, Volume= 939 cf
Outflow = 0.07 cfs @ 14.42 hrs, Volume= 938 cf, Atten= 0%, Lag= 3.0 min
Routed to Reach 3R : S'ly Ditch

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.02 fps, Min. Travel Time= 1.7 min
Avg. Velocity= 0.60 fps, Avg. Travel Time= 2.9 min

Peak Storage= 7 cf @ 14.39 hrs
Average Depth at Peak Storage= 0.11', Surface Width= 0.91'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 11.72 cfs

24.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 105.0' Slope= 0.0023 '/'
Inlet Invert= 223.46', Outlet Invert= 223.22'



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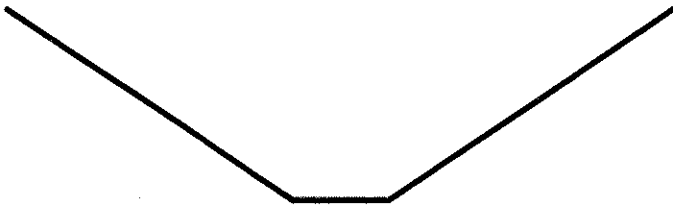
Summary for Reach 3R: S'ly Ditch

Inflow Area = 365,615 sf, 55.67% Impervious, Inflow Depth > 0.03" for 2-Year event
Inflow = 0.07 cfs @ 14.42 hrs, Volume= 940 cf
Outflow = 0.03 cfs @ 19.65 hrs, Volume= 766 cf, Atten= 60%, Lag= 313.7 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.07 fps, Min. Travel Time= 177.2 min
Avg. Velocity = 0.05 fps, Avg. Travel Time= 231.8 min

Peak Storage= 297 cf @ 16.69 hrs
Average Depth at Peak Storage= 0.13' , Surface Width= 3.40'
Bank-Full Depth= 6.00' Flow Area= 72.0 sf, Capacity= 38.78 cfs

3.00' x 6.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 1.5 '/' Top Width= 21.00'
Length= 700.0' Slope= 0.0003 '/'
Inlet Invert= 223.22', Outlet Invert= 223.00'



Summary for Pond 151P: Tree filter Infiltration

Inflow Area = 23,610 sf, 65.48% Impervious, Inflow Depth = 1.19" for 2-Year event
 Inflow = 0.85 cfs @ 12.09 hrs, Volume= 2,348 cf
 Outflow = 0.32 cfs @ 12.11 hrs, Volume= 2,348 cf, Atten= 63%, Lag= 1.4 min
 Discarded = 0.32 cfs @ 12.11 hrs, Volume= 2,348 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Pond 165 : infiltration basin

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 226.44' @ 12.11 hrs Surf.Area= 1,350 sf Storage= 239 cf

Plug-Flow detention time= 3.3 min calculated for 2,347 cf (100% of inflow)
 Center-of-Mass det. time= 3.3 min (878.9 - 875.5)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	1,749 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 4,725 cf Overall - 353 cf Embedded = 4,372 cf x 40.0% Voids
#2	227.00'	353 cf	12.0" Round Pipe Storage Inside #1 L= 450.0' S= 0.0010 '/'
		2,102 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	1,350	0	0
229.50	1,350	4,725	4,725

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	227.00'	12.0" Round Culvert L= 148.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.00' / 226.26' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	228.50'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 2.0' Crest Height

Discarded OutFlow Max=0.32 cfs @ 12.11 hrs HW=226.44' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.32 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=226.00' (Free Discharge)
 ↑ **2=Culvert** (Controls 0.00 cfs)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

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Summary for Pond 161: Stormwater Unit

Inflow Area = 18,930 sf, 100.00% Impervious, Inflow Depth > 2.86" for 2-Year event
Inflow = 1.21 cfs @ 12.13 hrs, Volume= 4,508 cf
Outflow = 1.21 cfs @ 12.13 hrs, Volume= 4,508 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.21 cfs @ 12.13 hrs, Volume= 4,508 cf
Routed to Pond 165 : infiltration basin

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 228.57' @ 12.13 hrs

Flood Elev= 233.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	12.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.00' S= 0.0357 ' S= 0.0357 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.21 cfs @ 12.13 hrs HW=228.57' (Free Discharge)

1=Culvert (Inlet Controls 1.21 cfs @ 2.58 fps)

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Summary for Pond 165: infiltration basin

Inflow Area = 160,125 sf, 83.30% Impervious, Inflow Depth > 2.09" for 2-Year event
 Inflow = 7.47 cfs @ 12.13 hrs, Volume= 27,884 cf
 Outflow = 1.68 cfs @ 12.38 hrs, Volume= 27,884 cf, Atten= 77%, Lag= 15.2 min
 Discarded = 1.68 cfs @ 12.38 hrs, Volume= 27,884 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.03' @ 12.38 hrs Surf.Area= 6,107 sf Storage= 5,489 cf

Plug-Flow detention time= 19.4 min calculated for 27,884 cf (100% of inflow)
 Center-of-Mass det. time= 19.4 min (780.7 - 761.3)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	31,618 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	4,515	0	0
227.00	6,045	5,280	5,280
228.00	7,853	6,949	12,229
229.00	9,790	8,822	21,051
230.00	11,345	10,568	31,618

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	229.80'	12.0' long + 20.0 ' SideZ x 30.0' 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

Discarded OutFlow Max=1.68 cfs @ 12.38 hrs HW=227.03' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 1.68 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=226.00' (Free Discharge)
 ↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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Summary for Pond 220: Infiltration Chambers

Inflow Area = 26,175 sf, 85.31% Impervious, Inflow Depth = 0.89" for 2-Year event
 Inflow = 0.93 cfs @ 12.15 hrs, Volume= 1,946 cf
 Outflow = 0.38 cfs @ 12.34 hrs, Volume= 1,946 cf, Atten= 60%, Lag= 10.9 min
 Discarded = 0.38 cfs @ 12.34 hrs, Volume= 1,946 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 226.53' @ 12.34 hrs Surf.Area= 1,556 sf Storage= 359 cf

Plug-Flow detention time= 5.9 min calculated for 1,946 cf (100% of inflow)
 Center-of-Mass det. time= 5.9 min (821.4 - 815.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	226.00'	1,220 cf	23.58'W x 66.00'L x 3.21'H Field A 4,994 cf Overall - 1,943 cf Embedded = 3,051 cf x 40.0% Voids
#2A	226.50'	1,943 cf	Cultec R-280HD x 45 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 5 rows
		3,163 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.00'	12.0" Round Culvert L= 250.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.50' S= 0.0020 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.38 cfs @ 12.34 hrs HW=226.53' (Free Discharge)↑ **1=Exfiltration** (Controls 0.38 cfs)**Primary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=226.00' (Free Discharge)↑ **2=Culvert** (Controls 0.00 cfs)

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Pond 220: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)

Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf

Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap

Row Length Adjustment= +1.00' x 6.07 sf x 5 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

9 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 64.00' Row Length +12.0" End Stone x 2 = 66.00' Base Length

5 Rows x 47.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 23.58' Base Width

6.0" Stone Base + 26.5" Chamber Height + 6.0" Stone Cover = 3.21' Field Height

45 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 5 Rows = 1,943.0 cf Chamber Storage

4,993.8 cf Field - 1,943.0 cf Chambers = 3,050.8 cf Stone x 40.0% Voids = 1,220.3 cf Stone Storage

Chamber Storage + Stone Storage = 3,163.3 cf = 0.073 af

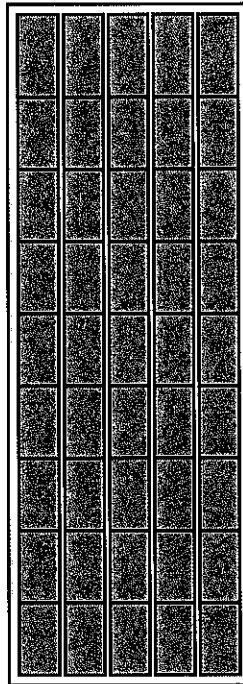
Overall Storage Efficiency = 63.3%

Overall System Size = 66.00' x 23.58' x 3.21'

45 Chambers

185.0 cy Field

113.0 cy Stone



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Summary for Pond 222: Recharge Trench

Inflow Area = 16,600 sf, 90.09% Impervious, Inflow Depth = 2.25" for 2-Year event
 Inflow = 0.92 cfs @ 12.13 hrs, Volume= 3,107 cf
 Outflow = 0.73 cfs @ 12.17 hrs, Volume= 3,107 cf, Atten= 20%, Lag= 2.7 min
 Discarded = 0.14 cfs @ 12.17 hrs, Volume= 2,430 cf
 Primary = 0.59 cfs @ 12.17 hrs, Volume= 677 cf
 Routed to Pond 223 : Stormwater Unit

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.38' @ 12.17 hrs Surf.Area= 690 sf Storage= 265 cf

Plug-Flow detention time= 3.6 min calculated for 3,106 cf (100% of inflow)
 Center-of-Mass det. time= 3.6 min (817.6 - 814.0)

Volume	Invert	Avail.Storage	Storage Description
#1	228.00'	1,109 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 1,380 cf Overall - 271 cf Embedded = 1,109 cf
#2	228.50'	271 cf	12.0" Round Pipe Storage Inside #1 L= 345.0' S= 0.0010 '/'
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
228.00	690	0	0
230.00	690	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	228.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.14 cfs @ 12.17 hrs HW=228.38' (Free Discharge)
 ↗ **1=Exfiltration** (Controls 0.14 cfs)

Primary OutFlow Max=0.59 cfs @ 12.17 hrs HW=228.38' (Free Discharge)
 ↗ **2=Orifice/Grate** (Orifice Controls 0.59 cfs @ 2.11 fps)

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Summary for Pond 223: Stormwater Unit

Inflow Area = 26,175 sf, 85.31% Impervious, Inflow Depth = 0.89" for 2-Year event
Inflow = 0.93 cfs @ 12.15 hrs, Volume= 1,946 cf
Outflow = 0.93 cfs @ 12.15 hrs, Volume= 1,946 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.93 cfs @ 12.15 hrs, Volume= 1,946 cf
Routed to Pond 220 : Infiltration Chambers

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 228.50' @ 12.15 hrs

Flood Elev= 233.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	12.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.00' S= 0.0357 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.93 cfs @ 12.15 hrs HW=228.50' (Free Discharge)**1=Culvert** (Inlet Controls 0.93 cfs @ 2.40 fps)

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Summary for Pond 300: Infiltration 1

Inflow Area = 60,465 sf, 46.56% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 24.02 hrs, Volume= 1 cf
 Outflow = 0.00 cfs @ 24.03 hrs, Volume= 1 cf, Atten= 1%, Lag= 0.8 min
 Discarded = 0.00 cfs @ 24.03 hrs, Volume= 1 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Reach 3R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.00' @ 24.03 hrs Surf.Area= 900 sf Storage= 0 cf

Plug-Flow detention time= 1.7 min calculated for 1 cf (100% of inflow)
 Center-of-Mass det. time= 1.7 min (1,407.3 - 1,405.6)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	7,325 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.00	900	0	0
228.00	2,610	1,755	1,755
228.50	4,440	1,763	3,518
229.00	10,790	3,808	7,325

Device	Routing	Invert	Outlet Devices
#1	Discarded	227.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.50'	10.0' long + 2.0 ' SideZ 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

Discarded OutFlow Max=0.17 cfs @ 24.03 hrs HW=227.00' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.17 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=227.00' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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Summary for Pond 301: Infiltration 1

Inflow Area = 32,965 sf, 82.39% Impervious, Inflow Depth = 0.77" for 2-Year event
 Inflow = 1.30 cfs @ 12.10 hrs, Volume= 2,107 cf
 Outflow = 0.18 cfs @ 12.36 hrs, Volume= 2,107 cf, Atten= 86%, Lag= 15.8 min
 Discarded = 0.18 cfs @ 12.36 hrs, Volume= 2,107 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Pond 300 : Infiltration 1

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 228.45' @ 12.36 hrs Surf.Area= 699 sf Storage= 699 cf

Plug-Flow detention time= 28.8 min calculated for 2,106 cf (100% of inflow)

Center-of-Mass det. time= 28.8 min (782.4 - 753.6)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	1,138 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.00	295	0	0
228.00	545	420	420
229.00	890	718	1,138

Device	Routing	Invert	Outlet Devices
#1	Discarded	227.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.50'	10.0' long + 2.0 ' SideZ 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

Discarded OutFlow Max=0.18 cfs @ 12.36 hrs HW=228.45' (Free Discharge)

↑1=Exfiltration (Controls 0.18 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=227.00' (Free Discharge)

↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Summary for Pond 321: Tree filter Infiltration

Inflow Area = 26,215 sf, 77.86% Impervious, Inflow Depth = 1.66" for 2-Year event
 Inflow = 1.29 cfs @ 12.09 hrs, Volume= 3,635 cf
 Outflow = 1.13 cfs @ 12.09 hrs, Volume= 3,635 cf, Atten= 12%, Lag= 0.2 min
 Discarded = 0.22 cfs @ 12.09 hrs, Volume= 3,136 cf
 Primary = 0.91 cfs @ 12.09 hrs, Volume= 499 cf
 Routed to Pond 301 : Infiltration 1

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.49' @ 12.09 hrs Surf.Area= 670 sf Storage= 443 cf

Plug-Flow detention time= 7.5 min calculated for 3,634 cf (100% of inflow)
 Center-of-Mass det. time= 7.5 min (853.1 - 845.6)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	833 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 2,345 cf Overall - 262 cf Embedded = 2,083 cf x 40.0% Voids
#2	227.00'	262 cf	12.0" Round Pipe Storage Inside #1 L= 333.0' S= 0.0010 '/'
		1,095 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	670	0	0
229.50	670	2,345	2,345

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	227.00'	12.0" Round Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.00' / 226.50' S= 0.0167 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Primary	228.50'	12.0" Round Culvert L= 38.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.50' / 227.74' S= 0.0200 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.22 cfs @ 12.09 hrs HW=227.49' (Free Discharge)
 1=Exfiltration (Controls 0.22 cfs)

Primary OutFlow Max=0.90 cfs @ 12.09 hrs HW=227.49' (Free Discharge)
 2=Culvert (Inlet Controls 0.90 cfs @ 2.37 fps)
 3=Culvert (Controls 0.00 cfs)

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Summary for Pond 332P: Tree filter Infiltration

Inflow Area = 22,770 sf, 64.21% Impervious, Inflow Depth = 1.13" for 2-Year event
 Inflow = 0.65 cfs @ 12.13 hrs, Volume= 2,151 cf
 Outflow = 0.62 cfs @ 12.15 hrs, Volume= 2,151 cf, Atten= 4%, Lag= 1.2 min
 Discarded = 0.10 cfs @ 12.15 hrs, Volume= 1,822 cf
 Primary = 0.52 cfs @ 12.15 hrs, Volume= 329 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.43' @ 12.15 hrs Surf.Area= 234 sf Storage= 252 cf

Plug-Flow detention time= 15.1 min calculated for 2,151 cf (100% of inflow)
 Center-of-Mass det. time= 15.1 min (900.3 - 885.2)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	311 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 819 cf Overall - 41 cf Embedded = 778 cf x 40.0% Voids
#2	226.50'	41 cf	8.0" Round Pipe Storage Inside #1 L= 117.0' S= 0.0010 '/'
		352 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	234	0	0
229.50	234	819	819

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'

Discarded OutFlow Max=0.10 cfs @ 12.15 hrs HW=228.42' (Free Discharge)
 ↳2=Exfiltration (Controls 0.10 cfs)

Primary OutFlow Max=0.52 cfs @ 12.15 hrs HW=228.42' (Free Discharge)
 ↳1=Orifice/Grate (Orifice Controls 0.52 cfs @ 2.22 fps)

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Summary for Subcatchment 110: To Exist Drvie

Runoff = 0.44 cfs @ 12.13 hrs, Volume= 1,455 cf, Depth= 1.86"
Routed to Reach 1R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
5,055	98	Paved parking, HSG A
4,355	39	>75% Grass cover, Good, HSG A
9,410	71	Weighted Average
4,355		46.28% Pervious Area
5,055		53.72% Impervious Area

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

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Summary for Subcatchment 140: overland to Basin

Runoff = 0.01 cfs @ 14.25 hrs, Volume= 265 cf, Depth= 0.16"
Routed to Pond 165 : infiltration basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Adj	Description
18,585	39		>75% Grass cover, Good, HSG A
850	98		Unconnected pavement, HSG A
19,435	42	40	Weighted Average, UI Adjusted
18,585			95.63% Pervious Area
850			4.37% Impervious Area
850			100.00% Unconnected

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

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Summary for Subcatchment 150: S. Pave- Tree Filter Boxes

Runoff = 1.69 cfs @ 12.09 hrs, Volume= 4,756 cf, Depth= 2.42"
Routed to Pond 151P : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
15,460	98	Paved parking, HSG A
8,150	39	>75% Grass cover, Good, HSG A
23,610	78	Weighted Average
8,150		34.52% Pervious Area
15,460		65.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 6

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Summary for Subcatchment 160: S Loading - trench drain

Runoff = 1.83 cfs @ 12.13 hrs, Volume= 6,960 cf, Depth> 4.41"
Routed to Pond 161 : Stormwater Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
18,930	98	Paved parking, HSG A
18,930		100.00% Impervious Area

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

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Summary for Subcatchment 200: Overland Flows

Runoff = 0.01 cfs @ 14.54 hrs, Volume= 483 cf, Depth= 0.13"
 Routed to Reach 1R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
32,335	36	Woods, Fair, HSG A
10,610	48	Brush, Poor, HSG A
42,945	39	Weighted Average
42,945		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.00"
1.0	75	0.0150	1.22		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
0.0	10	0.2000	4.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.4	135	Total, Increased to minimum Tc = 6.0 min			

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Summary for Subcatchment 210: Front Tree Filters- south

Runoff = 1.36 cfs @ 12.13 hrs, Volume= 4,427 cf, Depth= 2.33"
Routed to Pond 332P : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
8,150	39	>75% Grass cover, Good, HSG A
14,620	98	Paved parking, HSG A
22,770	77	Weighted Average
8,150		35.79% Pervious Area
14,620		64.21% Impervious Area

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

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Summary for Subcatchment 221: Front Tree Filter - north

Runoff = 1.49 cfs @ 12.13 hrs, Volume= 5,185 cf, Depth= 3.75"
Routed to Pond 222 : Recharge Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
14,955	98	Paved parking, HSG A
1,645	39	>75% Grass cover, Good, HSG A
16,600	92	Weighted Average
1,645		9.91% Pervious Area
14,955		90.09% Impervious Area

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

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Summary for Subcatchment 224: Front Parking - Lo Pt

Runoff = 0.71 cfs @ 12.13 hrs, Volume= 2,355 cf, Depth= 2.95"
Routed to Pond 223 : Stormwater Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
7,375	98	Paved parking, HSG A
2,200	39	>75% Grass cover, Good, HSG A
9,575	84	Weighted Average
2,200		22.98% Pervious Area
7,375		77.02% Impervious Area

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

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NRCC 24-hr D 10-Year Rainfall=4.65"

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Summary for Subcatchment 310: N Loading

Runoff = 0.65 cfs @ 12.13 hrs, Volume= 2,482 cf, Depth> 4.41"
Routed to Pond 301 : Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
6,750	98	Paved parking, HSG A
6,750		100.00% Impervious Area

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

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NRCC 24-hr D 10-Year Rainfall=4.65"

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Summary for Subcatchment 320: S. Pave- Tree Filter Boxes

Runoff = 2.28 cfs @ 12.09 hrs, Volume= 6,654 cf, Depth= 3.05"

Routed to Pond 321 : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
20,410	98	Paved parking, HSG A
5,805	39	>75% Grass cover, Good, HSG A
26,215	85	Weighted Average
5,805		22.14% Pervious Area
20,410		77.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 6

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Summary for Subcatchment 331: overland to Basin

Runoff = 0.01 cfs @ 14.25 hrs, Volume= 375 cf, Depth= 0.16"
Routed to Pond 300 : Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Adj	Description
26,510	39		>75% Grass cover, Good, HSG A
990	98		Unconnected pavement, HSG A
27,500	41	40	Weighted Average, UI Adjusted
26,510			96.40% Pervious Area
990			3.60% Impervious Area
990			100.00% Unconnected

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

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Summary for Subcatchment 340: Overland Flows

Runoff = 0.02 cfs @ 14.25 hrs, Volume= 596 cf, Depth= 0.16"

Routed to Reach 3R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
28,830	36	Woods, Fair, HSG A
14,895	48	Brush, Poor, HSG A
43,725	40	Weighted Average
43,725		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.00"
1.0	75	0.0150	1.22		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
0.0	10	0.2000	4.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.4	135	Total, Increased to minimum Tc = 6.0 min			

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Summary for Subcatchment Roof: Roof

Runoff = 9.49 cfs @ 12.13 hrs, Volume= 36,086 cf, Depth> 4.41"
Routed to Pond 165 : infiltration basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.65"

Area (sf)	CN	Description
98,150	98	Unconnected roofs, HSG A
98,150		100.00% Impervious Area
98,150		100.00% Unconnected

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

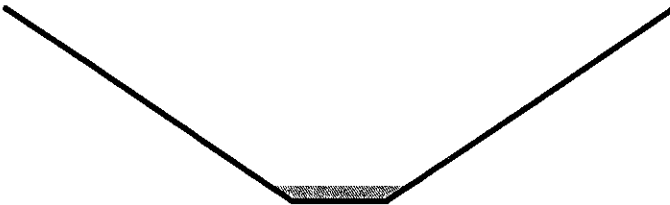
Summary for Reach 1R: S'ly Ditch

Inflow Area = 261,425 sf, 67.09% Impervious, Inflow Depth = 0.16" for 10-Year event
Inflow = 1.64 cfs @ 12.14 hrs, Volume= 3,414 cf
Outflow = 0.36 cfs @ 13.40 hrs, Volume= 3,365 cf, Atten= 78%, Lag= 75.6 min
Routed to Reach 2R : 24" Culvert

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.21 fps, Min. Travel Time= 60.7 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 140.8 min

Peak Storage= 1,307 cf @ 12.39 hrs
Average Depth at Peak Storage= 0.47' , Surface Width= 4.41'
Bank-Full Depth= 6.00' Flow Area= 72.0 sf, Capacity= 58.69 cfs

3.00' x 6.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 1.5 '/' Top Width= 21.00'
Length= 750.0' Slope= 0.0007 '/'
Inlet Invert= 224.00', Outlet Invert= 223.46'



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NRCC 24-hr D 10-Year Rainfall=4.65"

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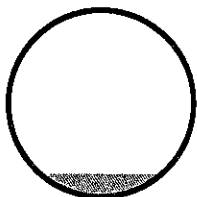
Summary for Reach 2R: 24" Culvert

Inflow Area = 261,425 sf, 67.09% Impervious, Inflow Depth > 0.15" for 10-Year event
Inflow = 0.36 cfs @ 13.40 hrs, Volume= 3,365 cf
Outflow = 0.36 cfs @ 13.44 hrs, Volume= 3,364 cf, Atten= 0%, Lag= 1.8 min
Routed to Reach 3R : S'ly Ditch

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.68 fps, Min. Travel Time= 1.0 min
Avg. Velocity= 0.77 fps, Avg. Travel Time= 2.3 min

Peak Storage= 22 cf @ 13.42 hrs
Average Depth at Peak Storage= 0.24' , Surface Width= 1.30'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 11.72 cfs

24.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 105.0' Slope= 0.0023 '/'
Inlet Invert= 223.46', Outlet Invert= 223.22'



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Summary for Reach 3R: S'ly Ditch

Inflow Area = 365,615 sf, 55.67% Impervious, Inflow Depth > 0.13" for 10-Year event
Inflow = 0.38 cfs @ 13.44 hrs, Volume= 3,959 cf
Outflow = 0.18 cfs @ 16.24 hrs, Volume= 3,738 cf, Atten= 51%, Lag= 168.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.13 fps, Min. Travel Time= 93.0 min

Avg. Velocity = 0.08 fps, Avg. Travel Time= 153.7 min

Peak Storage= 1,025 cf @ 14.69 hrs

Average Depth at Peak Storage= 0.41', Surface Width= 4.22'

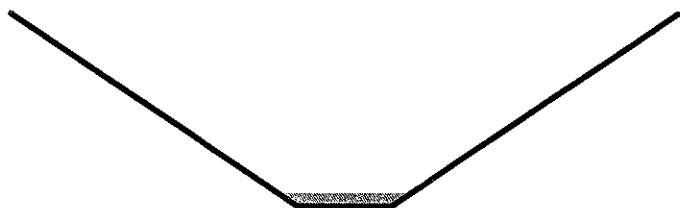
Bank-Full Depth= 6.00' Flow Area= 72.0 sf, Capacity= 38.78 cfs

3.00' x 6.00' deep channel, n= 0.100 Earth, dense brush, high stage

Side Slope Z-value= 1.5 '/' Top Width= 21.00'

Length= 700.0' Slope= 0.0003 '/'

Inlet Invert= 223.22', Outlet Invert= 223.00'



Summary for Pond 151P: Tree filter Infiltration

Inflow Area = 23,610 sf, 65.48% Impervious, Inflow Depth = 2.42" for 10-Year event
 Inflow = 1.69 cfs @ 12.09 hrs, Volume= 4,756 cf
 Outflow = 0.44 cfs @ 12.21 hrs, Volume= 4,756 cf, Atten= 74%, Lag= 7.0 min
 Discarded = 0.44 cfs @ 12.21 hrs, Volume= 4,756 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Pond 165 : infiltration basin

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.39' @ 12.21 hrs Surf.Area= 1,350 sf Storage= 775 cf

Plug-Flow detention time= 9.5 min calculated for 4,754 cf (100% of inflow)
 Center-of-Mass det. time= 9.5 min (858.7 - 849.2)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	1,749 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 4,725 cf Overall - 353 cf Embedded = 4,372 cf x 40.0% Voids
#2	227.00'	353 cf	12.0" Round Pipe Storage Inside #1 L= 450.0' S= 0.0010 '/'
		2,102 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	1,350	0	0
229.50	1,350	4,725	4,725

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	227.00'	12.0" Round Culvert L= 148.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.00' / 226.26' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	228.50'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 2.0' Crest Height

Discarded OutFlow Max=0.44 cfs @ 12.21 hrs HW=227.39' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 0.44 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=226.00' (Free Discharge)
 ↳ **2=Culvert** (Controls 0.00 cfs)
 ↳ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

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Summary for Pond 161: Stormwater Unit

Inflow Area = 18,930 sf, 100.00% Impervious, Inflow Depth > 4.41" for 10-Year event
Inflow = 1.83 cfs @ 12.13 hrs, Volume= 6,960 cf
Outflow = 1.83 cfs @ 12.13 hrs, Volume= 6,960 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.83 cfs @ 12.13 hrs, Volume= 6,960 cf
Routed to Pond 165 : infiltration basin

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 228.74' @ 12.13 hrs

Flood Elev= 233.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	12.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.00' S= 0.0357 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.83 cfs @ 12.13 hrs HW=228.74' (Free Discharge)**1=Culvert** (Inlet Controls 1.83 cfs @ 2.93 fps)

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Summary for Pond 165: infiltration basin

Inflow Area = 160,125 sf, 83.30% Impervious, Inflow Depth > 3.25" for 10-Year event
 Inflow = 11.31 cfs @ 12.13 hrs, Volume= 43,310 cf
 Outflow = 2.27 cfs @ 12.41 hrs, Volume= 43,310 cf, Atten= 80%, Lag= 17.0 min
 Discarded = 2.27 cfs @ 12.41 hrs, Volume= 43,310 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.67' @ 12.41 hrs Surf.Area= 7,256 sf Storage= 9,736 cf

Plug-Flow detention time= 28.9 min calculated for 43,310 cf (100% of inflow)
 Center-of-Mass det. time= 28.9 min (783.1 - 754.3)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	31,618 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	4,515	0	0
227.00	6,045	5,280	5,280
228.00	7,853	6,949	12,229
229.00	9,790	8,822	21,051
230.00	11,345	10,568	31,618

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	229.80'	12.0' long + 20.0 ' SideZ x 30.0' 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

Discarded OutFlow Max=2.27 cfs @ 12.41 hrs HW=227.67' (Free Discharge)
 ↳1=Exfiltration (Controls 2.27 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=226.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 220: Infiltration Chambers

Inflow Area = 26,175 sf, 85.31% Impervious, Inflow Depth = 1.78" for 10-Year event
 Inflow = 1.79 cfs @ 12.15 hrs, Volume= 3,893 cf
 Outflow = 0.46 cfs @ 12.41 hrs, Volume= 3,893 cf, Atten= 74%, Lag= 15.7 min
 Discarded = 0.46 cfs @ 12.41 hrs, Volume= 3,893 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.09' @ 12.41 hrs Surf.Area= 1,556 sf Storage= 1,099 cf

Plug-Flow detention time= 16.5 min calculated for 3,893 cf (100% of inflow)
 Center-of-Mass det. time= 16.5 min (811.8 - 795.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	226.00'	1,220 cf	23.58'W x 66.00'L x 3.21'H Field A 4,994 cf Overall - 1,943 cf Embedded = 3,051 cf x 40.0% Voids
#2A	226.50'	1,943 cf	Cultec R-280HD x 45 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 5 rows
		3,163 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.00'	12.0" Round Culvert L= 250.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.50' S= 0.0020 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.46 cfs @ 12.41 hrs HW=227.09' (Free Discharge)
 ↗ **1=Exfiltration** (Controls 0.46 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=226.00' (Free Discharge)
 ↗ **2=Culvert** (Controls 0.00 cfs)

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Pond 220: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)

Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf

Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap

Row Length Adjustment= +1.00' x 6.07 sf x 5 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

9 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 64.00' Row Length +12.0" End Stone x 2 = 66.00' Base Length

5 Rows x 47.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 23.58' Base Width

6.0" Stone Base + 26.5" Chamber Height + 6.0" Stone Cover = 3.21' Field Height

45 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 5 Rows = 1,943.0 cf Chamber Storage

4,993.8 cf Field - 1,943.0 cf Chambers = 3,050.8 cf Stone x 40.0% Voids = 1,220.3 cf Stone Storage

Chamber Storage + Stone Storage = 3,163.3 cf = 0.073 af

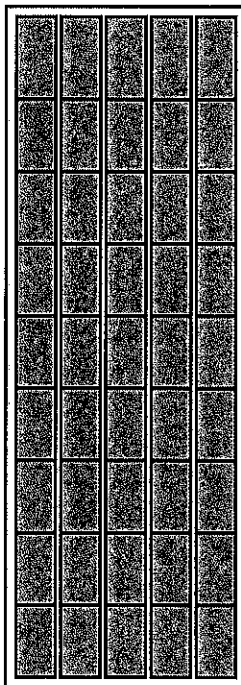
Overall Storage Efficiency = 63.3%

Overall System Size = 66.00' x 23.58' x 3.21'

45 Chambers

185.0 cy Field

113.0 cy Stone



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Summary for Pond 222: Recharge Trench

Inflow Area = 16,600 sf, 90.09% Impervious, Inflow Depth = 3.75" for 10-Year event
 Inflow = 1.49 cfs @ 12.13 hrs, Volume= 5,185 cf
 Outflow = 1.28 cfs @ 12.17 hrs, Volume= 5,185 cf, Atten= 14%, Lag= 2.1 min
 Discarded = 0.15 cfs @ 12.17 hrs, Volume= 3,647 cf
 Primary = 1.13 cfs @ 12.17 hrs, Volume= 1,538 cf
 Routed to Pond 223 : Stormwater Unit

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.55' @ 12.17 hrs Surf.Area= 690 sf Storage= 382 cf

Plug-Flow detention time= 3.8 min calculated for 5,183 cf (100% of inflow)
 Center-of-Mass det. time= 3.8 min (799.8 - 796.0)

Volume	Invert	Avail.Storage	Storage Description
#1	228.00'	1,109 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 1,380 cf Overall - 271 cf Embedded = 1,109 cf
#2	228.50'	271 cf	12.0" Round Pipe Storage Inside #1 L= 345.0' S= 0.0010 '/'
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
228.00	690	0	0
230.00	690	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	228.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.15 cfs @ 12.17 hrs HW=228.55' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.15 cfs)

Primary OutFlow Max=1.13 cfs @ 12.17 hrs HW=228.55' (Free Discharge)
 ↑ **2=Orifice/Grate** (Orifice Controls 1.13 cfs @ 2.53 fps)

Summary for Pond 223: Stormwater Unit

Inflow Area = 26,175 sf, 85.31% Impervious, Inflow Depth = 1.78" for 10-Year event
 Inflow = 1.79 cfs @ 12.15 hrs, Volume= 3,893 cf
 Outflow = 1.79 cfs @ 12.15 hrs, Volume= 3,893 cf, Atten= 0%, Lag= 0.0 min
 Primary = 1.79 cfs @ 12.15 hrs, Volume= 3,893 cf
 Routed to Pond 220 : Infiltration Chambers

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.73' @ 12.15 hrs
 Flood Elev= 233.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	12.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.00' S= 0.0357 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.79 cfs @ 12.15 hrs HW=228.73' (Free Discharge)
 1=Culvert (Inlet Controls 1.79 cfs @ 2.91 fps)

Summary for Pond 300: Infiltration 1

Inflow Area = 60,465 sf, 46.56% Impervious, Inflow Depth = 0.33" for 10-Year event
 Inflow = 2.20 cfs @ 12.10 hrs, Volume= 1,643 cf
 Outflow = 0.40 cfs @ 12.30 hrs, Volume= 1,643 cf, Atten= 82%, Lag= 12.1 min
 Discarded = 0.40 cfs @ 12.30 hrs, Volume= 1,643 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Reach 3R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.56' @ 12.30 hrs Surf.Area= 1,863 sf Storage= 778 cf

Plug-Flow detention time= 18.2 min calculated for 1,643 cf (100% of inflow)
 Center-of-Mass det. time= 18.2 min (829.8 - 811.5)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	7,325 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.00	900	0	0
228.00	2,610	1,755	1,755
228.50	4,440	1,763	3,518
229.00	10,790	3,808	7,325

Device	Routing	Invert	Outlet Devices
#1	Discarded	227.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.50'	10.0' long + 2.0' SideZ 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

Discarded OutFlow Max=0.40 cfs @ 12.30 hrs HW=227.56' (Free Discharge)
 ↑1=Exfiltration (Controls 0.40 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=227.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 301: Infiltration 1

Inflow Area = 32,965 sf, 82.39% Impervious, Inflow Depth > 1.53" for 10-Year event
 Inflow = 2.50 cfs @ 12.09 hrs, Volume= 4,212 cf
 Outflow = 2.41 cfs @ 12.10 hrs, Volume= 4,212 cf, Atten= 4%, Lag= 0.7 min
 Discarded = 0.20 cfs @ 12.10 hrs, Volume= 2,943 cf
 Primary = 2.20 cfs @ 12.10 hrs, Volume= 1,269 cf
 Routed to Pond 300 : Infiltration 1

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.70' @ 12.10 hrs Surf.Area= 787 sf Storage= 888 cf

Plug-Flow detention time= 22.3 min calculated for 4,211 cf (100% of inflow)
 Center-of-Mass det. time= 22.3 min (764.9 - 742.6)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	1,138 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.00	295	0	0
228.00	545	420	420
229.00	890	718	1,138

Device	Routing	Invert	Outlet Devices
#1	Discarded	227.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.50'	10.0' long + 2.0 ' SideZ 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

Discarded OutFlow Max=0.20 cfs @ 12.10 hrs HW=228.70' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.20 cfs)

Primary OutFlow Max=2.19 cfs @ 12.10 hrs HW=228.70' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 2.19 cfs @ 1.04 fps)

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NRCC 24-hr D 10-Year Rainfall=4.65"

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Summary for Pond 321: Tree filter Infiltration

Inflow Area = 26,215 sf, 77.86% Impervious, Inflow Depth = 3.05" for 10-Year event
 Inflow = 2.28 cfs @ 12.09 hrs, Volume= 6,654 cf
 Outflow = 2.17 cfs @ 12.09 hrs, Volume= 6,654 cf, Atten= 5%, Lag= 0.0 min
 Discarded = 0.24 cfs @ 12.09 hrs, Volume= 4,925 cf
 Primary = 1.93 cfs @ 12.09 hrs, Volume= 1,730 cf
 Routed to Pond 301 : Infiltration 1

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.77' @ 12.09 hrs Surf.Area= 670 sf Storage= 572 cf

Plug-Flow detention time= 7.6 min calculated for 6,654 cf (100% of inflow)
 Center-of-Mass det. time= 7.6 min (830.8 - 823.2)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	833 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 2,345 cf Overall - 262 cf Embedded = 2,083 cf x 40.0% Voids
#2	227.00'	262 cf	12.0" Round Pipe Storage Inside #1 L= 333.0' S= 0.0010 '/'
		1,095 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	670	0	0
229.50	670	2,345	2,345

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	227.00'	12.0" Round Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.00' / 226.50' S= 0.0167 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Primary	228.50'	12.0" Round Culvert L= 38.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.50' / 227.74' S= 0.0200 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.24 cfs @ 12.09 hrs HW=227.77' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.24 cfs)

Primary OutFlow Max=1.92 cfs @ 12.09 hrs HW=227.77' (Free Discharge)
 ↑ **2=Culvert** (Inlet Controls 1.92 cfs @ 2.98 fps)
 ↓ **3=Culvert** (Controls 0.00 cfs)

Summary for Pond 332P: Tree filter Infiltration

Inflow Area = 22,770 sf, 64.21% Impervious, Inflow Depth = 2.33" for 10-Year event
 Inflow = 1.36 cfs @ 12.13 hrs, Volume= 4,427 cf
 Outflow = 1.32 cfs @ 12.15 hrs, Volume= 4,427 cf, Atten= 3%, Lag= 1.0 min
 Discarded = 0.11 cfs @ 12.15 hrs, Volume= 2,951 cf
 Primary = 1.21 cfs @ 12.15 hrs, Volume= 1,476 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.85' @ 12.15 hrs Surf.Area= 234 sf Storage= 291 cf

Plug-Flow detention time= 14.8 min calculated for 4,427 cf (100% of inflow)
 Center-of-Mass det. time= 14.8 min (873.0 - 858.2)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	311 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 819 cf Overall - 41 cf Embedded = 778 cf x 40.0% Voids
#2	226.50'	41 cf	8.0" Round Pipe Storage Inside #1 L= 117.0' S= 0.0010 '/'
		352 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	234	0	0
229.50	234	819	819

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'

Discarded OutFlow Max=0.11 cfs @ 12.15 hrs HW=228.85' (Free Discharge)
 ↳ **2=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=1.21 cfs @ 12.15 hrs HW=228.85' (Free Discharge)
 ↳ **1=Orifice/Grate** (Orifice Controls 1.21 cfs @ 3.46 fps)

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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Subcatchment 110: To Exist Drvie

Runoff = 1.17 cfs @ 12.13 hrs, Volume= 3,837 cf, Depth= 4.89"
Routed to Reach 1R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
5,055	98	Paved parking, HSG A
4,355	39	>75% Grass cover, Good, HSG A
9,410	71	Weighted Average
4,355		46.28% Pervious Area
5,055		53.72% Impervious Area

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

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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Subcatchment 140: overland to Basin

Runoff = 0.56 cfs @ 12.14 hrs, Volume= 2,285 cf, Depth= 1.41"
Routed to Pond 165 : infiltration basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Adj	Description
18,585	39		>75% Grass cover, Good, HSG A
850	98		Unconnected pavement, HSG A
19,435	42	40	Weighted Average, UI Adjusted
18,585			95.63% Pervious Area
850			4.37% Impervious Area
850			100.00% Unconnected

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

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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Subcatchment 150: S. Pave- Tree Filter Boxes

Runoff = 3.81 cfs @ 12.09 hrs, Volume= 11,263 cf, Depth= 5.72"
Routed to Pond 151P : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
15,460	98	Paved parking, HSG A
8,150	39	>75% Grass cover, Good, HSG A
23,610	78	Weighted Average
8,150		34.52% Pervious Area
15,460		65.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 6

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Summary for Subcatchment 160: S Loading - trench drain

Runoff = 3.30 cfs @ 12.13 hrs, Volume= 12,782 cf, Depth> 8.10"
Routed to Pond 161 : Stormwater Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
18,930	98	Paved parking, HSG A
18,930		100.00% Impervious Area

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

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Summary for Subcatchment 200: Overland Flows

Runoff = 1.09 cfs @ 12.14 hrs, Volume= 4,693 cf, Depth= 1.31"
 Routed to Reach 1R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
32,335	36	Woods, Fair, HSG A
10,610	48	Brush, Poor, HSG A
42,945	39	Weighted Average
42,945		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.00"
1.0	75	0.0150	1.22		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
0.0	10	0.2000	4.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.4	135	Total, Increased to minimum Tc = 6.0 min			

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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Subcatchment 210: Front Tree Filters- south

Runoff = 3.20 cfs @ 12.13 hrs, Volume= 10,637 cf, Depth= 5.61"
Routed to Pond 332P : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
8,150	39	>75% Grass cover, Good, HSG A
14,620	98	Paved parking, HSG A
22,770	77	Weighted Average
8,150		35.79% Pervious Area
14,620		64.21% Impervious Area

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

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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Subcatchment 221: Front Tree Filter - north

Runoff = 2.82 cfs @ 12.13 hrs, Volume= 10,237 cf, Depth= 7.40"
Routed to Pond 222 : Recharge Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
14,955	98	Paved parking, HSG A
1,645	39	>75% Grass cover, Good, HSG A
16,600	92	Weighted Average
1,645		9.91% Pervious Area
14,955		90.09% Impervious Area

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

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Summary for Subcatchment 224: Front Parking - Lo Pt

Runoff = 1.50 cfs @ 12.13 hrs, Volume= 5,140 cf, Depth= 6.44"
Routed to Pond 223 : Stormwater Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
7,375	98	Paved parking, HSG A
2,200	39	>75% Grass cover, Good, HSG A
9,575	84	Weighted Average
2,200		22.98% Pervious Area
7,375		77.02% Impervious Area

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

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Summary for Subcatchment 310: N Loading

Runoff = 1.18 cfs @ 12.13 hrs, Volume= 4,558 cf, Depth> 8.10"
Routed to Pond 301 : Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
6,750	98	Paved parking, HSG A
6,750		100.00% Impervious Area

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

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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Subcatchment 320: S. Pave- Tree Filter Boxes

Runoff = 4.64 cfs @ 12.09 hrs, Volume= 14,333 cf, Depth= 6.56"
Routed to Pond 321 : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
20,410	98	Paved parking, HSG A
5,805	39	>75% Grass cover, Good, HSG A
26,215	85	Weighted Average
5,805		22.14% Pervious Area
20,410		77.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 6

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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Subcatchment 331: overland to Basin

Runoff = 0.79 cfs @ 12.14 hrs, Volume= 3,234 cf, Depth= 1.41"
Routed to Pond 300 : Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Adj	Description
26,510	39		>75% Grass cover, Good, HSG A
990	98		Unconnected pavement, HSG A
27,500	41	40	Weighted Average, UI Adjusted
26,510			96.40% Pervious Area
990			3.60% Impervious Area
990			100.00% Unconnected

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

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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Subcatchment 340: Overland Flows

Runoff = 1.25 cfs @ 12.14 hrs, Volume= 5,142 cf, Depth= 1.41"
 Routed to Reach 3R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
28,830	36	Woods, Fair, HSG A
14,895	48	Brush, Poor, HSG A
43,725	40	Weighted Average
43,725		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.00"
1.0	75	0.0150	1.22		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
0.0	10	0.2000	4.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.4	135	Total, Increased to minimum Tc = 6.0 min			

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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Subcatchment Roof: Roof

Runoff = 17.13 cfs @ 12.13 hrs, Volume= 66,273 cf, Depth> 8.10"
Routed to Pond 165 : infiltration basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.36"

Area (sf)	CN	Description
98,150	98	Unconnected roofs, HSG A
98,150		100.00% Impervious Area
98,150		100.00% Unconnected

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

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NRCC 24-hr D 100-Year Rainfall=8.36"

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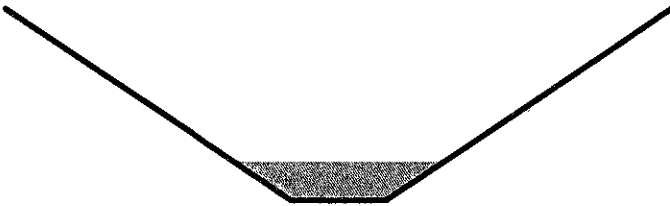
Summary for Reach 1R: S'ly Ditch

Inflow Area = 261,425 sf, 67.09% Impervious, Inflow Depth = 0.69" for 100-Year event
Inflow = 5.27 cfs @ 12.13 hrs, Volume= 14,943 cf
Outflow = 1.97 cfs @ 13.00 hrs, Volume= 14,872 cf, Atten= 63%, Lag= 51.9 min
Routed to Reach 2R : 24" Culvert

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.34 fps, Min. Travel Time= 36.7 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 100.9 min

Peak Storage= 4,340 cf @ 12.39 hrs
Average Depth at Peak Storage= 1.20', Surface Width= 6.61'
Bank-Full Depth= 6.00' Flow Area= 72.0 sf, Capacity= 58.69 cfs

3.00' x 6.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 1.5 '/' Top Width= 21.00'
Length= 750.0' Slope= 0.0007 '/'
Inlet Invert= 224.00', Outlet Invert= 223.46'



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NRCC 24-hr D 100-Year Rainfall=8.36"

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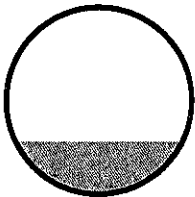
Summary for Reach 2R: 24" Culvert

Inflow Area = 261,425 sf, 67.09% Impervious, Inflow Depth > 0.68" for 100-Year event
Inflow = 1.97 cfs @ 13.00 hrs, Volume= 14,872 cf
Outflow = 1.97 cfs @ 13.02 hrs, Volume= 14,871 cf, Atten= 0%, Lag= 1.1 min
Routed to Reach 3R : S'ly Ditch

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.77 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.05 fps, Avg. Travel Time= 1.7 min

Peak Storage= 75 cf @ 13.01 hrs
Average Depth at Peak Storage= 0.55', Surface Width= 1.79'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 11.72 cfs

24.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 105.0' Slope= 0.0023 '/'
Inlet Invert= 223.46', Outlet Invert= 223.22'



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NRCC 24-hr D 100-Year Rainfall=8.36"

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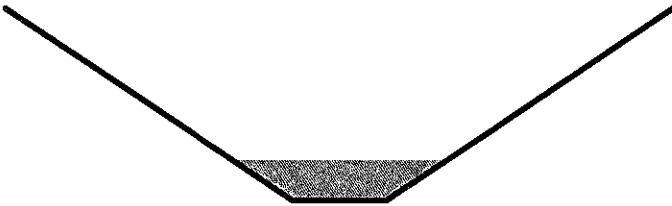
Summary for Reach 3R: S'ly Ditch

Inflow Area = 365,615 sf, 55.67% Impervious, Inflow Depth > 0.66" for 100-Year event
Inflow = 2.19 cfs @ 13.01 hrs, Volume= 20,175 cf
Outflow = 1.41 cfs @ 14.42 hrs, Volume= 19,904 cf, Atten= 36%, Lag= 84.2 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.23 fps, Min. Travel Time= 50.7 min
Avg. Velocity= 0.11 fps, Avg. Travel Time= 106.5 min

Peak Storage= 4,298 cf @ 13.57 hrs
Average Depth at Peak Storage= 1.26', Surface Width= 6.77'
Bank-Full Depth= 6.00' Flow Area= 72.0 sf, Capacity= 38.78 cfs

3.00' x 6.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 1.5 '/' Top Width= 21.00'
Length= 700.0' Slope= 0.0003 '/'
Inlet Invert= 223.22', Outlet Invert= 223.00'



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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Pond 151P: Tree filter Infiltration

Inflow Area = 23,610 sf, 65.48% Impervious, Inflow Depth = 5.72" for 100-Year event
 Inflow = 3.81 cfs @ 12.09 hrs, Volume= 11,263 cf
 Outflow = 3.74 cfs @ 12.09 hrs, Volume= 11,263 cf, Atten= 2%, Lag= 0.0 min
 Discarded = 0.63 cfs @ 12.09 hrs, Volume= 10,114 cf
 Primary = 3.11 cfs @ 12.09 hrs, Volume= 1,149 cf
 Routed to Pond 165 : infiltration basin

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.89' @ 12.09 hrs Surf.Area= 1,350 sf Storage= 1,771 cf

Plug-Flow detention time= 16.0 min calculated for 11,260 cf (100% of inflow)
 Center-of-Mass det. time= 16.0 min (833.2 - 817.2)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	1,749 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 4,725 cf Overall - 353 cf Embedded = 4,372 cf x 40.0% Voids
#2	227.00'	353 cf	12.0" Round Pipe Storage Inside #1 L= 450.0' S= 0.0010 '/'
		2,102 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	1,350	0	0
229.50	1,350	4,725	4,725

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	227.00'	12.0" Round Culvert L= 148.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.00' / 226.26' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	228.50'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 2.0' Crest Height

Discarded OutFlow Max=0.63 cfs @ 12.09 hrs HW=228.88' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 0.63 cfs)

Primary OutFlow Max=3.12 cfs @ 12.09 hrs HW=228.88' (Free Discharge)
 ↳ **2=Culvert** (Passes 3.12 cfs of 3.24 cfs potential flow)
 ↳ **3=Sharp-Crested Rectangular Weir** (Weir Controls 3.12 cfs @ 2.07 fps)

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NRCC 24-hr D 100-Year Rainfall=8.36"

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Summary for Pond 161: Stormwater Unit

Inflow Area = 18,930 sf, 100.00% Impervious, Inflow Depth > 8.10" for 100-Year event
Inflow = 3.30 cfs @ 12.13 hrs, Volume= 12,782 cf
Outflow = 3.30 cfs @ 12.13 hrs, Volume= 12,782 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.30 cfs @ 12.13 hrs, Volume= 12,782 cf
Routed to Pond 165 : infiltration basin

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 229.26' @ 12.13 hrs

Flood Elev= 233.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	12.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.00' S= 0.0357 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.30 cfs @ 12.13 hrs HW=229.26' (Free Discharge)**1=Culvert** (Inlet Controls 3.30 cfs @ 4.20 fps)

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Summary for Pond 165: infiltration basin

Inflow Area = 160,125 sf, 83.30% Impervious, Inflow Depth > 6.18" for 100-Year event
 Inflow = 22.35 cfs @ 12.10 hrs, Volume= 82,489 cf
 Outflow = 3.80 cfs @ 12.49 hrs, Volume= 82,489 cf, Atten= 83%, Lag= 23.3 min
 Discarded = 3.80 cfs @ 12.49 hrs, Volume= 82,489 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 229.13' @ 12.49 hrs Surf.Area= 10,000 sf Storage= 22,384 cf

Plug-Flow detention time= 48.4 min calculated for 82,487 cf (100% of inflow)
 Center-of-Mass det. time= 48.4 min (797.3 - 748.9)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	31,618 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	4,515	0	0
227.00	6,045	5,280	5,280
228.00	7,853	6,949	12,229
229.00	9,790	8,822	21,051
230.00	11,345	10,568	31,618

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	229.80'	12.0' long + 20.0 ' SideZ x 30.0' 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

Discarded OutFlow Max=3.80 cfs @ 12.49 hrs HW=229.13' (Free Discharge)

↑ **1=Exfiltration** (Controls 3.80 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=226.00' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 220: Infiltration Chambers

Inflow Area = 26,175 sf, 85.31% Impervious, Inflow Depth = 4.26" for 100-Year event
 Inflow = 3.74 cfs @ 12.15 hrs, Volume= 9,303 cf
 Outflow = 1.49 cfs @ 12.31 hrs, Volume= 9,303 cf, Atten= 60%, Lag= 10.0 min
 Discarded = 0.69 cfs @ 12.31 hrs, Volume= 8,515 cf
 Primary = 0.79 cfs @ 12.31 hrs, Volume= 788 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.65' @ 12.31 hrs Surf.Area= 1,556 sf Storage= 2,812 cf

Plug-Flow detention time= 29.2 min calculated for 9,300 cf (100% of inflow)
 Center-of-Mass det. time= 29.2 min (803.2 - 774.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	226.00'	1,220 cf	23.58'W x 66.00'L x 3.21'H Field A 4,994 cf Overall - 1,943 cf Embedded = 3,051 cf x 40.0% Voids
#2A	226.50'	1,943 cf	Cultec R-280HD x 45 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 5 rows
		3,163 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.00'	12.0" Round Culvert L= 250.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.50' S= 0.0020 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.69 cfs @ 12.31 hrs HW=228.64' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 0.69 cfs)

Primary OutFlow Max=0.79 cfs @ 12.31 hrs HW=228.64' (Free Discharge)
 ↳ **2=Culvert** (Barrel Controls 0.79 cfs @ 2.11 fps)

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Pond 220: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)

Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf

Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap

Row Length Adjustment= +1.00' x 6.07 sf x 5 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

9 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 64.00' Row Length +12.0" End Stone x 2 = 66.00' Base Length

5 Rows x 47.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 23.58' Base Width

6.0" Stone Base + 26.5" Chamber Height + 6.0" Stone Cover = 3.21' Field Height

45 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 5 Rows = 1,943.0 cf Chamber Storage

4,993.8 cf Field - 1,943.0 cf Chambers = 3,050.8 cf Stone x 40.0% Voids = 1,220.3 cf Stone Storage

Chamber Storage + Stone Storage = 3,163.3 cf = 0.073 af

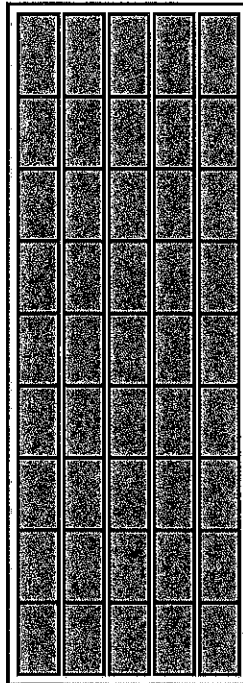
Overall Storage Efficiency = 63.3%

Overall System Size = 66.00' x 23.58' x 3.21'

45 Chambers

185.0 cy Field

113.0 cy Stone



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Summary for Pond 222: Recharge Trench

Inflow Area = 16,600 sf, 90.09% Impervious, Inflow Depth = 7.40" for 100-Year event
 Inflow = 2.82 cfs @ 12.13 hrs, Volume= 10,237 cf
 Outflow = 2.49 cfs @ 12.16 hrs, Volume= 10,237 cf, Atten= 12%, Lag= 1.9 min
 Discarded = 0.16 cfs @ 12.16 hrs, Volume= 6,074 cf
 Primary = 2.33 cfs @ 12.16 hrs, Volume= 4,163 cf
 Routed to Pond 223 : Stormwater Unit

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.88' @ 12.16 hrs Surf.Area= 690 sf Storage= 605 cf

Plug-Flow detention time= 4.2 min calculated for 10,233 cf (100% of inflow)
 Center-of-Mass det. time= 4.2 min (778.7 - 774.5)

Volume	Invert	Avail.Storage	Storage Description
#1	228.00'	1,109 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 1,380 cf Overall - 271 cf Embedded = 1,109 cf
#2	228.50'	271 cf	12.0" Round Pipe Storage Inside #1 L= 345.0' S= 0.0010 '/'
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
228.00	690	0	0
230.00	690	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	228.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.16 cfs @ 12.16 hrs HW=228.88' (Free Discharge)
 ↳1=Exfiltration (Controls 0.16 cfs)

Primary OutFlow Max=2.33 cfs @ 12.16 hrs HW=228.88' (Free Discharge)
 ↳2=Orifice/Grate (Orifice Controls 2.33 cfs @ 3.19 fps)

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Summary for Pond 223: Stormwater Unit

Inflow Area = 26,175 sf, 85.31% Impervious, Inflow Depth = 4.26" for 100-Year event
Inflow = 3.74 cfs @ 12.15 hrs, Volume= 9,303 cf
Outflow = 3.74 cfs @ 12.15 hrs, Volume= 9,303 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.74 cfs @ 12.15 hrs, Volume= 9,303 cf
Routed to Pond 220 : Infiltration Chambers

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 229.48' @ 12.15 hrs

Flood Elev= 233.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	12.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.00' S= 0.0357 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.73 cfs @ 12.15 hrs HW=229.47' (Free Discharge)**1=Culvert** (Inlet Controls 3.73 cfs @ 4.75 fps)

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Summary for Pond 300: Infiltration 1

Inflow Area = 60,465 sf, 46.56% Impervious, Inflow Depth = 1.76" for 100-Year event
 Inflow = 5.53 cfs @ 12.10 hrs, Volume= 8,860 cf
 Outflow = 1.44 cfs @ 12.30 hrs, Volume= 8,860 cf, Atten= 74%, Lag= 12.1 min
 Discarded = 1.18 cfs @ 12.30 hrs, Volume= 8,698 cf
 Primary = 0.25 cfs @ 12.30 hrs, Volume= 162 cf
 Routed to Reach 3R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.55' @ 12.30 hrs Surf.Area= 5,054 sf Storage= 3,747 cf

Plug-Flow detention time= 36.7 min calculated for 8,857 cf (100% of inflow)
 Center-of-Mass det. time= 36.7 min (844.9 - 808.2)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	7,325 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.00	900	0	0
228.00	2,610	1,755	1,755
228.50	4,440	1,763	3,518
229.00	10,790	3,808	7,325

Device	Routing	Invert	Outlet Devices
#1	Discarded	227.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.50'	10.0' long + 2.0 ' SideZ 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

Discarded OutFlow Max=1.18 cfs @ 12.30 hrs HW=228.55' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 1.18 cfs)

Primary OutFlow Max=0.25 cfs @ 12.30 hrs HW=228.55' (Free Discharge)
 ↳ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.25 cfs @ 0.51 fps)

Summary for Pond 301: Infiltration 1

Inflow Area = 32,965 sf, 82.39% Impervious, Inflow Depth > 3.76" for 100-Year event
 Inflow = 5.22 cfs @ 12.09 hrs, Volume= 10,340 cf
 Outflow = 5.13 cfs @ 12.10 hrs, Volume= 10,340 cf, Atten= 2%, Lag= 0.4 min
 Discarded = 0.22 cfs @ 12.10 hrs, Volume= 4,714 cf
 Primary = 4.92 cfs @ 12.10 hrs, Volume= 5,627 cf
 Routed to Pond 300 : Infiltration 1

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.83' @ 12.10 hrs Surf.Area= 832 sf Storage= 992 cf

Plug-Flow detention time= 16.8 min calculated for 10,340 cf (100% of inflow)
 Center-of-Mass det. time= 16.8 min (752.7 - 735.8)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	1,138 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.00	295	0	0
228.00	545	420	420
229.00	890	718	1,138

Device	Routing	Invert	Outlet Devices
#1	Discarded	227.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.50'	10.0' long + 2.0 ' SideZ 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

Discarded OutFlow Max=0.22 cfs @ 12.10 hrs HW=228.83' (Free Discharge)

↳ **1=Exfiltration** (Controls 0.22 cfs)

Primary OutFlow Max=4.89 cfs @ 12.10 hrs HW=228.83' (Free Discharge)

↳ **2=Broad-Crested Rectangular Weir** (Weir Controls 4.89 cfs @ 1.39 fps)

Summary for Pond 321: Tree filter Infiltration

Inflow Area = 26,215 sf, 77.86% Impervious, Inflow Depth = 6.56" for 100-Year event
 Inflow = 4.64 cfs @ 12.09 hrs, Volume= 14,333 cf
 Outflow = 4.48 cfs @ 12.09 hrs, Volume= 14,333 cf, Atten= 3%, Lag= 0.0 min
 Discarded = 0.30 cfs @ 12.09 hrs, Volume= 8,551 cf
 Primary = 4.18 cfs @ 12.09 hrs, Volume= 5,782 cf
 Routed to Pond 301 : Infiltration 1

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.66' @ 12.09 hrs Surf.Area= 670 sf Storage= 870 cf

Plug-Flow detention time= 8.3 min calculated for 14,328 cf (100% of inflow)
 Center-of-Mass det. time= 8.3 min (803.8 - 795.5)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	833 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 2,345 cf Overall - 262 cf Embedded = 2,083 cf x 40.0% Voids
#2	227.00'	262 cf	12.0" Round Pipe Storage Inside #1 L= 333.0' S= 0.0010 '/'
		1,095 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	670	0	0
229.50	670	2,345	2,345

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	227.00'	12.0" Round Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.00' / 226.50' S= 0.0167 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Primary	228.50'	12.0" Round Culvert L= 38.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.50' / 227.74' S= 0.0200 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.30 cfs @ 12.09 hrs HW=228.65' (Free Discharge)
 1=Exfiltration (Controls 0.30 cfs)

Primary OutFlow Max=4.16 cfs @ 12.09 hrs HW=228.65' (Free Discharge)
 2=Culvert (Inlet Controls 4.06 cfs @ 5.17 fps)
 3=Culvert (Inlet Controls 0.10 cfs @ 1.32 fps)

Summary for Pond 332P: Tree filter Infiltration

Inflow Area = 22,770 sf, 64.21% Impervious, Inflow Depth = 5.61" for 100-Year event
 Inflow = 3.20 cfs @ 12.13 hrs, Volume= 10,637 cf
 Outflow = 3.20 cfs @ 12.13 hrs, Volume= 10,637 cf, Atten= 0%, Lag= 0.0 min
 Discarded = 0.17 cfs @ 12.13 hrs, Volume= 5,011 cf
 Primary = 3.03 cfs @ 12.13 hrs, Volume= 5,625 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 231.59' @ 12.13 hrs Surf.Area= 234 sf Storage= 352 cf

Plug-Flow detention time= 15.7 min calculated for 10,633 cf (100% of inflow)
 Center-of-Mass det. time= 15.7 min (841.4 - 825.7)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	311 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 819 cf Overall - 41 cf Embedded = 778 cf x 40.0% Voids
#2	226.50'	41 cf	8.0" Round Pipe Storage Inside #1 L= 117.0' S= 0.0010 '/'
		352 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	234	0	0
229.50	234	819	819

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'

Discarded OutFlow Max=0.17 cfs @ 12.13 hrs HW=231.58' (Free Discharge)
 ↳2=Exfiltration (Controls 0.17 cfs)

Primary OutFlow Max=3.03 cfs @ 12.13 hrs HW=231.58' (Free Discharge)
 ↳1=Orifice/Grate (Orifice Controls 3.03 cfs @ 8.68 fps)

25-YEAR Post-Development - Detailed

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Time span=1.00-30.00 hrs, dt=0.01 hrs, 2901 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 110: To Exist Drvie	Runoff Area=9,410 sf 53.72% Impervious Runoff Depth=2.79" Tc=6.0 min CN=71 Runoff=0.67 cfs 2,191 cf
Subcatchment 140: overland to Basin	Runoff Area=19,435 sf 4.37% Impervious Runoff Depth=0.46" Tc=6.0 min UI Adjusted CN=40 Runoff=0.06 cfs 747 cf
Subcatchment 150: S. Pave- Tree Filter	Runoff Area=23,610 sf 65.48% Impervious Runoff Depth=3.46" Tc=0.0 min CN=78 Runoff=2.38 cfs 6,816 cf
Subcatchment 160: S Loading - trench	Runoff Area=18,930 sf 100.00% Impervious Runoff Depth>5.63" Tc=6.0 min CN=98 Runoff=2.31 cfs 8,876 cf
Subcatchment 200: Overland Flows	Runoff Area=42,945 sf 0.00% Impervious Runoff Depth=0.41" Flow Length=135' Tc=6.0 min CN=39 Runoff=0.09 cfs 1,463 cf
Subcatchment 210: Front Tree Filters-	Runoff Area=22,770 sf 64.21% Impervious Runoff Depth=3.37" Tc=6.0 min CN=77 Runoff=1.96 cfs 6,387 cf
Subcatchment 221: Front Tree Filter - north	Runoff Area=16,600 sf 90.09% Impervious Runoff Depth=4.94" Tc=6.0 min CN=92 Runoff=1.93 cfs 6,836 cf
Subcatchment 224: Front Parking - Lo Pt	Runoff Area=9,575 sf 77.02% Impervious Runoff Depth=4.07" Tc=6.0 min CN=84 Runoff=0.97 cfs 3,251 cf
Subcatchment 310: N Loading	Runoff Area=6,750 sf 100.00% Impervious Runoff Depth>5.63" Tc=6.0 min CN=98 Runoff=0.83 cfs 3,165 cf
Subcatchment 320: S. Pave- Tree Filter	Runoff Area=26,215 sf 77.86% Impervious Runoff Depth=4.18" Tc=0.0 min CN=85 Runoff=3.06 cfs 9,132 cf
Subcatchment 331: overland to Basin	Runoff Area=27,500 sf 3.60% Impervious Runoff Depth=0.46" Tc=6.0 min UI Adjusted CN=40 Runoff=0.08 cfs 1,056 cf
Subcatchment 340: Overland Flows	Runoff Area=43,725 sf 0.00% Impervious Runoff Depth=0.46" Flow Length=135' Tc=6.0 min CN=40 Runoff=0.13 cfs 1,680 cf
Subcatchment Roof: Roof	Runoff Area=98,150 sf 100.00% Impervious Runoff Depth>5.63" Tc=6.0 min CN=98 Runoff=12.00 cfs 46,020 cf
Reach 1R: S'Iy Ditch	Avg. Flow Depth=0.69' Max Vel=0.25 fps Inflow=2.44 cfs 6,315 cf n=0.100 L=750.0' S=0.0007 '/' Capacity=58.69 cfs Outflow=0.70 cfs 6,255 cf
Reach 2R: 24" Culvert	Avg. Flow Depth=0.33' Max Vel=2.05 fps Inflow=0.70 cfs 6,255 cf 24.0" Round Pipe n=0.012 L=105.0' S=0.0023 '/' Capacity=11.72 cfs Outflow=0.70 cfs 6,254 cf
Reach 3R: S'Iy Ditch	Avg. Flow Depth=0.66' Max Vel=0.16 fps Inflow=0.77 cfs 7,934 cf n=0.100 L=700.0' S=0.0003 '/' Capacity=38.78 cfs Outflow=0.43 cfs 7,688 cf

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Pond 151P: Tree filter Infiltration Peak Elev=228.09' Storage=1,316 cf Inflow=2.38 cfs 6,816 cf
Discarded=0.53 cfs 6,816 cf Primary=0.00 cfs 0 cf Outflow=0.53 cfs 6,816 cf

Pond 161: Stormwater Unit Peak Elev=228.87' Inflow=2.31 cfs 8,876 cf
12.0" Round Culvert n=0.013 L=28.0' S=0.0357 ' /' Outflow=2.31 cfs 8,876 cf

Pond 165: Infiltration basin Peak Elev=228.14' Storage=13,330 cf Inflow=14.35 cfs 55,643 cf
Discarded=2.74 cfs 55,643 cf Primary=0.00 cfs 0 cf Outflow=2.74 cfs 55,643 cf

Pond 220: Infiltration Chambers Peak Elev=227.61' Storage=1,758 cf Inflow=2.45 cfs 5,580 cf
Discarded=0.54 cfs 5,580 cf Primary=0.00 cfs 0 cf Outflow=0.54 cfs 5,580 cf

Pond 222: Recharge Trench Peak Elev=228.66' Storage=459 cf Inflow=1.93 cfs 6,836 cf
Discarded=0.15 cfs 4,508 cf Primary=1.54 cfs 2,328 cf Outflow=1.69 cfs 6,836 cf

Pond 223: Stormwater Unit Peak Elev=228.91' Inflow=2.45 cfs 5,580 cf
12.0" Round Culvert n=0.013 L=28.0' S=0.0357 ' /' Outflow=2.45 cfs 5,580 cf

Pond 300: Infiltration 1 Peak Elev=227.96' Storage=1,657 cf Inflow=3.13 cfs 3,609 cf
Discarded=0.59 cfs 3,609 cf Primary=0.00 cfs 0 cf Outflow=0.59 cfs 3,609 cf

Pond 301: Infiltration 1 Peak Elev=228.75' Storage=926 cf Inflow=3.37 cfs 6,088 cf
Discarded=0.21 cfs 3,535 cf Primary=3.11 cfs 2,553 cf Outflow=3.32 cfs 6,088 cf

Pond 321: Tree filter Infiltration Peak Elev=227.98' Storage=667 cf Inflow=3.06 cfs 9,132 cf
Discarded=0.26 cfs 6,209 cf Primary=2.64 cfs 2,923 cf Outflow=2.89 cfs 9,132 cf

Pond 332P: Tree filter Infiltration Peak Elev=229.39' Storage=342 cf Inflow=1.96 cfs 6,387 cf
Discarded=0.12 cfs 3,727 cf Primary=1.73 cfs 2,660 cf Outflow=1.85 cfs 6,387 cf

Total Runoff Area = 365,615 sf Runoff Volume = 97,620 cf Average Runoff Depth = 3.20"
44.33% Pervious = 162,070 sf 55.67% Impervious = 203,545 sf

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Summary for Subcatchment 110: To Exist Drvie

Runoff = 0.67 cfs @ 12.13 hrs, Volume= 2,191 cf, Depth= 2.79"
Routed to Reach 1R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
5,055	98	Paved parking, HSG A
4,355	39	>75% Grass cover, Good, HSG A
9,410	71	Weighted Average
4,355		46.28% Pervious Area
5,055		53.72% Impervious Area

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

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Summary for Subcatchment 140: overland to Basin

Runoff = 0.06 cfs @ 12.18 hrs, Volume= 747 cf, Depth= 0.46"
Routed to Pond 165 : infiltration basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Adj	Description
18,585	39		>75% Grass cover, Good, HSG A
850	98		Unconnected pavement, HSG A
19,435	42	40	Weighted Average, UI Adjusted
18,585			95.63% Pervious Area
850			4.37% Impervious Area
850			100.00% Unconnected

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

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Summary for Subcatchment 150: S. Pave- Tree Filter Boxes

Runoff = 2.38 cfs @ 12.09 hrs, Volume= 6,816 cf, Depth= 3.46"
Routed to Pond 151P : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
15,460	98	Paved parking, HSG A
8,150	39	>75% Grass cover, Good, HSG A
23,610	78	Weighted Average
8,150		34.52% Pervious Area
15,460		65.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 6

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Summary for Subcatchment 160: S Loading - trench drain

Runoff = 2.31 cfs @ 12.13 hrs, Volume= 8,876 cf, Depth> 5.63"
Routed to Pond 161 : Stormwater Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
18,930	98	Paved parking, HSG A
18,930		100.00% Impervious Area

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

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Summary for Subcatchment 200: Overland Flows

Runoff = 0.09 cfs @ 12.26 hrs, Volume= 1,463 cf, Depth= 0.41"
 Routed to Reach 1R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
32,335	36	Woods, Fair, HSG A
10,610	48	Brush, Poor, HSG A
42,945	39	Weighted Average
42,945		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.00"
1.0	75	0.0150	1.22		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
0.0	10	0.2000	4.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.4	135	Total, Increased to minimum Tc = 6.0 min			

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Summary for Subcatchment 210: Front Tree Filters- south

Runoff = 1.96 cfs @ 12.13 hrs, Volume= 6,387 cf, Depth= 3.37"
Routed to Pond 332P : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
8,150	39	>75% Grass cover, Good, HSG A
14,620	98	Paved parking, HSG A
22,770	77	Weighted Average
8,150		35.79% Pervious Area
14,620		64.21% Impervious Area

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

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Summary for Subcatchment 221: Front Tree Filter - north

Runoff = 1.93 cfs @ 12.13 hrs, Volume= 6,836 cf, Depth= 4.94"
Routed to Pond 222 : Recharge Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
14,955	98	Paved parking, HSG A
1,645	39	>75% Grass cover, Good, HSG A
16,600	92	Weighted Average
1,645		9.91% Pervious Area
14,955		90.09% Impervious Area

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

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Summary for Subcatchment 224: Front Parking - Lo Pt

Runoff = 0.97 cfs @ 12.13 hrs, Volume= 3,251 cf, Depth= 4.07"
Routed to Pond 223 : Stormwater Unit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
7,375	98	Paved parking, HSG A
2,200	39	>75% Grass cover, Good, HSG A
9,575	84	Weighted Average
2,200		22.98% Pervious Area
7,375		77.02% Impervious Area

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

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Summary for Subcatchment 310: N Loading

Runoff = 0.83 cfs @ 12.13 hrs, Volume= 3,165 cf, Depth> 5.63"
Routed to Pond 301 : Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
6,750	98	Paved parking, HSG A
6,750		100.00% Impervious Area

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

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NRCC 24-hr D 25-Year Rainfall=5.87"

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Summary for Subcatchment 320: S. Pave- Tree Filter Boxes

Runoff = 3.06 cfs @ 12.09 hrs, Volume= 9,132 cf, Depth= 4.18"
Routed to Pond 321 : Tree filter Infiltration

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
20,410	98	Paved parking, HSG A
5,805	39	>75% Grass cover, Good, HSG A
26,215	85	Weighted Average
5,805		22.14% Pervious Area
20,410		77.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 6

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Summary for Subcatchment 331: overland to Basin

Runoff = 0.08 cfs @ 12.18 hrs, Volume= 1,056 cf, Depth= 0.46"
Routed to Pond 300 : Infiltration 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Adj	Description
26,510	39		>75% Grass cover, Good, HSG A
990	98		Unconnected pavement, HSG A
27,500	41	40	Weighted Average, UI Adjusted
26,510			96.40% Pervious Area
990			3.60% Impervious Area
990			100.00% Unconnected

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

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Summary for Subcatchment 340: Overland Flows

Runoff = 0.13 cfs @ 12.18 hrs, Volume= 1,680 cf, Depth= 0.46"
 Routed to Reach 3R : S'ly Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
28,830	36	Woods, Fair, HSG A
14,895	48	Brush, Poor, HSG A
43,725	40	Weighted Average
43,725		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	50	0.0200	0.35		Sheet Flow, Fallow n= 0.050 P2= 3.00"
1.0	75	0.0150	1.22		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
0.0	10	0.2000	4.47		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
3.4	135	Total, Increased to minimum Tc = 6.0 min			

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Summary for Subcatchment Roof: Roof

Runoff = 12.00 cfs @ 12.13 hrs, Volume= 46,020 cf, Depth> 5.63"
Routed to Pond 165 : infiltration basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 25-Year Rainfall=5.87"

Area (sf)	CN	Description
98,150	98	Unconnected roofs, HSG A
98,150		100.00% Impervious Area
98,150		100.00% Unconnected

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

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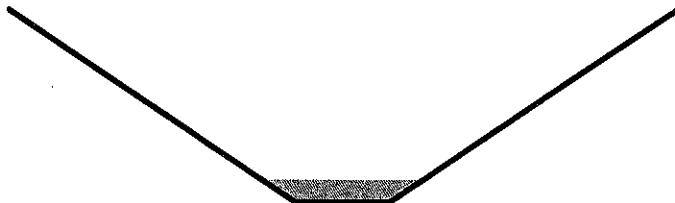
Summary for Reach 1R: S'ly Ditch

Inflow Area = 261,425 sf, 67.09% Impervious, Inflow Depth = 0.29" for 25-Year event
Inflow = 2.44 cfs @ 12.15 hrs, Volume= 6,315 cf
Outflow = 0.70 cfs @ 13.19 hrs, Volume= 6,255 cf, Atten= 71%, Lag= 62.3 min
Routed to Reach 2R : 24" Culvert

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.25 fps, Min. Travel Time= 49.3 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 122.3 min

Peak Storage= 2,085 cf @ 12.36 hrs
Average Depth at Peak Storage= 0.69' , Surface Width= 5.07'
Bank-Full Depth= 6.00' Flow Area= 72.0 sf, Capacity= 58.69 cfs

3.00' x 6.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 1.5 '/' Top Width= 21.00'
Length= 750.0' Slope= 0.0007 '/'
Inlet Invert= 224.00', Outlet Invert= 223.46'



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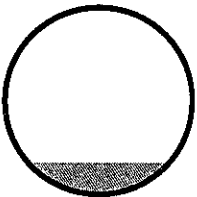
Summary for Reach 2R: 24" Culvert

Inflow Area = 261,425 sf, 67.09% Impervious, Inflow Depth > 0.29" for 25-Year event
Inflow = 0.70 cfs @ 13.19 hrs, Volume= 6,255 cf
Outflow = 0.70 cfs @ 13.21 hrs, Volume= 6,254 cf, Atten= 0%, Lag= 1.5 min
Routed to Reach 3R : S'ly Ditch

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.05 fps, Min. Travel Time= 0.9 min
Avg. Velocity= 0.88 fps, Avg. Travel Time= 2.0 min

Peak Storage= 36 cf @ 13.20 hrs
Average Depth at Peak Storage= 0.33' , Surface Width= 1.49'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 11.72 cfs

24.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 105.0' Slope= 0.0023 '/'
Inlet Invert= 223.46', Outlet Invert= 223.22'



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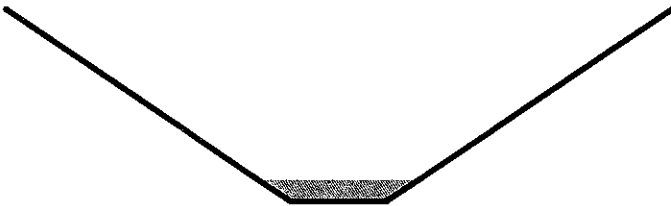
Summary for Reach 3R: S'ly Ditch

Inflow Area = 365,615 sf, 55.67% Impervious, Inflow Depth > 0.26" for 25-Year event
Inflow = 0.77 cfs @ 13.21 hrs, Volume= 7,934 cf
Outflow = 0.43 cfs @ 15.38 hrs, Volume= 7,688 cf, Atten= 44%, Lag= 130.6 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.16 fps, Min. Travel Time= 71.3 min
Avg. Velocity = 0.09 fps, Avg. Travel Time= 129.8 min

Peak Storage= 1,842 cf @ 14.19 hrs
Average Depth at Peak Storage= 0.66', Surface Width= 4.98'
Bank-Full Depth= 6.00' Flow Area= 72.0 sf, Capacity= 38.78 cfs

3.00' x 6.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 1.5 '/' Top Width= 21.00'
Length= 700.0' Slope= 0.0003 '/'
Inlet Invert= 223.22', Outlet Invert= 223.00'



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Summary for Pond 151P: Tree filter Infiltration

Inflow Area = 23,610 sf, 65.48% Impervious, Inflow Depth = 3.46" for 25-Year event
 Inflow = 2.38 cfs @ 12.09 hrs, Volume= 6,816 cf
 Outflow = 0.53 cfs @ 12.29 hrs, Volume= 6,816 cf, Atten= 78%, Lag= 12.2 min
 Discarded = 0.53 cfs @ 12.29 hrs, Volume= 6,816 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Pond 165 : infiltration basin

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.09' @ 12.29 hrs Surf.Area= 1,350 sf Storage= 1,316 cf

Plug-Flow detention time= 14.9 min calculated for 6,814 cf (100% of inflow)
 Center-of-Mass det. time= 14.9 min (850.7 - 835.8)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	1,749 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 4,725 cf Overall - 353 cf Embedded = 4,372 cf x 40.0% Voids
#2	227.00'	353 cf	12.0" Round Pipe Storage Inside #1 L= 450.0' S= 0.0010 '/'
		2,102 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	1,350	0	0
229.50	1,350	4,725	4,725

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	227.00'	12.0" Round Culvert L= 148.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.00' / 226.26' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	228.50'	4.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 2.0' Crest Height

Discarded OutFlow Max=0.53 cfs @ 12.29 hrs HW=228.09' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.53 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=226.00' (Free Discharge)
 ↑ **2=Culvert** (Controls 0.00 cfs)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 161: Stormwater Unit

Inflow Area = 18,930 sf, 100.00% Impervious, Inflow Depth > 5.63" for 25-Year event
 Inflow = 2.31 cfs @ 12.13 hrs, Volume= 8,876 cf
 Outflow = 2.31 cfs @ 12.13 hrs, Volume= 8,876 cf, Atten= 0%, Lag= 0.0 min
 Primary = 2.31 cfs @ 12.13 hrs, Volume= 8,876 cf
 Routed to Pond 165 : infiltration basin

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 228.87' @ 12.13 hrs

Flood Elev= 233.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	12.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.00' S= 0.0357 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.31 cfs @ 12.13 hrs HW=228.87' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 2.31 cfs @ 3.18 fps)

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NRCC 24-hr D 25-Year Rainfall=5.87"

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Summary for Pond 165: infiltration basin

Inflow Area = 160,125 sf, 83.30% Impervious, Inflow Depth > 4.17" for 25-Year event
 Inflow = 14.35 cfs @ 12.13 hrs, Volume= 55,643 cf
 Outflow = 2.74 cfs @ 12.44 hrs, Volume= 55,643 cf, Atten= 81%, Lag= 18.9 min
 Discarded = 2.74 cfs @ 12.44 hrs, Volume= 55,643 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.14' @ 12.44 hrs Surf.Area= 8,120 sf Storage= 13,330 cf

Plug-Flow detention time= 35.4 min calculated for 55,642 cf (100% of inflow)
 Center-of-Mass det. time= 35.4 min (787.1 - 751.7)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	31,618 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	4,515	0	0
227.00	6,045	5,280	5,280
228.00	7,853	6,949	12,229
229.00	9,790	8,822	21,051
230.00	11,345	10,568	31,618

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	229.80'	12.0' long + 20.0 ' SideZ x 30.0' 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

Discarded OutFlow Max=2.74 cfs @ 12.44 hrs HW=228.14' (Free Discharge)

↑ **1=Exfiltration** (Controls 2.74 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=226.00' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

5554 VMD Post- Development

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Summary for Pond 220: Infiltration Chambers

Inflow Area = 26,175 sf, 85.31% Impervious, Inflow Depth = 2.56" for 25-Year event
 Inflow = 2.45 cfs @ 12.15 hrs, Volume= 5,580 cf
 Outflow = 0.54 cfs @ 12.45 hrs, Volume= 5,580 cf, Atten= 78%, Lag= 18.0 min
 Discarded = 0.54 cfs @ 12.45 hrs, Volume= 5,580 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.61' @ 12.45 hrs Surf.Area= 1,556 sf Storage= 1,758 cf

Plug-Flow detention time= 24.3 min calculated for 5,580 cf (100% of inflow)
 Center-of-Mass det. time= 24.3 min (810.2 - 785.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	226.00'	1,220 cf	23.58'W x 66.00'L x 3.21'H Field A 4,994 cf Overall - 1,943 cf Embedded = 3,051 cf x 40.0% Voids
#2A	226.50'	1,943 cf	Cultec R-280HD x 45 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 5 rows
		3,163 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.00'	12.0" Round Culvert L= 250.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.50' S= 0.0020 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.54 cfs @ 12.45 hrs HW=227.61' (Free Discharge)↑ **1=Exfiltration** (Controls 0.54 cfs)**Primary OutFlow** Max=0.00 cfs @ 1.00 hrs HW=226.00' (Free Discharge)↑ **2=Culvert** (Controls 0.00 cfs)

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Pond 220: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)

Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf

Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap

Row Length Adjustment= +1.00' x 6.07 sf x 5 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

9 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 64.00' Row Length +12.0" End Stone x 2 = 66.00' Base Length

5 Rows x 47.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 23.58' Base Width

6.0" Stone Base + 26.5" Chamber Height + 6.0" Stone Cover = 3.21' Field Height

45 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 5 Rows = 1,943.0 cf Chamber Storage

4,993.8 cf Field - 1,943.0 cf Chambers = 3,050.8 cf Stone x 40.0% Voids = 1,220.3 cf Stone Storage

Chamber Storage + Stone Storage = 3,163.3 cf = 0.073 af

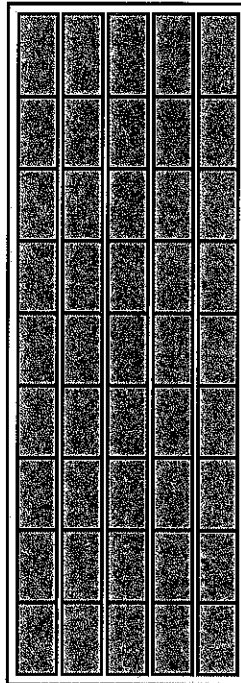
Overall Storage Efficiency = 63.3%

Overall System Size = 66.00' x 23.58' x 3.21'

45 Chambers

185.0 cy Field

113.0 cy Stone



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Summary for Pond 222: Recharge Trench

Inflow Area = 16,600 sf, 90.09% Impervious, Inflow Depth = 4.94" for 25-Year event
 Inflow = 1.93 cfs @ 12.13 hrs, Volume= 6,836 cf
 Outflow = 1.69 cfs @ 12.16 hrs, Volume= 6,836 cf, Atten= 12%, Lag= 2.0 min
 Discarded = 0.15 cfs @ 12.16 hrs, Volume= 4,508 cf
 Primary = 1.54 cfs @ 12.16 hrs, Volume= 2,328 cf
 Routed to Pond 223 : Stormwater Unit

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 228.66' @ 12.16 hrs Surf.Area= 690 sf Storage= 459 cf

Plug-Flow detention time= 4.0 min calculated for 6,834 cf (100% of inflow)

Center-of-Mass det. time= 4.0 min (790.8 - 786.8)

Volume	Invert	Avail.Storage	Storage Description
#1	228.00'	1,109 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 1,380 cf Overall - 271 cf Embedded = 1,109 cf
#2	228.50'	271 cf	12.0" Round Pipe Storage Inside #1 L= 345.0' S= 0.0010 '/'
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
228.00	690	0	0
230.00	690	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	228.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.15 cfs @ 12.16 hrs HW=228.66' (Free Discharge)↑**1=Exfiltration** (Controls 0.15 cfs)**Primary OutFlow** Max=1.54 cfs @ 12.16 hrs HW=228.66' (Free Discharge)↑**2=Orifice/Grate** (Orifice Controls 1.54 cfs @ 2.77 fps)

Summary for Pond 223: Stormwater Unit

Inflow Area = 26,175 sf, 85.31% Impervious, Inflow Depth = 2.56" for 25-Year event
 Inflow = 2.45 cfs @ 12.15 hrs, Volume= 5,580 cf
 Outflow = 2.45 cfs @ 12.15 hrs, Volume= 5,580 cf, Atten= 0%, Lag= 0.0 min
 Primary = 2.45 cfs @ 12.15 hrs, Volume= 5,580 cf
 Routed to Pond 220 : Infiltration Chambers

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.91' @ 12.15 hrs
 Flood Elev= 233.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	12.0" Round Culvert L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.00' / 227.00' S= 0.0357 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.45 cfs @ 12.15 hrs HW=228.91' (Free Discharge)
 1=Culvert (Inlet Controls 2.45 cfs @ 3.25 fps)

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Summary for Pond 300: Infiltration 1

Inflow Area = 60,465 sf, 46.56% Impervious, Inflow Depth = 0.72" for 25-Year event
 Inflow = 3.13 cfs @ 12.10 hrs, Volume= 3,609 cf
 Outflow = 0.59 cfs @ 12.33 hrs, Volume= 3,609 cf, Atten= 81%, Lag= 14.0 min
 Discarded = 0.59 cfs @ 12.33 hrs, Volume= 3,609 cf
 Primary = 0.00 cfs @ 1.00 hrs, Volume= 0 cf
 Routed to Reach 3R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.96' @ 12.33 hrs Surf.Area= 2,545 sf Storage= 1,657 cf

Plug-Flow detention time= 27.5 min calculated for 3,609 cf (100% of inflow)
 Center-of-Mass det. time= 27.5 min (839.0 - 811.4)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	7,325 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.00	900	0	0
228.00	2,610	1,755	1,755
228.50	4,440	1,763	3,518
229.00	10,790	3,808	7,325

Device	Routing	Invert	Outlet Devices
#1	Discarded	227.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.50'	10.0' long + 2.0 ' SideZ 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

Discarded OutFlow Max=0.59 cfs @ 12.33 hrs HW=227.96' (Free Discharge)
 ↳ **1=Exfiltration** (Controls 0.59 cfs)

Primary OutFlow Max=0.00 cfs @ 1.00 hrs HW=227.00' (Free Discharge)
 ↳ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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Summary for Pond 301: Infiltration 1

Inflow Area = 32,965 sf, 82.39% Impervious, Inflow Depth > 2.22" for 25-Year event
 Inflow = 3.37 cfs @ 12.09 hrs, Volume= 6,088 cf
 Outflow = 3.32 cfs @ 12.10 hrs, Volume= 6,088 cf, Atten= 1%, Lag= 0.4 min
 Discarded = 0.21 cfs @ 12.10 hrs, Volume= 3,535 cf
 Primary = 3.11 cfs @ 12.10 hrs, Volume= 2,553 cf
 Routed to Pond 300 : Infiltration 1

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.75' @ 12.10 hrs Surf.Area= 804 sf Storage= 926 cf

Plug-Flow detention time= 19.5 min calculated for 6,088 cf (100% of inflow)
 Center-of-Mass det. time= 19.5 min (758.5 - 739.0)

Volume	Invert	Avail.Storage	Storage Description
#1	227.00'	1,138 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.00	295	0	0
228.00	545	420	420
229.00	890	718	1,138

Device	Routing	Invert	Outlet Devices
#1	Discarded	227.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	228.50'	10.0' long + 2.0 ' SideZ 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

Discarded OutFlow Max=0.21 cfs @ 12.10 hrs HW=228.75' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.21 cfs)

Primary OutFlow Max=3.10 cfs @ 12.10 hrs HW=228.75' (Free Discharge)
 ↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 3.10 cfs @ 1.18 fps)

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Summary for Pond 321: Tree filter Infiltration

Inflow Area = 26,215 sf, 77.86% Impervious, Inflow Depth = 4.18" for 25-Year event
 Inflow = 3.06 cfs @ 12.09 hrs, Volume= 9,132 cf
 Outflow = 2.89 cfs @ 12.09 hrs, Volume= 9,132 cf, Atten= 5%, Lag= 0.0 min
 Discarded = 0.26 cfs @ 12.09 hrs, Volume= 6,209 cf
 Primary = 2.64 cfs @ 12.09 hrs, Volume= 2,923 cf
 Routed to Pond 301 : Infiltration 1

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 227.98' @ 12.09 hrs Surf.Area= 670 sf Storage= 667 cf

Plug-Flow detention time= 7.8 min calculated for 9,128 cf (100% of inflow)
 Center-of-Mass det. time= 7.8 min (819.4 - 811.6)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	833 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 2,345 cf Overall - 262 cf Embedded = 2,083 cf x 40.0% Voids
#2	227.00'	262 cf	12.0" Round Pipe Storage Inside #1 L= 333.0' S= 0.0010 '/'
		1,095 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	670	0	0
229.50	670	2,345	2,345

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'
#2	Primary	227.00'	12.0" Round Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 227.00' / 226.50' S= 0.0167 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Primary	228.50'	12.0" Round Culvert L= 38.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 228.50' / 227.74' S= 0.0200 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.26 cfs @ 12.09 hrs HW=227.98' (Free Discharge)
 1=Exfiltration (Controls 0.26 cfs)

Primary OutFlow Max=2.63 cfs @ 12.09 hrs HW=227.98' (Free Discharge)
 2=Culvert (Inlet Controls 2.63 cfs @ 3.37 fps)
 3=Culvert (Controls 0.00 cfs)

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Summary for Pond 332P: Tree filter Infiltration

Inflow Area = 22,770 sf, 64.21% Impervious, Inflow Depth = 3.37" for 25-Year event
 Inflow = 1.96 cfs @ 12.13 hrs, Volume= 6,387 cf
 Outflow = 1.85 cfs @ 12.15 hrs, Volume= 6,387 cf, Atten= 5%, Lag= 1.3 min
 Discarded = 0.12 cfs @ 12.15 hrs, Volume= 3,727 cf
 Primary = 1.73 cfs @ 12.15 hrs, Volume= 2,660 cf
 Routed to Reach 1R : S'ly Ditch

Routing by Stor-Ind method, Time Span= 1.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 229.39' @ 12.15 hrs Surf.Area= 234 sf Storage= 342 cf

Plug-Flow detention time= 15.3 min calculated for 6,384 cf (100% of inflow)
 Center-of-Mass det. time= 15.3 min (859.8 - 844.6)

Volume	Invert	Avail.Storage	Storage Description
#1	226.00'	311 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 819 cf Overall - 41 cf Embedded = 778 cf x 40.0% Voids
#2	226.50'	41 cf	8.0" Round Pipe Storage Inside #1 L= 117.0' S= 0.0010 '/'
		352 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.00	234	0	0
229.50	234	819	819

Device	Routing	Invert	Outlet Devices
#1	Primary	228.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	226.00'	8.270 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 224.00'

Discarded OutFlow Max=0.12 cfs @ 12.15 hrs HW=229.39' (Free Discharge)
 ↳ **2=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=1.73 cfs @ 12.15 hrs HW=229.39' (Free Discharge)
 ↳ **1=Orifice/Grate** (Orifice Controls 1.73 cfs @ 4.95 fps)