Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.62		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
0.1	20	0.0300	2.79		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
4.9					**Direct Entry, 1/10 Hour Minumum**
6.0	120	Total			

Summary for Subcatchment EX1C:

Runoff = 2.29 cfs @ 12.08 hrs, Volume= 7,512 cf, Depth> 4.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
2,119	39	>75% Grass cover, Good, HSG A
18,017	98	Paved parking, HSG A
20,136	92	Weighted Average
2,119		10.52% Pervious Area
18,017		89.48% Impervious Area

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

Summary for Subcatchment EX1D:

Runoff = 2.14 cfs @ 12.08 hrs, Volume= 7,256 cf, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
774	39	>75% Grass cover, Good, HSG A
17,322	98	Paved parking, HSG A
18,096	95	Weighted Average
774		4.28% Pervious Area
17,322		95.72% Impervious Area

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

Summary for Subcatchment EX1E:

Runoff = 0.93 cfs @ 12.08 hrs, Volume= 3,153 cf, Depth> 4.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
428	39	>75% Grass cover, Good, HSG A
7,436	98	Paved parking, HSG A
7,864	95	Weighted Average
428		5.44% Pervious Area
7,436		94.56% Impervious Area

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

Summary for Subcatchment EX1EO: Offsite Flow

Runoff = 5.74 cfs @ 12.10 hrs, Volume= 19,069 cf, Depth> 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
141,884	61	1/4 acre lots, 38% imp, HSG A
87,968		62.00% Pervious Area
53,916		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.62		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
0.1	20	0.0300	2.79		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
4.9					**Direct Entry, 1/10 Hour Minumum**
6.0	120	Total			

Summary for Subcatchment EX2:

Runoff = 0.01 cfs @ 12.41 hrs, Volume= 71 cf, Depth> 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
2,952	39	>75% Grass cover, Good, HSG A
2,952		100.00% Pervious Area

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

Summary for Subcatchment EX2O: Offsite Flow to Isolated Pocket Wetland (From Peabody GIS)

Runoff = 10.49 cfs @ 12.10 hrs, Volume= 34,840 cf, Depth> 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
259,227	61	1/4 acre lots, 38% imp, HSG A
160,721		62.00% Pervious Area
98,506		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0638	2.19		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
0.9	229	0.0638	4.07		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
4.3					**Direct Entry, 1/10 Hour Minimum**
6.0	329	Total			

Summary for Reach DP1: Municipal System (Oak Street)

Inflow Area = 251,360 sf, 51.02% Impervious, Inflow Depth > 2.33" for 25-year event
Inflow = 9.08 cfs @ 12.15 hrs, Volume= 48,758 cf
Outflow = 9.08 cfs @ 12.15 hrs, Volume= 48,758 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach DP2: Abutting Properties

Inflow Area = 262,179 sf, 37.57% Impervious, Inflow Depth = 0.00" for 25-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: Littles Lane CB

Inflow Area = 149,748 sf, 40.97% Impervious, Inflow Depth > 1.78" for 25-year event
Inflow = 6.66 cfs @ 12.10 hrs, Volume= 22,223 cf
Outflow = 6.66 cfs @ 12.10 hrs, Volume= 22,223 cf, Atten= 0%, Lag= 0.2 min
Primary = 3.82 cfs @ 12.10 hrs, Volume= 20,869 cf
Secondary = 2.84 cfs @ 12.10 hrs, Volume= 1,354 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.94' @ 12.10 hrs Surf.Area= 243 sf Storage= 30 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (851.8 - 851.8)

Volume	Invert	Avail.Storage	Storage Description
#1	21.70'	358 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.70	1	0	0
22.00	300	45	45
22.50	950	313	358

Device	Routing	Invert	Outlet Devices
#1	Primary	18.76'	**12.0" Round Culvert** L= 350.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.76' / 17.36' S= 0.0040 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Secondary	21.70'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=3.82 cfs @ 12.10 hrs HW=21.94' (Free Discharge)
└─**1=Culvert** (Barrel Controls 3.82 cfs @ 4.86 fps)

Secondary OutFlow Max=2.84 cfs @ 12.10 hrs HW=21.94' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 2.84 cfs @ 1.17 fps)

Summary for Pond CB1A: CB1A

Inflow Area = 101,612 sf, 65.82% Impervious, Inflow Depth > 3.29" for 25-year event
Inflow = 5.31 cfs @ 12.18 hrs, Volume= 27,889 cf
Outflow = 5.31 cfs @ 12.18 hrs, Volume= 27,889 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.31 cfs @ 12.18 hrs, Volume= 27,889 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.17' @ 12.18 hrs
Flood Elev= 22.78'

Device	Routing	Invert	Outlet Devices
#1	Primary	18.70'	**12.0" Round Culvert** L= 130.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 18.70' / 16.70' S= 0.0154 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Primary	22.80'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=5.31 cfs @ 12.18 hrs HW=21.17' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 5.31 cfs @ 6.76 fps)
└—**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond CB1B: CB1B

Inflow Area = 98,349 sf, 66.74% Impervious, Inflow Depth > 3.36" for 25-year event
Inflow = 10.75 cfs @ 12.09 hrs, Volume= 27,499 cf
Outflow = 5.22 cfs @ 12.20 hrs, Volume= 27,450 cf, Atten= 51%, Lag= 6.5 min
Primary = 5.22 cfs @ 12.20 hrs, Volume= 27,450 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.75' @ 12.20 hrs Surf.Area= 6,187 sf Storage= 2,420 cf
Flood Elev= 20.66' Surf.Area= 5,433 sf Storage= 1,884 cf

Plug-Flow detention time= 3.8 min calculated for 27,450 cf (100% of inflow)
Center-of-Mass det. time= 2.7 min (798.8 - 796.1)

Volume	Invert	Avail.Storage	Storage Description
#1	19.96'	57,787 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	13.40'	82 cf	**4.00'D x 6.56'H Vertical Cone/Cylinder**
		57,869 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
19.96	4	0	0
20.00	37	1	1
21.00	8,193	4,115	4,116
22.00	23,641	15,917	20,033
23.00	51,867	37,754	57,787

Device	Routing	Invert	Outlet Devices
#1	Primary	17.10'	**12.0" Round Culvert** L= 125.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 17.10' / 16.80' S= 0.0024 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Secondary	22.90'	**15.0' long x 10.0' breadth Broad-Crested Weir (Oak Street)** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=5.22 cfs @ 12.20 hrs HW=20.75' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 5.22 cfs @ 6.64 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.40' (Free Discharge)
↑—**2=Broad-Crested Weir (Oak Street)** (Controls 0.00 cfs)

Summary for Pond ER2P: Offsite Isolated Wetland

Inflow Area =	262,179 sf,	37.57% Impervious,	Inflow Depth >	1.60"	for 25-year event
Inflow =	10.49 cfs @	12.10 hrs, Volume=	34,911 cf		
Outflow =	1.09 cfs @	13.49 hrs, Volume=	34,816 cf,	Atten= 90%,	Lag= 83.4 min
Discarded =	1.09 cfs @	13.49 hrs, Volume=	34,816 cf		
Primary =	0.00 cfs @	0.00 hrs, Volume=	0 cf		

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.02' @ 13.49 hrs Surf.Area= 19,552 sf Storage= 13,489 cf

Plug-Flow detention time= 144.4 min calculated for 34,801 cf (100% of inflow)
Center-of-Mass det. time= 142.8 min (1,009.1 - 866.3)

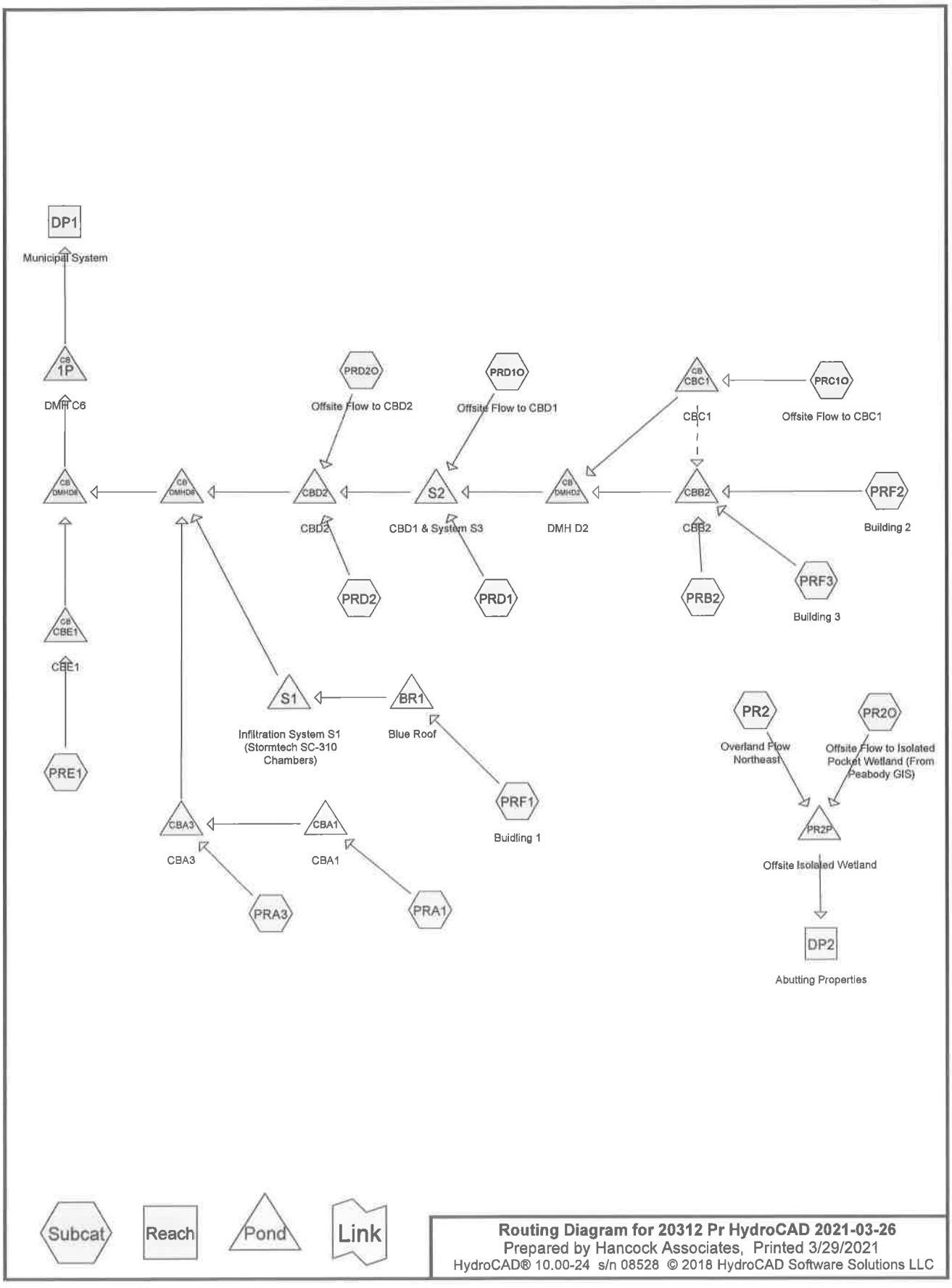
Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	61,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.00	6,704	0	0
21.00	19,440	13,072	13,072
22.00	24,701	22,071	35,143
23.00	27,462	26,082	61,224

Device	Routing	Invert	Outlet Devices
#1	Primary	22.96'	**24.0' long x 15.0' 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
#2	Discarded	20.00'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.09 cfs @ 13.49 hrs HW=21.02' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=20.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)



Routing Diagram for 20312 Pr HydroCAD 2021-03-26
Prepared by Hancock Associates, Printed 3/29/2021

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR2: Overland Flow Northeast Runoff Area=2,975 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0 cf

SubcatchmentPR2O: Offsite Flow to Runoff Area=259,227 sf 38.00% Impervious Runoff Depth>0.40"
Flow Length=329' Slope=0.0638 '/' Tc=6.0 min CN=61 Runoff=1.65 cfs 8,703 cf

SubcatchmentPRA1: Runoff Area=8,133 sf 64.42% Impervious Runoff Depth>1.14"
Tc=5.0 min CN=77 Runoff=0.25 cfs 772 cf

SubcatchmentPRA3: Runoff Area=5,679 sf 64.80% Impervious Runoff Depth>1.14"
Tc=5.0 min CN=77 Runoff=0.18 cfs 539 cf

SubcatchmentPRB2: Runoff Area=8,768 sf 86.58% Impervious Runoff Depth>2.07"
Tc=5.0 min CN=90 Runoff=0.50 cfs 1,516 cf

SubcatchmentPRC1O: Offsite Flow to Runoff Area=141,885 sf 38.00% Impervious Runoff Depth>0.40"
Flow Length=454' Slope=0.0462 '/' Tc=6.0 min CN=61 Runoff=0.91 cfs 4,764 cf

SubcatchmentPRD1: Runoff Area=12,642 sf 72.20% Impervious Runoff Depth>1.46"
Tc=5.0 min CN=82 Runoff=0.51 cfs 1,535 cf

SubcatchmentPRD1O: Offsite Flow to Runoff Area=36,850 sf 38.00% Impervious Runoff Depth>0.40"
Flow Length=100' Slope=0.0300 '/' Tc=6.0 min CN=61 Runoff=0.24 cfs 1,237 cf

SubcatchmentPRD2: Runoff Area=6,009 sf 67.27% Impervious Runoff Depth>1.26"
Tc=5.0 min CN=79 Runoff=0.21 cfs 631 cf

SubcatchmentPRD2O: Offsite Flow to Runoff Area=5,490 sf 38.00% Impervious Runoff Depth>0.40"
Flow Length=100' Slope=0.0300 '/' Tc=6.0 min CN=61 Runoff=0.04 cfs 184 cf

SubcatchmentPRE1: Runoff Area=1,173 sf 35.38% Impervious Runoff Depth>0.37"
Tc=5.0 min CN=60 Runoff=0.01 cfs 36 cf

SubcatchmentPRF1: Buidling 1 Runoff Area=18,632 sf 100.00% Impervious Runoff Depth>2.87"
Tc=5.0 min CN=98 Runoff=1.33 cfs 4,450 cf

SubcatchmentPRF2: Building 2 Runoff Area=3,040 sf 100.00% Impervious Runoff Depth>2.87"
Tc=5.0 min CN=98 Runoff=0.22 cfs 726 cf

SubcatchmentPRF3: Building 3 Runoff Area=3,040 sf 100.00% Impervious Runoff Depth>2.87"
Tc=5.0 min CN=98 Runoff=0.22 cfs 726 cf

Reach DP1: Municipal System Inflow=1.33 cfs 11,882 cf
Outflow=1.33 cfs 11,882 cf

Reach DP2: Abutting Properties Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Pond 1P: DMH C6 Peak Elev=17.74' Inflow=1.33 cfs 11,882 cf
12.0" Round Culvert n=0.012 L=112.0' S=0.0009 '/' Outflow=1.33 cfs 11,882 cf

Pond BR1: Blue Roof Peak Elev=77.15' Storage=2,722 cf Inflow=1.33 cfs 4,450 cf
Outflow=0.11 cfs 3,166 cf

Pond CBA1: CBA1 Peak Elev=18.56' Storage=54 cf Inflow=0.25 cfs 772 cf
12.0" Round Culvert n=0.012 L=114.0' S=0.0030 '/' Outflow=0.25 cfs 722 cf

Pond CBA3: CBA3 Peak Elev=18.38' Storage=55 cf Inflow=0.43 cfs 1,261 cf
12.0" Round Culvert n=0.012 L=219.0' S=0.0046 '/' Outflow=0.43 cfs 1,210 cf

Pond CBB2: CBB2 Peak Elev=19.53' Storage=55 cf Inflow=0.94 cfs 2,968 cf
12.0" Round Culvert n=0.009 L=112.7' S=0.0076 '/' Outflow=0.94 cfs 2,919 cf

Pond CBC1: CBC1 Peak Elev=19.25' Inflow=0.91 cfs 4,764 cf
Primary=0.91 cfs 4,764 cf Secondary=0.00 cfs 0 cf Outflow=0.91 cfs 4,764 cf

Pond CBD2: CBD2 Peak Elev=18.18' Storage=53 cf Inflow=1.17 cfs 10,682 cf
12.0" Round Culvert n=0.009 L=123.0' S=0.0051 '/' Outflow=1.17 cfs 10,636 cf

Pond CBE1: CBE1 Peak Elev=17.57' Inflow=0.01 cfs 36 cf
12.0" Round Culvert n=0.012 L=10.0' S=0.0130 '/' Outflow=0.01 cfs 36 cf

Pond DMHD2: DMH D2 Peak Elev=18.50' Inflow=1.74 cfs 7,683 cf
Outflow=1.74 cfs 7,683 cf

Pond DMHD6: Peak Elev=17.62' Inflow=1.33 cfs 11,846 cf
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=1.33 cfs 11,846 cf

Pond DMHD8: Peak Elev=17.63' Inflow=1.33 cfs 11,882 cf
12.0" Round Culvert n=0.011 L=16.0' S=0.0000 '/' Outflow=1.33 cfs 11,882 cf

Pond PR2P: Offsite Isolated Wetland Peak Elev=20.19' Storage=1,475 cf Inflow=1.65 cfs 8,703 cf
Discarded=0.51 cfs 8,670 cf Primary=0.00 cfs 0 cf Outflow=0.51 cfs 8,670 cf

Pond S1: Infiltration System S1 (Stormtech Peak Elev=20.65' Storage=459 cf Inflow=0.11 cfs 3,166 cf
Discarded=0.07 cfs 3,162 cf Primary=0.00 cfs 0 cf Outflow=0.07 cfs 3,162 cf

Pond S2: CBD1 & System S3 Peak Elev=18.43' Storage=2,387 cf Inflow=2.45 cfs 10,454 cf
12.0" Round Culvert n=0.012 L=92.8' S=0.0034 '/' Outflow=1.08 cfs 9,867 cf

Summary for Subcatchment PR2: Overland Flow Northeast

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
2,975	39	>75% Grass cover, Good, HSG A
2,975		100.00% Pervious Area

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

Summary for Subcatchment PR2O: Offsite Flow to Isolated Pocket Wetland (From Peabody GIS)

Runoff = 1.65 cfs @ 12.13 hrs, Volume= 8,703 cf, Depth> 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
259,227	61	1/4 acre lots, 38% imp, HSG A
160,721		62.00% Pervious Area
98,506		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0638	2.19		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
0.9	229	0.0638	4.07		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
4.3					**Direct Entry, 1/10 Hour Minimum**
6.0	329	Total			

Summary for Subcatchment PRA1:

Runoff = 0.25 cfs @ 12.08 hrs, Volume= 772 cf, Depth> 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
5,239	98	Paved parking, HSG A
2,894	39	>75% Grass cover, Good, HSG A
8,133	77	Weighted Average
2,894		35.58% Pervious Area
5,239		64.42% Impervious Area

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

Summary for Subcatchment PRA3:

Runoff = 0.18 cfs @ 12.08 hrs, Volume= 539 cf, Depth> 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
	2,838	98	Paved parking, HSG A
	1,999	39	>75% Grass cover, Good, HSG A
*	842	98	Walks
	5,679	77	Weighted Average
	1,999		35.20% Pervious Area
	3,680		64.80% Impervious Area

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

Summary for Subcatchment PRB2:

Runoff = 0.50 cfs @ 12.07 hrs, Volume= 1,516 cf, Depth> 2.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
7,591	98	Paved parking, HSG A
1,177	39	>75% Grass cover, Good, HSG A
8,768	90	Weighted Average
1,177		13.42% Pervious Area
7,591		86.58% Impervious Area

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

Summary for Subcatchment PRC1O: Offsite Flow to CBC1

Runoff = 0.91 cfs @ 12.13 hrs, Volume= 4,764 cf, Depth> 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
141,885	61	1/4 acre lots, 38% imp, HSG A
87,969		62.00% Pervious Area
53,916		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0462	1.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.4	354	0.0462	4.36		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.7					**Direct Entry, 1/10 Hour Minumum**
6.0	454	Total			

Summary for Subcatchment PRD1:

Runoff = 0.51 cfs @ 12.08 hrs, Volume= 1,535 cf, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
9,127	98	Paved parking, HSG A
3,515	39	>75% Grass cover, Good, HSG A
12,642	82	Weighted Average
3,515		27.80% Pervious Area
9,127		72.20% Impervious Area

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

Summary for Subcatchment PRD1O: Offsite Flow to CBD1

Runoff = 0.24 cfs @ 12.13 hrs, Volume= 1,237 cf, Depth> 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
36,850	61	1/4 acre lots, 38% imp, HSG A
22,847		62.00% Pervious Area
14,003		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.62		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
5.0					**Direct Entry, 1/10 Hour Minumum**
6.0	100	Total			

Summary for Subcatchment PRD2:

Runoff = 0.21 cfs @ 12.08 hrs, Volume= 631 cf, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
	3,501	98	Paved parking, HSG A
	1,967	39	>75% Grass cover, Good, HSG A
*	541	98	Walks
	6,009	79	Weighted Average
	1,967		32.73% Pervious Area
	4,042		67.27% Impervious Area

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

Summary for Subcatchment PRD2O: Offsite Flow to CBD2

Runoff = 0.04 cfs @ 12.13 hrs, Volume= 184 cf, Depth> 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
5,490	61	1/4 acre lots, 38% imp, HSG A
3,404		62.00% Pervious Area
2,086		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.62		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
5.0					**Direct Entry, 1/10 Hour Minumum**
6.0	100	Total			

Summary for Subcatchment PRE1:

Runoff = 0.01 cfs @ 12.12 hrs, Volume= 36 cf, Depth> 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
	134	98	Paved parking, HSG A
	758	39	>75% Grass cover, Good, HSG A
*	281	98	Walks
	1,173	60	Weighted Average
	758		64.62% Pervious Area
	415		35.38% Impervious Area

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

Summary for Subcatchment PRF1: Buidling 1

Runoff = 1.33 cfs @ 12.07 hrs, Volume= 4,450 cf, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
18,632	98	Roofs, HSG A
18,632		100.00% Impervious Area

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

Summary for Subcatchment PRF2: Building 2

Runoff = 0.22 cfs @ 12.07 hrs, Volume= 726 cf, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
3,040	98	Roofs, HSG A
3,040		100.00% Impervious Area

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

Summary for Subcatchment PRF3: Building 3

Runoff = 0.22 cfs @ 12.07 hrs, Volume= 726 cf, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
3,040	98	Roofs, HSG A
3,040		100.00% Impervious Area

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

Summary for Reach DP1: Municipal System

Inflow Area = 251,341 sf, 49.66% Impervious, Inflow Depth > 0.57" for 2-year event
Inflow = 1.33 cfs @ 12.36 hrs, Volume= 11,882 cf
Outflow = 1.33 cfs @ 12.36 hrs, Volume= 11,882 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach DP2: Abutting Properties

Inflow Area = 262,202 sf, 37.57% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: DMH C6

Inflow Area = 251,341 sf, 49.66% Impervious, Inflow Depth > 0.57" for 2-year event
Inflow = 1.33 cfs @ 12.36 hrs, Volume= 11,882 cf
Outflow = 1.33 cfs @ 12.36 hrs, Volume= 11,882 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.33 cfs @ 12.36 hrs, Volume= 11,882 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 17.74' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.80'	**12.0" Round Culvert** L= 112.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.80' / 16.70' S= 0.0009 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.33 cfs @ 12.36 hrs HW=17.74' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 1.33 cfs @ 2.25 fps)

Summary for Pond BR1: Blue Roof

Inflow Area = 18,632 sf,100.00% Impervious, Inflow Depth > 2.87" for 2-year event
Inflow = 1.33 cfs @ 12.07 hrs, Volume= 4,450 cf
Outflow = 0.11 cfs @ 12.97 hrs, Volume= 3,166 cf, Atten= 92%, Lag= 53.9 min
Primary = 0.11 cfs @ 12.97 hrs, Volume= 3,166 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 77.15' @ 12.97 hrs Surf.Area= 18,000 sf Storage= 2,722 cf

Plug-Flow detention time= 324.5 min calculated for 3,165 cf (71% of inflow)
Center-of-Mass det. time= 233.0 min (988.7 - 755.7)

Volume	Invert	Avail.Storage	Storage Description
#1	77.00'	9,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
77.00	18,000	0	0
77.50	18,000	9,000	9,000

Device	Routing	Invert	Outlet Devices
#1	Primary	77.00'	**2.0" Vert. Orifice/Grate X 4.00** C= 0.600

Primary OutFlow Max=0.11 cfs @ 12.97 hrs HW=77.15' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.11 cfs @ 1.32 fps)

Summary for Pond CBA1: CBA1

Inflow Area = 8,133 sf, 64.42% Impervious, Inflow Depth > 1.14" for 2-year event
Inflow = 0.25 cfs @ 12.08 hrs, Volume= 772 cf
Outflow = 0.25 cfs @ 12.08 hrs, Volume= 722 cf, Atten= 0%, Lag= 0.1 min
Primary = 0.25 cfs @ 12.08 hrs, Volume= 722 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.56' @ 12.08 hrs Surf.Area= 13 sf Storage= 54 cf

Plug-Flow detention time= 45.7 min calculated for 721 cf (93% of inflow)
Center-of-Mass det. time= 11.9 min (864.4 - 852.6)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	960 cf	**Custom Stage Data (Prismatic)** Listed below
#2	14.25'	85 cf	**4.00'D x 6.75'H Vertical Cone/Cylinder**
		1,045 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	8	0	0
21.50	1,502	378	378
21.75	3,158	583	960

Device	Routing	Invert	Outlet Devices
#1	Primary	18.25'	**12.0" Round Culvert** L= 114.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.25' / 17.91' S= 0.0030 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.25 cfs @ 12.08 hrs HW=18.56' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.25 cfs @ 1.77 fps)

Summary for Pond CBA3: CBA3

Inflow Area = 13,812 sf, 64.57% Impervious, Inflow Depth > 1.10" for 2-year event
Inflow = 0.43 cfs @ 12.08 hrs, Volume= 1,261 cf
Outflow = 0.43 cfs @ 12.08 hrs, Volume= 1,210 cf, Atten= 0%, Lag= 0.1 min
Primary = 0.43 cfs @ 12.08 hrs, Volume= 1,210 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.38' @ 12.08 hrs Surf.Area= 13 sf Storage= 55 cf

Plug-Flow detention time= 28.7 min calculated for 1,210 cf (96% of inflow)
Center-of-Mass det. time= 7.1 min (866.5 - 859.4)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	1,001 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	14.01'	75 cf	**4.00'D x 6.00'H Vertical Cone/Cylinder**
		1,077 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	4	0	0
21.50	1,600	401	401
21.75	3,202	600	1,001

Device	Routing	Invert	Outlet Devices
#1	Primary	18.01'	**12.0" Round Culvert** L= 219.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.01' / 17.00' S= 0.0046 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.42 cfs @ 12.08 hrs HW=18.38' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.42 cfs @ 2.38 fps)

Summary for Pond CBB2: CBB2

Inflow Area = 14,848 sf, 92.07% Impervious, Inflow Depth > 2.40" for 2-year event
Inflow = 0.94 cfs @ 12.07 hrs, Volume= 2,968 cf
Outflow = 0.94 cfs @ 12.07 hrs, Volume= 2,919 cf, Atten= 0%, Lag= 0.1 min
Primary = 0.94 cfs @ 12.07 hrs, Volume= 2,919 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 19.53' @ 12.07 hrs Surf.Area= 13 sf Storage= 55 cf

Plug-Flow detention time= 18.8 min calculated for 2,918 cf (98% of inflow)
Center-of-Mass det. time= 8.6 min (790.3 - 781.7)

Volume	Invert	Avail.Storage	Storage Description
#1	22.15'	1,128 cf	**Custom Stage Data (Prismatic)** Listed below
#2	15.15'	88 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder**
		1,216 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.15	8	0	0
22.70	4,094	1,128	1,128

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**12.0" Round Culvert** L= 112.7' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 19.00' / 18.14' S= 0.0076 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=0.94 cfs @ 12.07 hrs HW=19.53' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.94 cfs @ 2.19 fps)

Summary for Pond CBC1: CBC1

Inflow Area = 141,885 sf, 38.00% Impervious, Inflow Depth > 0.40" for 2-year event
Inflow = 0.91 cfs @ 12.13 hrs, Volume= 4,764 cf
Outflow = 0.91 cfs @ 12.13 hrs, Volume= 4,764 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.91 cfs @ 12.13 hrs, Volume= 4,764 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 19.25' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.76'	**12.0" Round Culvert** L= 94.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.76' / 18.14' S= 0.0065 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Secondary	22.30'	**10.0' long x 2.5' 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 Coef. (English) 2.48 2.60 2.60 2.60 2.64 2.65 2.68 2.75 2.74 2.76 2.89 3.05 3.19 3.32

Primary OutFlow Max=0.90 cfs @ 12.13 hrs HW=19.25' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.90 cfs @ 2.38 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.76' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CBD2: CBD2

Inflow Area = 217,724 sf, 44.48% Impervious, Inflow Depth > 0.59" for 2-year event
Inflow = 1.17 cfs @ 12.41 hrs, Volume= 10,682 cf
Outflow = 1.17 cfs @ 12.41 hrs, Volume= 10,636 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.17 cfs @ 12.41 hrs, Volume= 10,636 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.18' @ 12.41 hrs Surf.Area= 13 sf Storage= 53 cf

Plug-Flow detention time= 3.8 min calculated for 10,631 cf (100% of inflow)
Center-of-Mass det. time= 1.5 min (910.5 - 909.1)

Volume	Invert	Avail.Storage	Storage Description
#1	20.80'	1,721 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	13.95'	86 cf	**4.00'D x 6.85'H Vertical Cone/Cylinder**
		1,807 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.80	4	0	0
21.00	443	45	45
21.50	2,755	800	844
21.75	4,262	877	1,721

Device	Routing	Invert	Outlet Devices
#1	Primary	17.53'	**12.0" Round Culvert** L= 123.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.53' / 16.90' S= 0.0051 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=1.17 cfs @ 12.41 hrs HW=18.18' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.17 cfs @ 2.16 fps)

Summary for Pond CBE1: CBE1

Inflow Area = 1,173 sf, 35.38% Impervious, Inflow Depth > 0.37" for 2-year event
Inflow = 0.01 cfs @ 12.12 hrs, Volume= 36 cf
Outflow = 0.01 cfs @ 12.12 hrs, Volume= 36 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.01 cfs @ 12.12 hrs, Volume= 36 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 17.57' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.53'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.53' / 17.40' S= 0.0130 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.01 cfs @ 12.12 hrs HW=17.57' (Free Discharge)
└─**1=Culvert** (Inlet Controls 0.01 cfs @ 0.55 fps)

Summary for Pond DMHD2: DMH D2

Inflow Area = 156,733 sf, 43.12% Impervious, Inflow Depth > 0.59" for 2-year event
Inflow = 1.74 cfs @ 12.10 hrs, Volume= 7,683 cf
Outflow = 1.74 cfs @ 12.10 hrs, Volume= 7,683 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.74 cfs @ 12.10 hrs, Volume= 7,683 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.50' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.86'	**12.0" Round Culvert to S3** L= 2.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.86' / 17.76' S= 0.0500 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Primary	18.14'	**12.0" Round Culvert to D3** L= 76.4' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.14' / 17.76' S= 0.0050 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=1.73 cfs @ 12.10 hrs HW=18.50' (Free Discharge)
├─**1=Culvert to S3** (Barrel Controls 1.24 cfs @ 3.31 fps)
└─**2=Culvert to D3** (Barrel Controls 0.50 cfs @ 2.89 fps)

Summary for Pond DMHD6:

Inflow Area = 250,168 sf, 49.73% Impervious, Inflow Depth > 0.57" for 2-year event
Inflow = 1.33 cfs @ 12.36 hrs, Volume= 11,846 cf
Outflow = 1.33 cfs @ 12.36 hrs, Volume= 11,846 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.33 cfs @ 12.36 hrs, Volume= 11,846 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 17.62' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	**12.0" Round Culvert** L= 10.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 16.90' / 16.80' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.33 cfs @ 12.36 hrs HW=17.62' (Free Discharge)
└─**1=Culvert** (Barrel Controls 1.33 cfs @ 3.07 fps)

Summary for Pond DMHD8:

Inflow Area = 251,341 sf, 49.66% Impervious, Inflow Depth > 0.57" for 2-year event
Inflow = 1.33 cfs @ 12.36 hrs, Volume= 11,882 cf
Outflow = 1.33 cfs @ 12.36 hrs, Volume= 11,882 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.33 cfs @ 12.36 hrs, Volume= 11,882 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 17.63' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.80'	**12.0" Round Culvert** L= 16.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 16.80' / 16.80' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.33 cfs @ 12.36 hrs HW=17.63' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 1.33 cfs @ 2.58 fps)

Summary for Pond PR2P: Offsite Isolated Wetland

Inflow Area = 262,202 sf, 37.57% Impervious, Inflow Depth > 0.40" for 2-year event
Inflow = 1.65 cfs @ 12.13 hrs, Volume= 8,703 cf
Outflow = 0.51 cfs @ 12.66 hrs, Volume= 8,670 cf, Atten= 69%, Lag= 31.8 min
Discarded = 0.51 cfs @ 12.66 hrs, Volume= 8,670 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.19' @ 12.66 hrs Surf.Area= 9,083 sf Storage= 1,475 cf

Plug-Flow detention time= 23.1 min calculated for 8,666 cf (100% of inflow)
Center-of-Mass det. time= 21.1 min (938.9 - 917.8)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	61,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.00	6,704	0	0
21.00	19,440	13,072	13,072
22.00	24,701	22,071	35,143
23.00	27,462	26,082	61,224

Device	Routing	Invert	Outlet Devices
#1	Primary	22.96'	**24.0' long x 15.0' 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
#2	Discarded	20.00'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.51 cfs @ 12.66 hrs HW=20.19' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.51 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=20.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond S1: Infiltration System S1 (Stormtech SC-310 Chambers)

Inflow Area = 18,632 sf,100.00% Impervious, Inflow Depth > 2.04" for 2-year event
Inflow = 0.11 cfs @ 12.97 hrs, Volume= 3,166 cf
Outflow = 0.07 cfs @ 12.15 hrs, Volume= 3,162 cf, Atten= 34%, Lag= 0.0 min
Discarded = 0.07 cfs @ 12.15 hrs, Volume= 3,162 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.65' @ 17.50 hrs Surf.Area= 1,293 sf Storage= 459 cf

Plug-Flow detention time= 62.7 min calculated for 3,162 cf (100% of inflow)
Center-of-Mass det. time= 62.1 min (1,050.8 - 988.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	19.87'	693 cf	**28.17'W x 45.92'L x 2.33'H Field A** 3,018 cf Overall - 708 cf Embedded = 2,310 cf x 30.0% Voids
#2A	20.37'	708 cf	**ADS_StormTech SC-310 +Cap** x 48 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 8 Rows
		1,401 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	21.37'	**12.0" Round Culvert** L= 17.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 21.37' / 16.90' S= 0.2629 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Discarded	19.87'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 12.15 hrs HW=19.90' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.87' (Free Discharge)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond S2: CBD1 & System S3

Inflow Area = 206,225 sf, 43.99% Impervious, Inflow Depth > 0.61" for 2-year event
Inflow = 2.45 cfs @ 12.10 hrs, Volume= 10,454 cf
Outflow = 1.08 cfs @ 12.44 hrs, Volume= 9,867 cf, Atten= 56%, Lag= 20.2 min
Primary = 1.08 cfs @ 12.44 hrs, Volume= 9,867 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.43' @ 12.44 hrs Surf.Area= 5,464 sf Storage= 2,387 cf

Plug-Flow detention time= 72.1 min calculated for 9,867 cf (94% of inflow)
Center-of-Mass det. time= 42.7 min (912.9 - 870.2)

Volume	Invert	Avail.Storage	Storage Description
#1	20.83'	26,713 cf	**Custom Stage Data (Prismatic)** Listed below
#2	14.00'	86 cf	**4.00'D x 6.83'H Vertical Cone/Cylinder**
#3	17.76'	6,385 cf	**14.13'W x 6.89'L x 1.83'H Stormtrap (14") (Prismatoid)** x 56 9,977 cf Overall x 64.0% Voids
		33,185 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.83	8	0	0
21.00	531	46	46
21.50	3,886	1,104	1,150
21.75	5,942	1,229	2,379
22.00	36,605	5,318	7,697
22.50	39,461	19,017	26,713

Device	Routing	Invert	Outlet Devices
#1	Primary	17.76'	**12.0" Round Culvert** L= 92.8' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 17.76' / 17.44' S= 0.0034 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.08 cfs @ 12.44 hrs HW=18.43' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 1.08 cfs @ 2.74 fps)

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR2: Overland Flow Northeast Runoff Area=2,975 sf 0.00% Impervious Runoff Depth>0.12"
Tc=5.0 min CN=39 Runoff=0.00 cfs 29 cf

SubcatchmentPR2O: Offsite Flow to Runoff Area=259,227 sf 38.00% Impervious Runoff Depth>1.11"
Flow Length=329' Slope=0.0638 '/' Tc=6.0 min CN=61 Runoff=6.77 cfs 23,878 cf

SubcatchmentPRA1: Runoff Area=8,133 sf 64.42% Impervious Runoff Depth>2.25"
Tc=5.0 min CN=77 Runoff=0.51 cfs 1,524 cf

SubcatchmentPRA3: Runoff Area=5,679 sf 64.80% Impervious Runoff Depth>2.25"
Tc=5.0 min CN=77 Runoff=0.36 cfs 1,064 cf

SubcatchmentPRB2: Runoff Area=8,768 sf 86.58% Impervious Runoff Depth>3.44"
Tc=5.0 min CN=90 Runoff=0.82 cfs 2,514 cf

SubcatchmentPRC1O: Offsite Flow to Runoff Area=141,885 sf 38.00% Impervious Runoff Depth>1.11"
Flow Length=454' Slope=0.0462 '/' Tc=6.0 min CN=61 Runoff=3.71 cfs 13,069 cf

SubcatchmentPRD1: Runoff Area=12,642 sf 72.20% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=82 Runoff=0.94 cfs 2,821 cf

SubcatchmentPRD1O: Offsite Flow to Runoff Area=36,850 sf 38.00% Impervious Runoff Depth>1.11"
Flow Length=100' Slope=0.0300 '/' Tc=6.0 min CN=61 Runoff=0.96 cfs 3,394 cf

SubcatchmentPRD2: Runoff Area=6,009 sf 67.27% Impervious Runoff Depth>2.42"
Tc=5.0 min CN=79 Runoff=0.41 cfs 1,210 cf

SubcatchmentPRD2O: Offsite Flow to Runoff Area=5,490 sf 38.00% Impervious Runoff Depth>1.11"
Flow Length=100' Slope=0.0300 '/' Tc=6.0 min CN=61 Runoff=0.14 cfs 506 cf

SubcatchmentPRE1: Runoff Area=1,173 sf 35.38% Impervious Runoff Depth>1.05"
Tc=5.0 min CN=60 Runoff=0.03 cfs 102 cf

SubcatchmentPRF1: Buidling 1 Runoff Area=18,632 sf 100.00% Impervious Runoff Depth>4.31"
Tc=5.0 min CN=98 Runoff=1.97 cfs 6,694 cf

SubcatchmentPRF2: Building 2 Runoff Area=3,040 sf 100.00% Impervious Runoff Depth>4.31"
Tc=5.0 min CN=98 Runoff=0.32 cfs 1,092 cf

SubcatchmentPRF3: Building 3 Runoff Area=3,040 sf 100.00% Impervious Runoff Depth>4.31"
Tc=5.0 min CN=98 Runoff=0.32 cfs 1,092 cf

Reach DP1: Municipal System Inflow=3.63 cfs 28,067 cf
Outflow=3.63 cfs 28,067 cf

Reach DP2: Abutting Properties Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Pond 1P: DMH C6 Peak Elev=19.32' Inflow=3.63 cfs 28,067 cf
12.0" Round Culvert n=0.012 L=112.0' S=0.0009 '/' Outflow=3.63 cfs 28,067 cf

Pond BR1: Blue Roof Peak Elev=77.22' Storage=4,024 cf Inflow=1.97 cfs 6,694 cf
Outflow=0.16 cfs 5,057 cf

Pond CBA1: CBA1 Peak Elev=18.70' Storage=56 cf Inflow=0.51 cfs 1,524 cf
12.0" Round Culvert n=0.012 L=114.0' S=0.0030 '/' Outflow=0.51 cfs 1,473 cf

Pond CBA3: CBA3 Peak Elev=18.55' Storage=57 cf Inflow=0.87 cfs 2,538 cf
12.0" Round Culvert n=0.012 L=219.0' S=0.0046 '/' Outflow=0.87 cfs 2,487 cf

Pond CBB2: CBB2 Peak Elev=19.70' Storage=57 cf Inflow=1.46 cfs 4,699 cf
12.0" Round Culvert n=0.009 L=112.7' S=0.0076 '/' Outflow=1.46 cfs 4,650 cf

Pond CBC1: CBC1 Peak Elev=20.22' Inflow=3.71 cfs 13,069 cf
Primary=3.71 cfs 13,069 cf Secondary=0.00 cfs 0 cf Outflow=3.71 cfs 13,069 cf

Pond CBD2: CBD2 Peak Elev=19.08' Storage=64 cf Inflow=3.06 cfs 24,859 cf
12.0" Round Culvert n=0.009 L=123.0' S=0.0051 '/' Outflow=3.06 cfs 24,811 cf

Pond CBE1: CBE1 Peak Elev=17.62' Inflow=0.03 cfs 102 cf
12.0" Round Culvert n=0.012 L=10.0' S=0.0130 '/' Outflow=0.03 cfs 102 cf

Pond DMHD2: DMH D2 Peak Elev=19.01' Inflow=5.10 cfs 17,719 cf
Outflow=5.10 cfs 17,719 cf

Pond DMHD6: Peak Elev=18.57' Inflow=3.60 cfs 27,965 cf
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=3.60 cfs 27,965 cf

Pond DMHD8: Peak Elev=18.48' Inflow=3.63 cfs 28,067 cf
12.0" Round Culvert n=0.011 L=16.0' S=0.0000 '/' Outflow=3.63 cfs 28,067 cf

Pond PR2P: Offsite Isolated Wetland Peak Elev=20.71' Storage=8,005 cf Inflow=6.77 cfs 23,907 cf
Discarded=0.88 cfs 23,837 cf Primary=0.00 cfs 0 cf Outflow=0.88 cfs 23,837 cf

Pond S1: Infiltration System S1 (Stormtech Peak Elev=21.49' Storage=1,113 cf Inflow=0.16 cfs 5,057 cf
Discarded=0.07 cfs 3,451 cf Primary=0.06 cfs 667 cf Outflow=0.13 cfs 4,118 cf

Pond S2: CBD1 & System S3 Peak Elev=19.30' Storage=5,428 cf Inflow=6.97 cfs 23,934 cf
12.0" Round Culvert n=0.012 L=92.8' S=0.0034 '/' Outflow=2.85 cfs 23,143 cf

Summary for Subcatchment PR2: Overland Flow Northeast

Runoff = 0.00 cfs @ 14.64 hrs, Volume= 29 cf, Depth> 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
2,975	39	>75% Grass cover, Good, HSG A
2,975		100.00% Pervious Area

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

Summary for Subcatchment PR2O: Offsite Flow to Isolated Pocket Wetland (From Peabody GIS)

Runoff = 6.77 cfs @ 12.10 hrs, Volume= 23,878 cf, Depth> 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
259,227	61	1/4 acre lots, 38% imp, HSG A
160,721		62.00% Pervious Area
98,506		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0638	2.19		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
0.9	229	0.0638	4.07		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
4.3					**Direct Entry, 1/10 Hour Minimum**
6.0	329	Total			

Summary for Subcatchment PRA1:

Runoff = 0.51 cfs @ 12.08 hrs, Volume= 1,524 cf, Depth> 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
5,239	98	Paved parking, HSG A
2,894	39	>75% Grass cover, Good, HSG A
8,133	77	Weighted Average
2,894		35.58% Pervious Area
5,239		64.42% Impervious Area

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

Summary for Subcatchment PRA3:

Runoff = 0.36 cfs @ 12.08 hrs, Volume= 1,064 cf, Depth> 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

	Area (sf)	CN	Description
	2,838	98	Paved parking, HSG A
	1,999	39	>75% Grass cover, Good, HSG A
*	842	98	Walks
	5,679	77	Weighted Average
	1,999		35.20% Pervious Area
	3,680		64.80% Impervious Area

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

Summary for Subcatchment PRB2:

Runoff = 0.82 cfs @ 12.07 hrs, Volume= 2,514 cf, Depth> 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
7,591	98	Paved parking, HSG A
1,177	39	>75% Grass cover, Good, HSG A
8,768	90	Weighted Average
1,177		13.42% Pervious Area
7,591		86.58% Impervious Area

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

Summary for Subcatchment PRC1O: Offsite Flow to CBC1

Runoff = 3.71 cfs @ 12.10 hrs, Volume= 13,069 cf, Depth> 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
141,885	61	1/4 acre lots, 38% imp, HSG A
87,969		62.00% Pervious Area
53,916		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0462	1.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.4	354	0.0462	4.36		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.7					**Direct Entry, 1/10 Hour Minumum**
6.0	454	Total			

Summary for Subcatchment PRD1:

Runoff = 0.94 cfs @ 12.07 hrs, Volume= 2,821 cf, Depth> 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
9,127	98	Paved parking, HSG A
3,515	39	>75% Grass cover, Good, HSG A
12,642	82	Weighted Average
3,515		27.80% Pervious Area
9,127		72.20% Impervious Area

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

Summary for Subcatchment PRD1O: Offsite Flow to CBD1

Runoff = 0.96 cfs @ 12.10 hrs, Volume= 3,394 cf, Depth> 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
36,850	61	1/4 acre lots, 38% imp, HSG A
22,847		62.00% Pervious Area
14,003		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.62		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
5.0					**Direct Entry, 1/10 Hour Minumum**
6.0	100	Total			

Summary for Subcatchment PRD2:

Runoff = 0.41 cfs @ 12.08 hrs, Volume= 1,210 cf, Depth> 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

	Area (sf)	CN	Description
	3,501	98	Paved parking, HSG A
	1,967	39	>75% Grass cover, Good, HSG A
*	541	98	Walks
	6,009	79	Weighted Average
	1,967		32.73% Pervious Area
	4,042		67.27% Impervious Area

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

Summary for Subcatchment PRD2O: Offsite Flow to CBD2

Runoff = 0.14 cfs @ 12.10 hrs, Volume= 506 cf, Depth> 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
5,490	61	1/4 acre lots, 38% imp, HSG A
3,404		62.00% Pervious Area
2,086		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.62		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
5.0					**Direct Entry, 1/10 Hour Minumum**
6.0	100	Total			

Summary for Subcatchment PRE1:

Runoff = 0.03 cfs @ 12.09 hrs, Volume= 102 cf, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

	Area (sf)	CN	Description
	134	98	Paved parking, HSG A
	758	39	>75% Grass cover, Good, HSG A
*	281	98	Walks
	1,173	60	Weighted Average
	758		64.62% Pervious Area
	415		35.38% Impervious Area

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

Summary for Subcatchment PRF1: Buidling 1

Runoff = 1.97 cfs @ 12.07 hrs, Volume= 6,694 cf, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
18,632	98	Roofs, HSG A
18,632		100.00% Impervious Area

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

Summary for Subcatchment PRF2: Building 2

Runoff = 0.32 cfs @ 12.07 hrs, Volume= 1,092 cf, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
3,040	98	Roofs, HSG A
3,040		100.00% Impervious Area

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

Summary for Subcatchment PRF3: Building 3

Runoff = 0.32 cfs @ 12.07 hrs, Volume= 1,092 cf, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.55"

Area (sf)	CN	Description
3,040	98	Roofs, HSG A
3,040		100.00% Impervious Area

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

Summary for Reach DP1: Municipal System

Inflow Area = 251,341 sf, 49.66% Impervious, Inflow Depth > 1.34" for 10-year event
Inflow = 3.63 cfs @ 12.13 hrs, Volume= 28,067 cf
Outflow = 3.63 cfs @ 12.13 hrs, Volume= 28,067 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach DP2: Abutting Properties

Inflow Area = 262,202 sf, 37.57% Impervious, Inflow Depth = 0.00" for 10-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: DMH C6

Inflow Area = 251,341 sf, 49.66% Impervious, Inflow Depth > 1.34" for 10-year event
Inflow = 3.63 cfs @ 12.13 hrs, Volume= 28,067 cf
Outflow = 3.63 cfs @ 12.13 hrs, Volume= 28,067 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.63 cfs @ 12.13 hrs, Volume= 28,067 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 19.32' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.80'	**12.0" Round Culvert** L= 112.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.80' / 16.70' S= 0.0009 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.63 cfs @ 12.13 hrs HW=19.32' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 3.63 cfs @ 4.62 fps)

Summary for Pond BR1: Blue Roof

Inflow Area = 18,632 sf,100.00% Impervious, Inflow Depth > 4.31" for 10-year event
Inflow = 1.97 cfs @ 12.07 hrs, Volume= 6,694 cf
Outflow = 0.16 cfs @ 13.00 hrs, Volume= 5,057 cf, Atten= 92%, Lag= 55.6 min
Primary = 0.16 cfs @ 13.00 hrs, Volume= 5,057 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 77.22' @ 13.00 hrs Surf.Area= 18,000 sf Storage= 4,024 cf

Plug-Flow detention time= 325.1 min calculated for 5,057 cf (76% of inflow)
Center-of-Mass det. time= 239.6 min (987.9 - 748.2)

Volume	Invert	Avail.Storage	Storage Description
#1	77.00'	9,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
77.00	18,000	0	0
77.50	18,000	9,000	9,000

Device	Routing	Invert	Outlet Devices
#1	Primary	77.00'	**2.0" Vert. Orifice/Grate X 4.00** C= 0.600

Primary OutFlow Max=0.16 cfs @ 13.00 hrs HW=77.22' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.16 cfs @ 1.80 fps)

Summary for Pond CBA1: CBA1

Inflow Area = 8,133 sf, 64.42% Impervious, Inflow Depth > 2.25" for 10-year event
Inflow = 0.51 cfs @ 12.08 hrs, Volume= 1,524 cf
Outflow = 0.51 cfs @ 12.08 hrs, Volume= 1,473 cf, Atten= 0%, Lag= 0.1 min
Primary = 0.51 cfs @ 12.08 hrs, Volume= 1,473 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.70' @ 12.08 hrs Surf.Area= 13 sf Storage= 56 cf

Plug-Flow detention time= 26.3 min calculated for 1,473 cf (97% of inflow)
Center-of-Mass det. time= 7.6 min (840.2 - 832.6)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	960 cf	**Custom Stage Data (Prismatic)** Listed below
#2	14.25'	85 cf	**4.00'D x 6.75'H Vertical Cone/Cylinder**
		1,045 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	8	0	0
21.50	1,502	378	378
21.75	3,158	583	960

Device	Routing	Invert	Outlet Devices
#1	Primary	18.25'	**12.0" Round Culvert** L= 114.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.25' / 17.91' S= 0.0030 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.51 cfs @ 12.08 hrs HW=18.70' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.51 cfs @ 2.15 fps)

Summary for Pond CBA3: CBA3

Inflow Area = 13,812 sf, 64.57% Impervious, Inflow Depth > 2.20" for 10-year event
Inflow = 0.87 cfs @ 12.08 hrs, Volume= 2,538 cf
Outflow = 0.87 cfs @ 12.08 hrs, Volume= 2,487 cf, Atten= 0%, Lag= 0.1 min
Primary = 0.87 cfs @ 12.08 hrs, Volume= 2,487 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.55' @ 12.08 hrs Surf.Area= 13 sf Storage= 57 cf

Plug-Flow detention time= 15.9 min calculated for 2,487 cf (98% of inflow)
Center-of-Mass det. time= 4.4 min (841.4 - 837.0)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	1,001 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	14.01'	75 cf	**4.00'D x 6.00'H Vertical Cone/Cylinder**
		1,077 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	4	0	0
21.50	1,600	401	401
21.75	3,202	600	1,001

Device	Routing	Invert	Outlet Devices
#1	Primary	18.01'	**12.0" Round Culvert** L= 219.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.01' / 17.00' S= 0.0046 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.86 cfs @ 12.08 hrs HW=18.55' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.86 cfs @ 2.87 fps)

Summary for Pond CBB2: CBB2

Inflow Area = 14,848 sf, 92.07% Impervious, Inflow Depth > 3.80" for 10-year event
Inflow = 1.46 cfs @ 12.07 hrs, Volume= 4,699 cf
Outflow = 1.46 cfs @ 12.07 hrs, Volume= 4,650 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.46 cfs @ 12.07 hrs, Volume= 4,650 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 19.70' @ 12.07 hrs Surf.Area= 13 sf Storage= 57 cf

Plug-Flow detention time= 12.8 min calculated for 4,648 cf (99% of inflow)
Center-of-Mass det. time= 6.1 min (778.1 - 771.9)

Volume	Invert	Avail.Storage	Storage Description
#1	22.15'	1,128 cf	**Custom Stage Data (Prismatic)** Listed below
#2	15.15'	88 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder**
		1,216 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.15	8	0	0
22.70	4,094	1,128	1,128

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**12.0" Round Culvert** L= 112.7' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 19.00' / 18.14' S= 0.0076 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=1.46 cfs @ 12.07 hrs HW=19.69' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.46 cfs @ 2.50 fps)

Summary for Pond CBC1: CBC1

Inflow Area = 141,885 sf, 38.00% Impervious, Inflow Depth > 1.11" for 10-year event
Inflow = 3.71 cfs @ 12.10 hrs, Volume= 13,069 cf
Outflow = 3.71 cfs @ 12.10 hrs, Volume= 13,069 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.71 cfs @ 12.10 hrs, Volume= 13,069 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.22' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.76'	**12.0" Round Culvert** L= 94.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.76' / 18.14' S= 0.0065 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Secondary	22.30'	**10.0' long x 2.5' 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 Coef. (English) 2.48 2.60 2.60 2.60 2.64 2.65 2.68 2.75 2.74 2.76 2.89 3.05 3.19 3.32

Primary OutFlow Max=3.71 cfs @ 12.10 hrs HW=20.22' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 3.71 cfs @ 4.72 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.76' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CBD2: CBD2

Inflow Area = 217,724 sf, 44.48% Impervious, Inflow Depth > 1.37" for 10-year event
Inflow = 3.06 cfs @ 12.35 hrs, Volume= 24,859 cf
Outflow = 3.06 cfs @ 12.35 hrs, Volume= 24,811 cf, Atten= 0%, Lag= 0.1 min
Primary = 3.06 cfs @ 12.35 hrs, Volume= 24,811 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 19.08' @ 12.35 hrs Surf.Area= 13 sf Storage= 64 cf

Plug-Flow detention time= 1.8 min calculated for 24,811 cf (100% of inflow)
Center-of-Mass det. time= 0.8 min (881.7 - 880.9)

Volume	Invert	Avail.Storage	Storage Description
#1	20.80'	1,721 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	13.95'	86 cf	**4.00'D x 6.85'H Vertical Cone/Cylinder**
		1,807 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.80	4	0	0
21.00	443	45	45
21.50	2,755	800	844
21.75	4,262	877	1,721

Device	Routing	Invert	Outlet Devices
#1	Primary	17.53'	**12.0" Round Culvert** L= 123.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.53' / 16.90' S= 0.0051 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=3.06 cfs @ 12.35 hrs HW=19.08' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 3.06 cfs @ 3.90 fps)

Summary for Pond CBE1: CBE1

Inflow Area = 1,173 sf, 35.38% Impervious, Inflow Depth > 1.05" for 10-year event
Inflow = 0.03 cfs @ 12.09 hrs, Volume= 102 cf
Outflow = 0.03 cfs @ 12.09 hrs, Volume= 102 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.03 cfs @ 12.09 hrs, Volume= 102 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 17.62' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.53'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.53' / 17.40' S= 0.0130 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.03 cfs @ 12.09 hrs HW=17.62' (Free Discharge)
└─**1=Culvert** (Inlet Controls 0.03 cfs @ 0.81 fps)

Summary for Pond DMHD2: DMH D2

Inflow Area = 156,733 sf, 43.12% Impervious, Inflow Depth > 1.36" for 10-year event
Inflow = 5.10 cfs @ 12.09 hrs, Volume= 17,719 cf
Outflow = 5.10 cfs @ 12.09 hrs, Volume= 17,719 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.10 cfs @ 12.09 hrs, Volume= 17,719 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 19.01' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.86'	**12.0" Round Culvert to S3** L= 2.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.86' / 17.76' S= 0.0500 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Primary	18.14'	**12.0" Round Culvert to D3** L= 76.4' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.14' / 17.76' S= 0.0050 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=5.09 cfs @ 12.09 hrs HW=19.01' (Free Discharge)
├─**1=Culvert to S3** (Barrel Controls 2.92 cfs @ 4.05 fps)
└─**2=Culvert to D3** (Barrel Controls 2.16 cfs @ 3.97 fps)

Summary for Pond DMHD6:

Inflow Area = 250,168 sf, 49.73% Impervious, Inflow Depth > 1.34" for 10-year event
Inflow = 3.60 cfs @ 12.13 hrs, Volume= 27,965 cf
Outflow = 3.60 cfs @ 12.13 hrs, Volume= 27,965 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.60 cfs @ 12.13 hrs, Volume= 27,965 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.57' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	**12.0" Round Culvert** L= 10.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 16.90' / 16.80' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=3.60 cfs @ 12.13 hrs HW=18.57' (Free Discharge)
└─**1=Culvert** (Inlet Controls 3.60 cfs @ 4.59 fps)

Summary for Pond DMHD8:

Inflow Area = 251,341 sf, 49.66% Impervious, Inflow Depth > 1.34" for 10-year event
Inflow = 3.63 cfs @ 12.13 hrs, Volume= 28,067 cf
Outflow = 3.63 cfs @ 12.13 hrs, Volume= 28,067 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.63 cfs @ 12.13 hrs, Volume= 28,067 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.48' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.80'	**12.0" Round Culvert** L= 16.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 16.80' / 16.80' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=3.63 cfs @ 12.13 hrs HW=18.48' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 3.63 cfs @ 4.62 fps)

Summary for Pond PR2P: Offsite Isolated Wetland

Inflow Area = 262,202 sf, 37.57% Impervious, Inflow Depth > 1.09" for 10-year event
Inflow = 6.77 cfs @ 12.10 hrs, Volume= 23,907 cf
Outflow = 0.88 cfs @ 13.11 hrs, Volume= 23,837 cf, Atten= 87%, Lag= 60.4 min
Discarded = 0.88 cfs @ 13.11 hrs, Volume= 23,837 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.71' @ 13.11 hrs Surf.Area= 15,775 sf Storage= 8,005 cf

Plug-Flow detention time= 99.9 min calculated for 23,837 cf (100% of inflow)
Center-of-Mass det. time= 98.2 min (976.9 - 878.7)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	61,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.00	6,704	0	0
21.00	19,440	13,072	13,072
22.00	24,701	22,071	35,143
23.00	27,462	26,082	61,224

Device	Routing	Invert	Outlet Devices
#1	Primary	22.96'	**24.0' long x 15.0' 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
#2	Discarded	20.00'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.88 cfs @ 13.11 hrs HW=20.71' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.88 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=20.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond S1: Infiltration System S1 (Stormtech SC-310 Chambers)

Inflow Area = 18,632 sf,100.00% Impervious, Inflow Depth > 3.26" for 10-year event
Inflow = 0.16 cfs @ 13.00 hrs, Volume= 5,057 cf
Outflow = 0.13 cfs @ 16.50 hrs, Volume= 4,118 cf, Atten= 17%, Lag= 210.0 min
Discarded = 0.07 cfs @ 11.94 hrs, Volume= 3,451 cf
Primary = 0.06 cfs @ 16.50 hrs, Volume= 667 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.49' @ 16.50 hrs Surf.Area= 1,293 sf Storage= 1,113 cf

Plug-Flow detention time= 128.4 min calculated for 4,118 cf (81% of inflow)
Center-of-Mass det. time= 54.7 min (1,042.6 - 987.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	19.87'	693 cf	**28.17'W x 45.92'L x 2.33'H Field A** 3,018 cf Overall - 708 cf Embedded = 2,310 cf x 30.0% Voids
#2A	20.37'	708 cf	**ADS_StormTech SC-310 +Cap** x 48 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 8 Rows
		1,401 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	21.37'	**12.0" Round Culvert** L= 17.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 21.37' / 16.90' S= 0.2629 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Discarded	19.87'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 11.94 hrs HW=19.90' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.06 cfs @ 16.50 hrs HW=21.49' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.06 cfs @ 1.06 fps)

Summary for Pond S2: CBD1 & System S3

Inflow Area = 206,225 sf, 43.99% Impervious, Inflow Depth > 1.39" for 10-year event
Inflow = 6.97 cfs @ 12.09 hrs, Volume= 23,934 cf
Outflow = 2.85 cfs @ 12.39 hrs, Volume= 23,143 cf, Atten= 59%, Lag= 17.8 min
Primary = 2.85 cfs @ 12.39 hrs, Volume= 23,143 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 19.30' @ 12.39 hrs Surf.Area= 5,464 sf Storage= 5,428 cf

Plug-Flow detention time= 50.1 min calculated for 23,134 cf (97% of inflow)
Center-of-Mass det. time= 31.9 min (883.8 - 851.9)

Volume	Invert	Avail.Storage	Storage Description
#1	20.83'	26,713 cf	**Custom Stage Data (Prismatic)** Listed below
#2	14.00'	86 cf	**4.00'D x 6.83'H Vertical Cone/Cylinder**
#3	17.76'	6,385 cf	**14.13'W x 6.89'L x 1.83'H Stormtrap (14") (Prismatoid)** x 56 9,977 cf Overall x 64.0% Voids
		33,185 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.83	8	0	0
21.00	531	46	46
21.50	3,886	1,104	1,150
21.75	5,942	1,229	2,379
22.00	36,605	5,318	7,697
22.50	39,461	19,017	26,713

Device	Routing	Invert	Outlet Devices
#1	Primary	17.76'	**12.0" Round Culvert** L= 92.8' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 17.76' / 17.44' S= 0.0034 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.85 cfs @ 12.39 hrs HW=19.30' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 2.85 cfs @ 3.63 fps)

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR2: Overland Flow Northeast Runoff Area=2,975 sf 0.00% Impervious Runoff Depth>0.29"
Tc=5.0 min CN=39 Runoff=0.01 cfs 71 cf

SubcatchmentPR2O: Offsite Flow to Runoff Area=259,227 sf 38.00% Impervious Runoff Depth>1.61"
Flow Length=329' Slope=0.0638 '/' Tc=6.0 min CN=61 Runoff=10.49 cfs 34,840 cf

SubcatchmentPRA1: Runoff Area=8,133 sf 64.42% Impervious Runoff Depth>2.96"
Tc=5.0 min CN=77 Runoff=0.67 cfs 2,005 cf

SubcatchmentPRA3: Runoff Area=5,679 sf 64.80% Impervious Runoff Depth>2.96"
Tc=5.0 min CN=77 Runoff=0.47 cfs 1,400 cf

SubcatchmentPRB2: Runoff Area=8,768 sf 86.58% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=90 Runoff=1.00 cfs 3,112 cf

SubcatchmentPRC1O: Offsite Flow to Runoff Area=141,885 sf 38.00% Impervious Runoff Depth>1.61"
Flow Length=454' Slope=0.0462 '/' Tc=6.0 min CN=61 Runoff=5.74 cfs 19,069 cf

SubcatchmentPRD1: Runoff Area=12,642 sf 72.20% Impervious Runoff Depth>3.44"
Tc=5.0 min CN=82 Runoff=1.21 cfs 3,620 cf

SubcatchmentPRD1O: Offsite Flow to Runoff Area=36,850 sf 38.00% Impervious Runoff Depth>1.61"
Flow Length=100' Slope=0.0300 '/' Tc=6.0 min CN=61 Runoff=1.49 cfs 4,953 cf

SubcatchmentPRD2: Runoff Area=6,009 sf 67.27% Impervious Runoff Depth>3.15"
Tc=5.0 min CN=79 Runoff=0.53 cfs 1,575 cf

SubcatchmentPRD2O: Offsite Flow to Runoff Area=5,490 sf 38.00% Impervious Runoff Depth>1.61"
Flow Length=100' Slope=0.0300 '/' Tc=6.0 min CN=61 Runoff=0.22 cfs 738 cf

SubcatchmentPRE1: Runoff Area=1,173 sf 35.38% Impervious Runoff Depth>1.54"
Tc=5.0 min CN=60 Runoff=0.05 cfs 150 cf

SubcatchmentPRF1: Buidling 1 Runoff Area=18,632 sf 100.00% Impervious Runoff Depth>5.16"
Tc=5.0 min CN=98 Runoff=2.34 cfs 8,011 cf

SubcatchmentPRF2: Building 2 Runoff Area=3,040 sf 100.00% Impervious Runoff Depth>5.16"
Tc=5.0 min CN=98 Runoff=0.38 cfs 1,307 cf

SubcatchmentPRF3: Building 3 Runoff Area=3,040 sf 100.00% Impervious Runoff Depth>5.16"
Tc=5.0 min CN=98 Runoff=0.38 cfs 1,307 cf

Reach DP1: Municipal System Inflow=5.85 cfs 39,660 cf
Outflow=5.85 cfs 39,660 cf

Reach DP2: Abutting Properties Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Pond 1P: DMH C6 Peak Elev=21.92' Inflow=5.85 cfs 39,660 cf
12.0" Round Culvert n=0.012 L=112.0' S=0.0009 '/' Outflow=5.85 cfs 39,660 cf

Pond BR1: Blue Roof Peak Elev=77.27' Storage=4,789 cf Inflow=2.34 cfs 8,011 cf
Outflow=0.18 cfs 6,131 cf

Pond CBA1: CBA1 Peak Elev=18.78' Storage=57 cf Inflow=0.67 cfs 2,005 cf
12.0" Round Culvert n=0.012 L=114.0' S=0.0030 '/' Outflow=0.67 cfs 1,954 cf

Pond CBA3: CBA3 Peak Elev=18.65' Storage=58 cf Inflow=1.14 cfs 3,354 cf
12.0" Round Culvert n=0.012 L=219.0' S=0.0046 '/' Outflow=1.14 cfs 3,303 cf

Pond CBB2: CBB2 Peak Elev=19.79' Storage=58 cf Inflow=1.76 cfs 5,726 cf
12.0" Round Culvert n=0.009 L=112.7' S=0.0076 '/' Outflow=1.76 cfs 5,677 cf

Pond CBC1: CBC1 Peak Elev=21.57' Inflow=5.74 cfs 19,069 cf
Primary=5.74 cfs 19,069 cf Secondary=0.00 cfs 0 cf Outflow=5.74 cfs 19,069 cf

Pond CBD2: CBD2 Peak Elev=21.17' Storage=269 cf Inflow=5.50 cfs 34,739 cf
12.0" Round Culvert n=0.009 L=123.0' S=0.0051 '/' Outflow=5.29 cfs 34,691 cf

Pond CBE1: CBE1 Peak Elev=17.65' Inflow=0.05 cfs 150 cf
12.0" Round Culvert n=0.012 L=10.0' S=0.0130 '/' Outflow=0.05 cfs 150 cf

Pond DMHD2: DMH D2 Peak Elev=19.52' Inflow=7.44 cfs 24,747 cf
Outflow=7.44 cfs 24,747 cf

Pond DMHD6: Peak Elev=20.44' Inflow=5.82 cfs 39,509 cf
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=5.82 cfs 39,509 cf

Pond DMHD8: Peak Elev=20.38' Inflow=5.85 cfs 39,660 cf
12.0" Round Culvert n=0.011 L=16.0' S=0.0000 '/' Outflow=5.85 cfs 39,660 cf

Pond PR2P: Offsite Isolated Wetland Peak Elev=21.02' Storage=13,489 cf Inflow=10.49 cfs 34,912 cf
Discarded=1.09 cfs 34,817 cf Primary=0.00 cfs 0 cf Outflow=1.09 cfs 34,817 cf

Pond S1: Infiltration System S1 (Stormtech Peak Elev=21.53' Storage=1,130 cf Inflow=0.18 cfs 6,131 cf
Discarded=0.07 cfs 3,574 cf Primary=0.09 cfs 1,516 cf Outflow=0.16 cfs 5,090 cf

Pond S2: CBD1 & System S3 Peak Elev=21.21' Storage=6,981 cf Inflow=10.10 cfs 33,320 cf
12.0" Round Culvert n=0.012 L=92.8' S=0.0034 '/' Outflow=5.13 cfs 32,425 cf

Summary for Subcatchment PR2: Overland Flow Northeast

Runoff = 0.01 cfs @ 12.40 hrs, Volume= 71 cf, Depth> 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
2,975	39	>75% Grass cover, Good, HSG A
2,975		100.00% Pervious Area

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

Summary for Subcatchment PR2O: Offsite Flow to Isolated Pocket Wetland (From Peabody GIS)

Runoff = 10.49 cfs @ 12.10 hrs, Volume= 34,840 cf, Depth> 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
259,227	61	1/4 acre lots, 38% imp, HSG A
160,721		62.00% Pervious Area
98,506		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0638	2.19		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
0.9	229	0.0638	4.07		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
4.3					**Direct Entry, 1/10 Hour Minimum**
6.0	329	Total			

Summary for Subcatchment PRA1:

Runoff = 0.67 cfs @ 12.08 hrs, Volume= 2,005 cf, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
5,239	98	Paved parking, HSG A
2,894	39	>75% Grass cover, Good, HSG A
8,133	77	Weighted Average
2,894		35.58% Pervious Area
5,239		64.42% Impervious Area

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

Summary for Subcatchment PRA3:

Runoff = 0.47 cfs @ 12.08 hrs, Volume= 1,400 cf, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

	Area (sf)	CN	Description
	2,838	98	Paved parking, HSG A
	1,999	39	>75% Grass cover, Good, HSG A
*	842	98	Walks
	5,679	77	Weighted Average
	1,999		35.20% Pervious Area
	3,680		64.80% Impervious Area

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

Summary for Subcatchment PRB2:

Runoff = 1.00 cfs @ 12.07 hrs, Volume= 3,112 cf, Depth> 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
7,591	98	Paved parking, HSG A
1,177	39	>75% Grass cover, Good, HSG A
8,768	90	Weighted Average
1,177		13.42% Pervious Area
7,591		86.58% Impervious Area

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

Summary for Subcatchment PRC1O: Offsite Flow to CBC1

Runoff = 5.74 cfs @ 12.10 hrs, Volume= 19,069 cf, Depth> 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
141,885	61	1/4 acre lots, 38% imp, HSG A
87,969		62.00% Pervious Area
53,916		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0462	1.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.4	354	0.0462	4.36		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.7					**Direct Entry, 1/10 Hour Minumum**
6.0	454	Total			

Summary for Subcatchment PRD1:

Runoff = 1.21 cfs @ 12.07 hrs, Volume= 3,620 cf, Depth> 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
9,127	98	Paved parking, HSG A
3,515	39	>75% Grass cover, Good, HSG A
12,642	82	Weighted Average
3,515		27.80% Pervious Area
9,127		72.20% Impervious Area

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

Summary for Subcatchment PRD1O: Offsite Flow to CBD1

Runoff = 1.49 cfs @ 12.10 hrs, Volume= 4,953 cf, Depth> 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
36,850	61	1/4 acre lots, 38% imp, HSG A
22,847		62.00% Pervious Area
14,003		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.62		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
5.0					**Direct Entry, 1/10 Hour Minumum**
6.0	100	Total			

Summary for Subcatchment PRD2:

Runoff = 0.53 cfs @ 12.07 hrs, Volume= 1,575 cf, Depth> 3.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

	Area (sf)	CN	Description
	3,501	98	Paved parking, HSG A
	1,967	39	>75% Grass cover, Good, HSG A
*	541	98	Walks
	6,009	79	Weighted Average
	1,967		32.73% Pervious Area
	4,042		67.27% Impervious Area

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

Summary for Subcatchment PRD2O: Offsite Flow to CBD2

Runoff = 0.22 cfs @ 12.10 hrs, Volume= 738 cf, Depth> 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
5,490	61	1/4 acre lots, 38% imp, HSG A
3,404		62.00% Pervious Area
2,086		38.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0300	1.62		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
5.0					**Direct Entry, 1/10 Hour Minumum**
6.0	100	Total			

Summary for Subcatchment PRE1:

Runoff = 0.05 cfs @ 12.08 hrs, Volume= 150 cf, Depth> 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

	Area (sf)	CN	Description
	134	98	Paved parking, HSG A
	758	39	>75% Grass cover, Good, HSG A
*	281	98	Walks
	1,173	60	Weighted Average
	758		64.62% Pervious Area
	415		35.38% Impervious Area

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

Summary for Subcatchment PRF1: Buidling 1

Runoff = 2.34 cfs @ 12.07 hrs, Volume= 8,011 cf, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
18,632	98	Roofs, HSG A
18,632		100.00% Impervious Area

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

Summary for Subcatchment PRF2: Building 2

Runoff = 0.38 cfs @ 12.07 hrs, Volume= 1,307 cf, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
3,040	98	Roofs, HSG A
3,040		100.00% Impervious Area

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

Summary for Subcatchment PRF3: Building 3

Runoff = 0.38 cfs @ 12.07 hrs, Volume= 1,307 cf, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
3,040	98	Roofs, HSG A
3,040		100.00% Impervious Area

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

Summary for Reach DP1: Municipal System

Inflow Area = 251,341 sf, 49.66% Impervious, Inflow Depth > 1.89" for 25-year event
Inflow = 5.85 cfs @ 12.16 hrs, Volume= 39,660 cf
Outflow = 5.85 cfs @ 12.16 hrs, Volume= 39,660 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Reach DP2: Abutting Properties

Inflow Area = 262,202 sf, 37.57% Impervious, Inflow Depth = 0.00" for 25-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: DMH C6

Inflow Area = 251,341 sf, 49.66% Impervious, Inflow Depth > 1.89" for 25-year event
Inflow = 5.85 cfs @ 12.16 hrs, Volume= 39,660 cf
Outflow = 5.85 cfs @ 12.16 hrs, Volume= 39,660 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.85 cfs @ 12.16 hrs, Volume= 39,660 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.92' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.80'	**12.0" Round Culvert** L= 112.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 16.80' / 16.70' S= 0.0009 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=5.85 cfs @ 12.16 hrs HW=21.92' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 5.85 cfs @ 7.45 fps)

Summary for Pond BR1: Blue Roof

Inflow Area = 18,632 sf,100.00% Impervious, Inflow Depth > 5.16" for 25-year event
Inflow = 2.34 cfs @ 12.07 hrs, Volume= 8,011 cf
Outflow = 0.18 cfs @ 13.03 hrs, Volume= 6,131 cf, Atten= 92%, Lag= 57.7 min
Primary = 0.18 cfs @ 13.03 hrs, Volume= 6,131 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 77.27' @ 13.03 hrs Surf.Area= 18,000 sf Storage= 4,789 cf

Plug-Flow detention time= 329.7 min calculated for 6,129 cf (77% of inflow)
Center-of-Mass det. time= 245.8 min (991.2 - 745.4)

Volume	Invert	Avail.Storage	Storage Description
#1	77.00'	9,000 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
77.00	18,000	0	0
77.50	18,000	9,000	9,000

Device	Routing	Invert	Outlet Devices
#1	Primary	77.00'	**2.0" Vert. Orifice/Grate X 4.00** C= 0.600

Primary OutFlow Max=0.18 cfs @ 13.03 hrs HW=77.27' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.18 cfs @ 2.06 fps)

Summary for Pond CBA1: CBA1

Inflow Area = 8,133 sf, 64.42% Impervious, Inflow Depth > 2.96" for 25-year event
Inflow = 0.67 cfs @ 12.08 hrs, Volume= 2,005 cf
Outflow = 0.67 cfs @ 12.08 hrs, Volume= 1,954 cf, Atten= 0%, Lag= 0.1 min
Primary = 0.67 cfs @ 12.08 hrs, Volume= 1,954 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.78' @ 12.08 hrs Surf.Area= 13 sf Storage= 57 cf

Plug-Flow detention time= 21.2 min calculated for 1,954 cf (97% of inflow)
Center-of-Mass det. time= 6.6 min (831.3 - 824.7)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	960 cf	**Custom Stage Data (Prismatic)** Listed below
#2	14.25'	85 cf	**4.00'D x 6.75'H Vertical Cone/Cylinder**
		1,045 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	8	0	0
21.50	1,502	378	378
21.75	3,158	583	960

Device	Routing	Invert	Outlet Devices
#1	Primary	18.25'	**12.0" Round Culvert** L= 114.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.25' / 17.91' S= 0.0030 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.08 hrs HW=18.78' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.67 cfs @ 2.31 fps)

Summary for Pond CBA3: CBA3

Inflow Area = 13,812 sf, 64.57% Impervious, Inflow Depth > 2.91" for 25-year event
Inflow = 1.14 cfs @ 12.08 hrs, Volume= 3,354 cf
Outflow = 1.14 cfs @ 12.08 hrs, Volume= 3,303 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.14 cfs @ 12.08 hrs, Volume= 3,303 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 18.65' @ 12.08 hrs Surf.Area= 13 sf Storage= 58 cf

Plug-Flow detention time= 12.7 min calculated for 3,302 cf (98% of inflow)
Center-of-Mass det. time= 3.8 min (832.3 - 828.5)

Volume	Invert	Avail.Storage	Storage Description
#1	21.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
#2	14.01'	75 cf	**4.00'D x 6.00'H Vertical Cone/Cylinder**
		1,077 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
21.00	4	0	0
21.50	1,600	401	401
21.75	3,202	600	1,001

Device	Routing	Invert	Outlet Devices
#1	Primary	18.01'	**12.0" Round Culvert** L= 219.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 18.01' / 17.00' S= 0.0046 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.14 cfs @ 12.08 hrs HW=18.65' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.14 cfs @ 2.15 fps)

Summary for Pond CBB2: CBB2

Inflow Area = 14,848 sf, 92.07% Impervious, Inflow Depth > 4.63" for 25-year event
Inflow = 1.76 cfs @ 12.07 hrs, Volume= 5,726 cf
Outflow = 1.76 cfs @ 12.07 hrs, Volume= 5,677 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.76 cfs @ 12.07 hrs, Volume= 5,677 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Peak Elev= 19.79' @ 12.07 hrs Surf.Area= 13 sf Storage= 58 cf

Plug-Flow detention time= 10.8 min calculated for 5,675 cf (99% of inflow)
Center-of-Mass det. time= 5.3 min (773.1 - 767.9)

Volume	Invert	Avail.Storage	Storage Description
#1	22.15'	1,128 cf	**Custom Stage Data (Prismatic)** Listed below
#2	15.15'	88 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder**
		1,216 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.15	8	0	0
22.70	4,094	1,128	1,128

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	**12.0" Round Culvert** L= 112.7' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 19.00' / 18.14' S= 0.0076 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=1.76 cfs @ 12.07 hrs HW=19.79' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.76 cfs @ 2.66 fps)

Summary for Pond CBC1: CBC1

Inflow Area = 141,885 sf, 38.00% Impervious, Inflow Depth > 1.61" for 25-year event
Inflow = 5.74 cfs @ 12.10 hrs, Volume= 19,069 cf
Outflow = 5.74 cfs @ 12.10 hrs, Volume= 19,069 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.74 cfs @ 12.10 hrs, Volume= 19,069 cf
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.57' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	18.76'	**12.0" Round Culvert** L= 94.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.76' / 18.14' S= 0.0065 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Secondary	22.30'	**10.0' long x 2.5' 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 Coef. (English) 2.48 2.60 2.60 2.60 2.64 2.65 2.68 2.75 2.74 2.76 2.89 3.05 3.19 3.32

Primary OutFlow Max=5.74 cfs @ 12.10 hrs HW=21.56' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 5.74 cfs @ 7.30 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.76' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CBD2: CBD2

Inflow Area = 217,724 sf, 44.48% Impervious, Inflow Depth > 1.91" for 25-year event
Inflow = 5.50 cfs @ 12.21 hrs, Volume= 34,739 cf
Outflow = 5.29 cfs @ 12.39 hrs, Volume= 34,691 cf, Atten= 4%, Lag= 10.5 min
Primary = 5.29 cfs @ 12.39 hrs, Volume= 34,691 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.17' @ 12.39 hrs Surf.Area= 1,229 sf Storage= 269 cf

Plug-Flow detention time= 1.5 min calculated for 34,691 cf (100% of inflow)
Center-of-Mass det. time= 0.7 min (871.0 - 870.3)

Volume	Invert	Avail.Storage	Storage Description
#1	20.80'	1,721 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	13.95'	86 cf	**4.00'D x 6.85'H Vertical Cone/Cylinder**
		1,807 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.80	4	0	0
21.00	443	45	45
21.50	2,755	800	844
21.75	4,262	877	1,721

Device	Routing	Invert	Outlet Devices
#1	Primary	17.53'	**12.0" Round Culvert** L= 123.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.53' / 16.90' S= 0.0051 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=5.29 cfs @ 12.39 hrs HW=21.17' (Free Discharge)
↑**1=Culvert** (Inlet Controls 5.29 cfs @ 6.73 fps)

Summary for Pond CBE1: CBE1

Inflow Area = 1,173 sf, 35.38% Impervious, Inflow Depth > 1.54" for 25-year event
Inflow = 0.05 cfs @ 12.08 hrs, Volume= 150 cf
Outflow = 0.05 cfs @ 12.08 hrs, Volume= 150 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.05 cfs @ 12.08 hrs, Volume= 150 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 17.65' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.53'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 17.53' / 17.40' S= 0.0130 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.05 cfs @ 12.08 hrs HW=17.65' (Free Discharge)
└─**1=Culvert** (Inlet Controls 0.05 cfs @ 0.91 fps)

Summary for Pond DMHD2: DMH D2

Inflow Area = 156,733 sf, 43.12% Impervious, Inflow Depth > 1.89" for 25-year event
Inflow = 7.44 cfs @ 12.09 hrs, Volume= 24,747 cf
Outflow = 7.44 cfs @ 12.09 hrs, Volume= 24,747 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.44 cfs @ 12.09 hrs, Volume= 24,747 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 19.52' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	17.86'	**12.0" Round Culvert to S3** L= 2.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 17.86' / 17.76' S= 0.0500 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf
#2	Primary	18.14'	**12.0" Round Culvert to D3** L= 76.4' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 18.14' / 17.76' S= 0.0050 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=7.43 cfs @ 12.09 hrs HW=19.52' (Free Discharge)
├─**1=Culvert to S3** (Inlet Controls 4.07 cfs @ 5.18 fps)
└─**2=Culvert to D3** (Barrel Controls 3.37 cfs @ 4.29 fps)

Summary for Pond DMHD6:

Inflow Area = 250,168 sf, 49.73% Impervious, Inflow Depth > 1.90" for 25-year event
Inflow = 5.82 cfs @ 12.16 hrs, Volume= 39,509 cf
Outflow = 5.82 cfs @ 12.16 hrs, Volume= 39,509 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.82 cfs @ 12.16 hrs, Volume= 39,509 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.44' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.90'	**12.0" Round Culvert** L= 10.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 16.90' / 16.80' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=5.82 cfs @ 12.16 hrs HW=20.44' (Free Discharge)
└─**1=Culvert** (Inlet Controls 5.82 cfs @ 7.41 fps)

Summary for Pond DMHD8:

Inflow Area = 251,341 sf, 49.66% Impervious, Inflow Depth > 1.89" for 25-year event
Inflow = 5.85 cfs @ 12.16 hrs, Volume= 39,660 cf
Outflow = 5.85 cfs @ 12.16 hrs, Volume= 39,660 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.85 cfs @ 12.16 hrs, Volume= 39,660 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 20.38' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	16.80'	**12.0" Round Culvert** L= 16.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 16.80' / 16.80' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=5.85 cfs @ 12.16 hrs HW=20.38' (Free Discharge)
↑**1=Culvert** (Inlet Controls 5.85 cfs @ 7.45 fps)

Summary for Pond PR2P: Offsite Isolated Wetland

Inflow Area = 262,202 sf, 37.57% Impervious, Inflow Depth > 1.60" for 25-year event
Inflow = 10.49 cfs @ 12.10 hrs, Volume= 34,912 cf
Outflow = 1.09 cfs @ 13.49 hrs, Volume= 34,817 cf, Atten= 90%, Lag= 83.4 min
Discarded = 1.09 cfs @ 13.49 hrs, Volume= 34,817 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.02' @ 13.49 hrs Surf.Area= 19,553 sf Storage= 13,489 cf

Plug-Flow detention time= 144.4 min calculated for 34,802 cf (100% of inflow)
Center-of-Mass det. time= 142.8 min (1,009.1 - 866.3)

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	61,224 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.00	6,704	0	0
21.00	19,440	13,072	13,072
22.00	24,701	22,071	35,143
23.00	27,462	26,082	61,224

Device	Routing	Invert	Outlet Devices
#1	Primary	22.96'	**24.0' long x 15.0' 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
#2	Discarded	20.00'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.09 cfs @ 13.49 hrs HW=21.02' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=20.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond S1: Infiltration System S1 (Stormtech SC-310 Chambers)

Inflow Area = 18,632 sf,100.00% Impervious, Inflow Depth > 3.95" for 25-year event
Inflow = 0.18 cfs @ 13.03 hrs, Volume= 6,131 cf
Outflow = 0.16 cfs @ 15.50 hrs, Volume= 5,090 cf, Atten= 8%, Lag= 148.1 min
Discarded = 0.07 cfs @ 11.79 hrs, Volume= 3,574 cf
Primary = 0.09 cfs @ 15.50 hrs, Volume= 1,516 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.53' @ 15.50 hrs Surf.Area= 1,293 sf Storage= 1,130 cf

Plug-Flow detention time= 113.4 min calculated for 5,087 cf (83% of inflow)
Center-of-Mass det. time= 44.9 min (1,036.2 - 991.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	19.87'	693 cf	**28.17'W x 45.92'L x 2.33'H Field A** 3,018 cf Overall - 708 cf Embedded = 2,310 cf x 30.0% Voids
#2A	20.37'	708 cf	**ADS_StormTech SC-310 +Cap** x 48 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 8 Rows
		1,401 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	21.37'	**12.0" Round Culvert** L= 17.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 21.37' / 16.90' S= 0.2629 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#2	Discarded	19.87'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 11.79 hrs HW=19.90' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.09 cfs @ 15.50 hrs HW=21.53' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.09 cfs @ 1.19 fps)

Summary for Pond S2: CBD1 & System S3

Inflow Area = 206,225 sf, 43.99% Impervious, Inflow Depth > 1.94" for 25-year event
Inflow = 10.10 cfs @ 12.09 hrs, Volume= 33,320 cf
Outflow = 5.13 cfs @ 12.27 hrs, Volume= 32,425 cf, Atten= 49%, Lag= 10.9 min
Primary = 5.13 cfs @ 12.27 hrs, Volume= 32,425 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 21.21' @ 12.27 hrs Surf.Area= 7,406 sf Storage= 6,981 cf

Plug-Flow detention time= 43.6 min calculated for 32,425 cf (97% of inflow)
Center-of-Mass det. time= 28.5 min (872.8 - 844.3)

Volume	Invert	Avail.Storage	Storage Description
#1	20.83'	26,713 cf	**Custom Stage Data (Prismatic)** Listed below
#2	14.00'	86 cf	**4.00'D x 6.83'H Vertical Cone/Cylinder**
#3	17.76'	6,385 cf	**14.13'W x 6.89'L x 1.83'H Stormtrap (14") (Prismatoid)** x 56 9,977 cf Overall x 64.0% Voids
		33,185 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
20.83	8	0	0
21.00	531	46	46
21.50	3,886	1,104	1,150
21.75	5,942	1,229	2,379
22.00	36,605	5,318	7,697
22.50	39,461	19,017	26,713

Device	Routing	Invert	Outlet Devices
#1	Primary	17.76'	**12.0" Round Culvert** L= 92.8' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 17.76' / 17.44' S= 0.0034 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.13 cfs @ 12.27 hrs HW=21.21' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 5.13 cfs @ 6.53 fps)