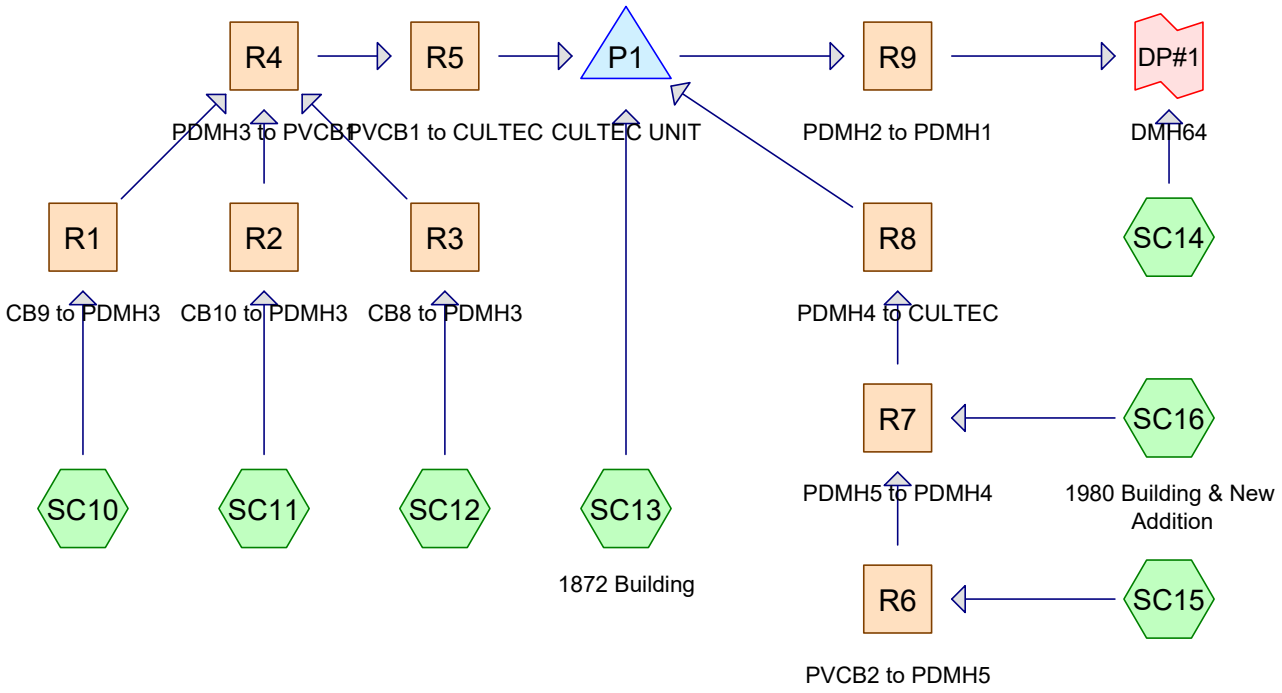


Subcat Reach Pond Link

Routing Diagram for 6215_93_State_Street-POST
Prepared by Meridian Associates, Inc., Printed 1/14/2020

Summary for Subcatchment SC10:

Runoff = 0.12 cfs @ 12.10 hrs, Volume= 436 cf, Depth> 0.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
3,560	98	Paved parking, HSG A
3,900	39	>75% Grass cover, Good, HSG A
7,460	67	Weighted Average
3,900		52.28% Pervious Area
3,560		47.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	36	0.0300	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.23"
0.2	17	0.0300	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.3	55	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8					**Direct Entry, Minimum Tc**
6.0	108	Total			

Summary for Subcatchment SC11:

Runoff = 0.14 cfs @ 12.09 hrs, Volume= 455 cf, Depth> 1.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
2,855	98	Paved parking, HSG A
1,575	39	>75% Grass cover, Good, HSG A
4,430	77	Weighted Average
1,575		35.55% Pervious Area
2,855		64.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	17	0.0500	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.23"
0.4	34	0.0300	1.31		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	39	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.8					**Direct Entry, Minimum Tc**
6.0	90	Total			

Summary for Subcatchment SC12:

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 423 cf, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
2,735	98	Paved parking, HSG A
1,595	39	>75% Grass cover, Good, HSG A
4,330	76	Weighted Average
1,595		36.84% Pervious Area
2,735		63.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	25	0.0500	0.45		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
0.3	25	0.0300	1.23		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.3	72	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.5					**Direct Entry, Minimum Tc**
6.0	122	Total			

Summary for Subcatchment SC13: 1872 Building

Runoff = 0.26 cfs @ 12.08 hrs, Volume= 911 cf, Depth> 2.99"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
3,650	98	Roofs, HSG A
3,650		100.00% Impervious Area

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

Summary for Subcatchment SC14:

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 96 cf, Depth> 0.84"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

	Area (sf)	CN	Description
*	725	98	Existing Asphalt Parking Areas
	640	39	>75% Grass cover, Good, HSG A
	1,365	70	Weighted Average
	640		46.89% Pervious Area
	725		53.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	23	0.0300	0.36		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
0.2	16	0.0300	1.13		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
4.7					**Direct Entry, Minimum Tc**
6.0	39	Total			

Summary for Subcatchment SC15:

Runoff = 0.05 cfs @ 12.10 hrs, Volume= 175 cf, Depth> 0.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

	Area (sf)	CN	Description
*	1,245	98	Existing Asphalt Parking Areas
	975	39	>75% Grass cover, Good, HSG A
	2,220	72	Weighted Average
	975		43.92% Pervious Area
	1,245		56.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	17	0.0300	0.34		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
0.1	9	0.0300	1.00		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
5.1					**Direct Entry, Minimum Tc**
6.0	26	Total			

Summary for Subcatchment SC16: 1980 Building & New Addition

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 2,578 cf, Depth> 2.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.23"

Area (sf)	CN	Description
715	98	Paved parking, HSG A
11,285	98	Roofs, HSG A
1,545	39	>75% Grass cover, Good, HSG A
13,545	91	Weighted Average
1,545		11.41% Pervious Area
12,000		88.59% Impervious Area

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

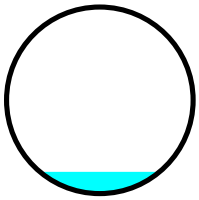
Summary for Reach R1: CB9 to PDMH3

Inflow Area = 7,460 sf, 47.72% Impervious, Inflow Depth > 0.70" for 2-yr event
Inflow = 0.12 cfs @ 12.10 hrs, Volume= 436 cf
Outflow = 0.12 cfs @ 12.11 hrs, Volume= 436 cf, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.32 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.98 fps, Avg. Travel Time= 0.8 min

Peak Storage= 2 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.11 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 45.0' Slope= 0.0133 '/'
Inlet Invert= 96.60', Outlet Invert= 96.00'



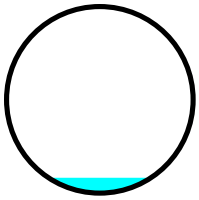
Summary for Reach R2: CB10 to PDMH3

Inflow Area = 4,430 sf, 64.45% Impervious, Inflow Depth > 1.23" for 2-yr event
Inflow = 0.14 cfs @ 12.09 hrs, Volume= 455 cf
Outflow = 0.14 cfs @ 12.09 hrs, Volume= 455 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.70 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.82 fps, Avg. Travel Time= 0.1 min

Peak Storage= 0 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 10.43 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 7.0' Slope= 0.0857 '/'
Inlet Invert= 96.60', Outlet Invert= 96.00'



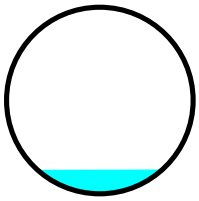
Summary for Reach R3: CB8 to PDMH3

Inflow Area = 4,330 sf, 63.16% Impervious, Inflow Depth > 1.17" for 2-yr event
Inflow = 0.13 cfs @ 12.09 hrs, Volume= 423 cf
Outflow = 0.13 cfs @ 12.10 hrs, Volume= 422 cf, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.19 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 1.2 min

Peak Storage= 3 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.62 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 58.0' Slope= 0.0103 '/'
Inlet Invert= 96.60', Outlet Invert= 96.00'



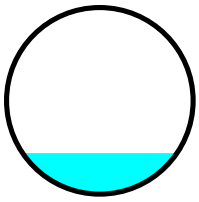
Summary for Reach R4: PDMH3 to PVCB1

Inflow Area = 16,220 sf, 56.41% Impervious, Inflow Depth > 0.97" for 2-yr event
Inflow = 0.39 cfs @ 12.10 hrs, Volume= 1,313 cf
Outflow = 0.39 cfs @ 12.10 hrs, Volume= 1,313 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.10 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.20 fps, Avg. Travel Time= 0.1 min

Peak Storage= 1 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.76 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 9.0' Slope= 0.0111 '/'
Inlet Invert= 95.90', Outlet Invert= 95.80'



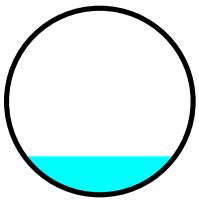
Summary for Reach R5: PVCB1 to CULTEC

Inflow Area = 16,220 sf, 56.41% Impervious, Inflow Depth > 0.97" for 2-yr event
Inflow = 0.39 cfs @ 12.10 hrs, Volume= 1,313 cf
Outflow = 0.39 cfs @ 12.10 hrs, Volume= 1,313 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.39 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.31 fps, Avg. Travel Time= 0.1 min

Peak Storage= 1 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.26 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 7.0' Slope= 0.0143 '/'
Inlet Invert= 95.70', Outlet Invert= 95.60'



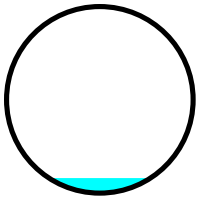
Summary for Reach R6: PVCB2 to PDMH5

Inflow Area = 2,220 sf, 56.08% Impervious, Inflow Depth > 0.95" for 2-yr event
Inflow = 0.05 cfs @ 12.10 hrs, Volume= 175 cf
Outflow = 0.05 cfs @ 12.10 hrs, Volume= 175 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.77 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.72 fps, Avg. Travel Time= 0.2 min

Peak Storage= 0 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.98 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 8.0' Slope= 0.0125 '/'
Inlet Invert= 96.90', Outlet Invert= 96.80'



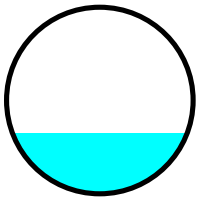
Summary for Reach R7: PDMH5 to PDMH4

Inflow Area = 15,765 sf, 84.02% Impervious, Inflow Depth > 2.10" for 2-yr event
Inflow = 0.87 cfs @ 12.09 hrs, Volume= 2,753 cf
Outflow = 0.87 cfs @ 12.09 hrs, Volume= 2,753 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.93 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.33 fps, Avg. Travel Time= 0.4 min

Peak Storage= 8 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.81 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 35.0' Slope= 0.0114 '/'
Inlet Invert= 96.70', Outlet Invert= 96.30'



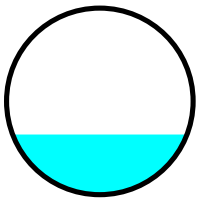
Summary for Reach R8: PDMH4 to CULTEC

Inflow Area = 15,765 sf, 84.02% Impervious, Inflow Depth > 2.10" for 2-yr event
Inflow = 0.87 cfs @ 12.09 hrs, Volume= 2,753 cf
Outflow = 0.87 cfs @ 12.09 hrs, Volume= 2,753 cf, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.97 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.34 fps, Avg. Travel Time= 0.6 min

Peak Storage= 11 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.86 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 51.0' Slope= 0.0118 '/'
Inlet Invert= 96.20', Outlet Invert= 95.60'



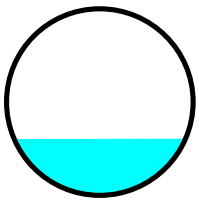
Summary for Reach R9: PDMH2 to PDMH1

Inflow Area = 35,635 sf, 73.09% Impervious, Inflow Depth > 1.60" for 2-yr event
Inflow = 1.31 cfs @ 12.14 hrs, Volume= 4,752 cf
Outflow = 1.31 cfs @ 12.14 hrs, Volume= 4,751 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.16 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.63 fps, Avg. Travel Time= 0.4 min

Peak Storage= 12 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.38'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 6.54 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 39.0' Slope= 0.0103 '/'
Inlet Invert= 94.40', Outlet Invert= 94.00'



Summary for Pond P1: CULTEC UNIT

Inflow Area = 35,635 sf, 73.09% Impervious, Inflow Depth > 1.68" for 2-yr event
Inflow = 1.52 cfs @ 12.09 hrs, Volume= 4,977 cf
Outflow = 1.31 cfs @ 12.14 hrs, Volume= 4,752 cf, Atten= 14%, Lag= 2.9 min
Primary = 1.31 cfs @ 12.14 hrs, Volume= 4,752 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 95.53' @ 12.14 hrs Surf.Area= 863 sf Storage= 632 cf

Plug-Flow detention time= 48.8 min calculated for 4,750 cf (95% of inflow)
Center-of-Mass det. time= 23.6 min (835.8 - 812.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	94.40'	689 cf	**19.17'W x 45.00'L x 3.21'H Field A** 2,767 cf Overall - 1,044 cf Embedded = 1,723 cf x 40.0% Voids
#2A	94.90'	1,044 cf	**Cultec R-280** x 24 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	94.90'	**12.0" Round Culvert - R9** L= 38.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 94.90' / 94.52' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.30 cfs @ 12.14 hrs HW=95.53' TW=94.78' (Dynamic Tailwater)
↑—**1=Culvert - R9** (Barrel Controls 1.30 cfs @ 3.55 fps)

Summary for Link DP#1: DMH64

Inflow Area = 37,000 sf, 72.35% Impervious, Inflow Depth > 1.57" for 2-yr event
Inflow = 1.33 cfs @ 12.14 hrs, Volume= 4,847 cf
Primary = 1.33 cfs @ 12.14 hrs, Volume= 4,847 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Subcatchment SC10:

Runoff = 0.34 cfs @ 12.09 hrs, Volume= 1,102 cf, Depth> 1.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.96"

Area (sf)	CN	Description
3,560	98	Paved parking, HSG A
3,900	39	>75% Grass cover, Good, HSG A
7,460	67	Weighted Average
3,900		52.28% Pervious Area
3,560		47.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	36	0.0300	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.23"
0.2	17	0.0300	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.3	55	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8					**Direct Entry, Minimum Tc**
6.0	108	Total			

Summary for Subcatchment SC11:

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 955 cf, Depth> 2.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.96"

Area (sf)	CN	Description
2,855	98	Paved parking, HSG A
1,575	39	>75% Grass cover, Good, HSG A
4,430	77	Weighted Average
1,575		35.55% Pervious Area
2,855		64.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	17	0.0500	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.23"
0.4	34	0.0300	1.31		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	39	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.8					**Direct Entry, Minimum Tc**
6.0	90	Total			

Summary for Subcatchment SC12:

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 902 cf, Depth> 2.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.96"

Area (sf)	CN	Description
2,735	98	Paved parking, HSG A
1,595	39	>75% Grass cover, Good, HSG A
4,330	76	Weighted Average
1,595		36.84% Pervious Area
2,735		63.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	25	0.0500	0.45		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
0.3	25	0.0300	1.23		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.3	72	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.5					**Direct Entry, Minimum Tc**
6.0	122	Total			

Summary for Subcatchment SC13: 1872 Building

Runoff = 0.41 cfs @ 12.08 hrs, Volume= 1,436 cf, Depth> 4.72"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.96"

Area (sf)	CN	Description
3,650	98	Roofs, HSG A
3,650		100.00% Impervious Area

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

Summary for Subcatchment SC14:

Runoff = 0.07 cfs @ 12.09 hrs, Volume= 228 cf, Depth> 2.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.96"

	Area (sf)	CN	Description
*	725	98	Existing Asphalt Parking Areas
	640	39	>75% Grass cover, Good, HSG A
	1,365	70	Weighted Average
	640		46.89% Pervious Area
	725		53.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	23	0.0300	0.36		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
0.2	16	0.0300	1.13		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
4.7					**Direct Entry, Minimum Tc**
6.0	39	Total			

Summary for Subcatchment SC15:

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 400 cf, Depth> 2.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.96"

	Area (sf)	CN	Description
*	1,245	98	Existing Asphalt Parking Areas
	975	39	>75% Grass cover, Good, HSG A
	2,220	72	Weighted Average
	975		43.92% Pervious Area
	1,245		56.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	17	0.0300	0.34		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
0.1	9	0.0300	1.00		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
5.1					**Direct Entry, Minimum Tc**
6.0	26	Total			

Summary for Subcatchment SC16: 1980 Building & New Addition

Runoff = 1.38 cfs @ 12.08 hrs, Volume= 4,447 cf, Depth> 3.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.96"

Area (sf)	CN	Description
715	98	Paved parking, HSG A
11,285	98	Roofs, HSG A
1,545	39	>75% Grass cover, Good, HSG A
13,545	91	Weighted Average
1,545		11.41% Pervious Area
12,000		88.59% Impervious Area

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

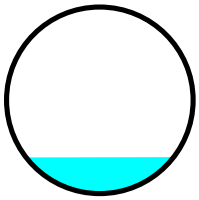
Summary for Reach R1: CB9 to PDMH3

Inflow Area = 7,460 sf, 47.72% Impervious, Inflow Depth > 1.77" for 10-yr event
Inflow = 0.34 cfs @ 12.09 hrs, Volume= 1,102 cf
Outflow = 0.34 cfs @ 12.10 hrs, Volume= 1,102 cf, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.18 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 0.6 min

Peak Storage= 5 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.20'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.11 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 45.0' Slope= 0.0133 '/'
Inlet Invert= 96.60', Outlet Invert= 96.00'



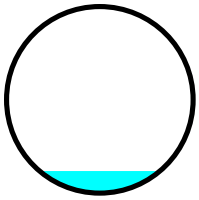
Summary for Reach R2: CB10 to PDMH3

Inflow Area = 4,430 sf, 64.45% Impervious, Inflow Depth > 2.59" for 10-yr event
Inflow = 0.31 cfs @ 12.09 hrs, Volume= 955 cf
Outflow = 0.31 cfs @ 12.09 hrs, Volume= 955 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.92 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.14 fps, Avg. Travel Time= 0.1 min

Peak Storage= 0 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 10.43 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 7.0' Slope= 0.0857 '/'
Inlet Invert= 96.60', Outlet Invert= 96.00'



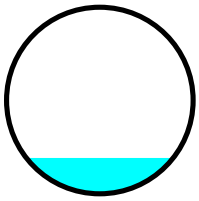
Summary for Reach R3: CB8 to PDMH3

Inflow Area = 4,330 sf, 63.16% Impervious, Inflow Depth > 2.50" for 10-yr event
Inflow = 0.29 cfs @ 12.09 hrs, Volume= 902 cf
Outflow = 0.29 cfs @ 12.09 hrs, Volume= 902 cf, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.77 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.00 fps, Avg. Travel Time= 1.0 min

Peak Storage= 6 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.62 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 58.0' Slope= 0.0103 '/'
Inlet Invert= 96.60', Outlet Invert= 96.00'



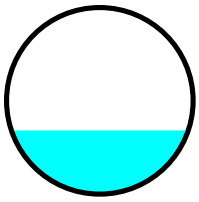
Summary for Reach R4: PDMH3 to PVCB1

Inflow Area = 16,220 sf, 56.41% Impervious, Inflow Depth > 2.19" for 10-yr event
Inflow = 0.94 cfs @ 12.09 hrs, Volume= 2,958 cf
Outflow = 0.94 cfs @ 12.09 hrs, Volume= 2,958 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.98 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.44 fps, Avg. Travel Time= 0.1 min

Peak Storage= 2 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.76 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 9.0' Slope= 0.0111 '/'
Inlet Invert= 95.90', Outlet Invert= 95.80'



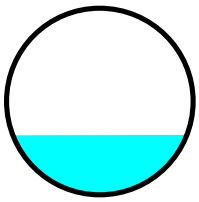
Summary for Reach R5: PVCB1 to CULTEC

Inflow Area = 16,220 sf, 56.41% Impervious, Inflow Depth > 2.19" for 10-yr event
Inflow = 0.94 cfs @ 12.09 hrs, Volume= 2,958 cf
Outflow = 0.94 cfs @ 12.09 hrs, Volume= 2,958 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.35 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.57 fps, Avg. Travel Time= 0.1 min

Peak Storage= 2 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.26 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 7.0' Slope= 0.0143 '/'
Inlet Invert= 95.70', Outlet Invert= 95.60'



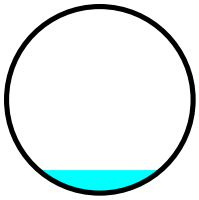
Summary for Reach R6: PVCB2 to PDMH5

Inflow Area = 2,220 sf, 56.08% Impervious, Inflow Depth > 2.16" for 10-yr event
Inflow = 0.13 cfs @ 12.09 hrs, Volume= 400 cf
Outflow = 0.13 cfs @ 12.09 hrs, Volume= 400 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.32 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 0.2 min

Peak Storage= 0 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.98 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 8.0' Slope= 0.0125 '/'
Inlet Invert= 96.90', Outlet Invert= 96.80'



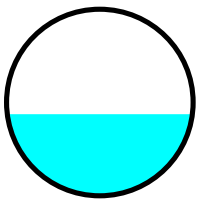
Summary for Reach R7: PDMH5 to PDMH4

Inflow Area = 15,765 sf, 84.02% Impervious, Inflow Depth > 3.69" for 10-yr event
Inflow = 1.50 cfs @ 12.09 hrs, Volume= 4,847 cf
Outflow = 1.50 cfs @ 12.09 hrs, Volume= 4,847 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.56 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.53 fps, Avg. Travel Time= 0.4 min

Peak Storage= 12 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.44'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.81 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 35.0' Slope= 0.0114 '/'
Inlet Invert= 96.70', Outlet Invert= 96.30'



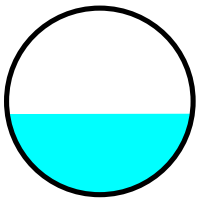
Summary for Reach R8: PDMH4 to CULTEC

Inflow Area = 15,765 sf, 84.02% Impervious, Inflow Depth > 3.69" for 10-yr event
Inflow = 1.50 cfs @ 12.09 hrs, Volume= 4,847 cf
Outflow = 1.50 cfs @ 12.09 hrs, Volume= 4,846 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.61 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.54 fps, Avg. Travel Time= 0.6 min

Peak Storage= 17 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.43'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.86 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 51.0' Slope= 0.0118 '/'
Inlet Invert= 96.20', Outlet Invert= 95.60'



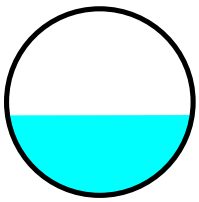
Summary for Reach R9: PDMH2 to PDMH1

Inflow Area = 35,635 sf, 73.09% Impervious, Inflow Depth > 3.03" for 10-yr event
Inflow = 2.51 cfs @ 12.13 hrs, Volume= 9,000 cf
Outflow = 2.51 cfs @ 12.14 hrs, Volume= 8,999 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.98 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.89 fps, Avg. Travel Time= 0.3 min

Peak Storage= 20 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.54'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 6.54 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 39.0' Slope= 0.0103 '/'
Inlet Invert= 94.40', Outlet Invert= 94.00'



Summary for Pond P1: CULTEC UNIT

Inflow Area = 35,635 sf, 73.09% Impervious, Inflow Depth > 3.11" for 10-yr event
Inflow = 2.85 cfs @ 12.09 hrs, Volume= 9,240 cf
Outflow = 2.51 cfs @ 12.13 hrs, Volume= 9,000 cf, Atten= 12%, Lag= 2.6 min
Primary = 2.51 cfs @ 12.13 hrs, Volume= 9,000 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 95.88' @ 12.13 hrs Surf.Area= 863 sf Storage= 870 cf

Plug-Flow detention time= 32.6 min calculated for 9,000 cf (97% of inflow)
Center-of-Mass det. time= 17.2 min (817.5 - 800.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	94.40'	689 cf	**19.17'W x 45.00'L x 3.21'H Field A** 2,767 cf Overall - 1,044 cf Embedded = 1,723 cf x 40.0% Voids
#2A	94.90'	1,044 cf	**Cultec R-280** x 24 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	94.90'	**12.0" Round Culvert - R9** L= 38.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 94.90' / 94.52' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.51 cfs @ 12.13 hrs HW=95.88' TW=94.94' (Dynamic Tailwater)
↑—**1=Culvert - R9** (Barrel Controls 2.51 cfs @ 4.06 fps)

Summary for Link DP#1: DMH64

Inflow Area = 37,000 sf, 72.35% Impervious, Inflow Depth > 2.99" for 10-yr event
Inflow = 2.57 cfs @ 12.13 hrs, Volume= 9,227 cf
Primary = 2.57 cfs @ 12.13 hrs, Volume= 9,227 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Summary for Subcatchment SC10:

Runoff = 1.03 cfs @ 12.09 hrs, Volume= 3,184 cf, Depth> 5.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.19"

Area (sf)	CN	Description
3,560	98	Paved parking, HSG A
3,900	39	>75% Grass cover, Good, HSG A
7,460	67	Weighted Average
3,900		52.28% Pervious Area
3,560		47.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	36	0.0300	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.23"
0.2	17	0.0300	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.3	55	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8					**Direct Entry, Minimum Tc**
6.0	108	Total			

Summary for Subcatchment SC11:

Runoff = 0.75 cfs @ 12.09 hrs, Volume= 2,351 cf, Depth> 6.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.19"

Area (sf)	CN	Description
2,855	98	Paved parking, HSG A
1,575	39	>75% Grass cover, Good, HSG A
4,430	77	Weighted Average
1,575		35.55% Pervious Area
2,855		64.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	17	0.0500	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.23"
0.4	34	0.0300	1.31		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	39	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.8					**Direct Entry, Minimum Tc**
6.0	90	Total			

Summary for Subcatchment SC12:

Runoff = 0.72 cfs @ 12.09 hrs, Volume= 2,254 cf, Depth> 6.25"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.19"

Area (sf)	CN	Description
2,735	98	Paved parking, HSG A
1,595	39	>75% Grass cover, Good, HSG A
4,330	76	Weighted Average
1,595		36.84% Pervious Area
2,735		63.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	25	0.0500	0.45		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
0.3	25	0.0300	1.23		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.3	72	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.5					**Direct Entry, Minimum Tc**
6.0	122	Total			

Summary for Subcatchment SC13: 1872 Building

Runoff = 0.76 cfs @ 12.08 hrs, Volume= 2,720 cf, Depth> 8.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.19"

Area (sf)	CN	Description
3,650	98	Roofs, HSG A
3,650		100.00% Impervious Area

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

Summary for Subcatchment SC14:

Runoff = 0.20 cfs @ 12.09 hrs, Volume= 625 cf, Depth> 5.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.19"

	Area (sf)	CN	Description
*	725	98	Existing Asphalt Parking Areas
	640	39	>75% Grass cover, Good, HSG A
	1,365	70	Weighted Average
	640		46.89% Pervious Area
	725		53.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	23	0.0300	0.36		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
0.2	16	0.0300	1.13		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
4.7					**Direct Entry, Minimum Tc**
6.0	39	Total			

Summary for Subcatchment SC15:

Runoff = 0.34 cfs @ 12.09 hrs, Volume= 1,063 cf, Depth> 5.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.19"

	Area (sf)	CN	Description
*	1,245	98	Existing Asphalt Parking Areas
	975	39	>75% Grass cover, Good, HSG A
	2,220	72	Weighted Average
	975		43.92% Pervious Area
	1,245		56.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	17	0.0300	0.34		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
0.1	9	0.0300	1.00		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
5.1					**Direct Entry, Minimum Tc**
6.0	26	Total			

Summary for Subcatchment SC16: 1980 Building & New Addition

Runoff = 2.72 cfs @ 12.08 hrs, Volume= 9,136 cf, Depth> 8.09"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=9.19"

Area (sf)	CN	Description
715	98	Paved parking, HSG A
11,285	98	Roofs, HSG A
1,545	39	>75% Grass cover, Good, HSG A
13,545	91	Weighted Average
1,545		11.41% Pervious Area
12,000		88.59% Impervious Area

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

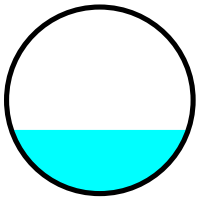
Summary for Reach R1: CB9 to PDMH3

Inflow Area = 7,460 sf, 47.72% Impervious, Inflow Depth > 5.12" for 100-yr event
Inflow = 1.03 cfs @ 12.09 hrs, Volume= 3,184 cf
Outflow = 1.03 cfs @ 12.09 hrs, Volume= 3,183 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.36 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.55 fps, Avg. Travel Time= 0.5 min

Peak Storage= 11 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.11 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 45.0' Slope= 0.0133 '/'
Inlet Invert= 96.60', Outlet Invert= 96.00'



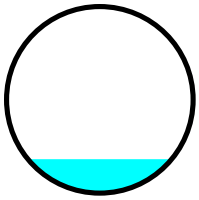
Summary for Reach R2: CB10 to PDMH3

Inflow Area = 4,430 sf, 64.45% Impervious, Inflow Depth > 6.37" for 100-yr event
Inflow = 0.75 cfs @ 12.09 hrs, Volume= 2,351 cf
Outflow = 0.75 cfs @ 12.09 hrs, Volume= 2,351 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.71 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.60 fps, Avg. Travel Time= 0.0 min

Peak Storage= 1 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 10.43 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 7.0' Slope= 0.0857 '/'
Inlet Invert= 96.60', Outlet Invert= 96.00'



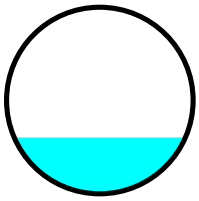
Summary for Reach R3: CB8 to PDMH3

Inflow Area = 4,330 sf, 63.16% Impervious, Inflow Depth > 6.25" for 100-yr event
Inflow = 0.72 cfs @ 12.09 hrs, Volume= 2,254 cf
Outflow = 0.72 cfs @ 12.09 hrs, Volume= 2,253 cf, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.60 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 0.8 min

Peak Storage= 12 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.62 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 58.0' Slope= 0.0103 '/'
Inlet Invert= 96.60', Outlet Invert= 96.00'



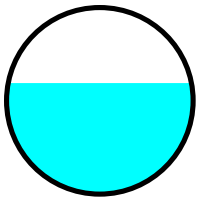
Summary for Reach R4: PDMH3 to PVCB1

Inflow Area = 16,220 sf, 56.41% Impervious, Inflow Depth > 5.76" for 100-yr event
Inflow = 2.50 cfs @ 12.09 hrs, Volume= 7,788 cf
Outflow = 2.50 cfs @ 12.09 hrs, Volume= 7,788 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.12 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.78 fps, Avg. Travel Time= 0.1 min

Peak Storage= 4 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.60'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.76 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 9.0' Slope= 0.0111 '/'
Inlet Invert= 95.90', Outlet Invert= 95.80'



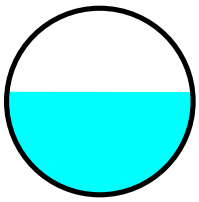
Summary for Reach R5: PVCB1 to CULTEC

Inflow Area = 16,220 sf, 56.41% Impervious, Inflow Depth > 5.76" for 100-yr event
Inflow = 2.50 cfs @ 12.09 hrs, Volume= 7,788 cf
Outflow = 2.50 cfs @ 12.09 hrs, Volume= 7,787 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.64 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.95 fps, Avg. Travel Time= 0.1 min

Peak Storage= 3 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.55'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.26 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 7.0' Slope= 0.0143 '/'
Inlet Invert= 95.70', Outlet Invert= 95.60'



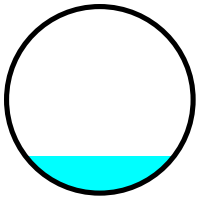
Summary for Reach R6: PVCB2 to PDMH5

Inflow Area = 2,220 sf, 56.08% Impervious, Inflow Depth > 5.75" for 100-yr event
Inflow = 0.34 cfs @ 12.09 hrs, Volume= 1,063 cf
Outflow = 0.34 cfs @ 12.09 hrs, Volume= 1,063 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.10 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 0.1 min

Peak Storage= 1 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.20'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.98 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 8.0' Slope= 0.0125 '/'
Inlet Invert= 96.90', Outlet Invert= 96.80'



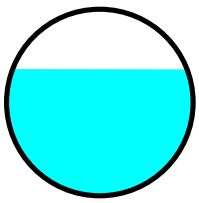
Summary for Reach R7: PDMH5 to PDMH4

Inflow Area = 15,765 sf, 84.02% Impervious, Inflow Depth > 7.76" for 100-yr event
Inflow = 3.06 cfs @ 12.08 hrs, Volume= 10,200 cf
Outflow = 3.06 cfs @ 12.09 hrs, Volume= 10,199 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.39 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.87 fps, Avg. Travel Time= 0.3 min

Peak Storage= 20 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.68'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.81 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 35.0' Slope= 0.0114 '/'
Inlet Invert= 96.70', Outlet Invert= 96.30'



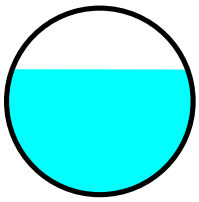
Summary for Reach R8: PDMH4 to CULTEC

Inflow Area = 15,765 sf, 84.02% Impervious, Inflow Depth > 7.76" for 100-yr event
Inflow = 3.06 cfs @ 12.09 hrs, Volume= 10,199 cf
Outflow = 3.06 cfs @ 12.09 hrs, Volume= 10,198 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.45 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.89 fps, Avg. Travel Time= 0.5 min

Peak Storage= 29 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.67'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.86 cfs

12.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 51.0' Slope= 0.0118 '/'
Inlet Invert= 96.20', Outlet Invert= 95.60'



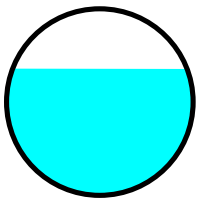
Summary for Reach R9: PDMH2 to PDMH1

Inflow Area = 35,635 sf, 73.09% Impervious, Inflow Depth > 6.88" for 100-yr event
Inflow = 5.25 cfs @ 12.14 hrs, Volume= 20,439 cf
Outflow = 5.25 cfs @ 12.14 hrs, Volume= 20,438 cf, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.93 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.27 fps, Avg. Travel Time= 0.3 min

Peak Storage= 35 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.85'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 6.54 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 39.0' Slope= 0.0103 '/'
Inlet Invert= 94.40', Outlet Invert= 94.00'



Summary for Pond P1: CULTEC UNIT

Inflow Area = 35,635 sf, 73.09% Impervious, Inflow Depth > 6.97" for 100-yr event
Inflow = 6.31 cfs @ 12.09 hrs, Volume= 20,705 cf
Outflow = 5.25 cfs @ 12.14 hrs, Volume= 20,439 cf, Atten= 17%, Lag= 3.2 min
Primary = 5.25 cfs @ 12.14 hrs, Volume= 20,439 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 97.39' @ 12.14 hrs Surf.Area= 863 sf Storage= 1,658 cf

Plug-Flow detention time= 19.6 min calculated for 20,431 cf (99% of inflow)
Center-of-Mass det. time= 11.6 min (795.4 - 783.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	94.40'	689 cf	**19.17'W x 45.00'L x 3.21'H Field A** 2,767 cf Overall - 1,044 cf Embedded = 1,723 cf x 40.0% Voids
#2A	94.90'	1,044 cf	**Cultec R-280** x 24 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	94.90'	**12.0" Round Culvert - R9** L= 38.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 94.90' / 94.52' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=5.25 cfs @ 12.14 hrs HW=97.39' TW=95.25' (Dynamic Tailwater)
↑—**1=Culvert - R9** (Barrel Controls 5.25 cfs @ 6.68 fps)

Summary for Link DP#1: DMH64

Inflow Area = 37,000 sf, 72.35% Impervious, Inflow Depth > 6.83" for 100-yr event
Inflow = 5.42 cfs @ 12.14 hrs, Volume= 21,063 cf
Primary = 5.42 cfs @ 12.14 hrs, Volume= 21,063 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs