



Routing Diagram for 6092P - POST rev3

Prepared by {enter your company name here}, Printed 8/26/2021
 HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

6092P - POST rev3

Type III 24-hr 2-year Rainfall=3.10"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 2

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment2S: REMAININGPROJECT Runoff Area=11,042 sf 13.17% Impervious Runoff Depth=0.48"
Flow Length=147' Tc=8.9 min CN=63 Runoff=0.09 cfs 0.010 af

Subcatchment3S: OFFISTE AREA Runoff Area=17,826 sf 26.62% Impervious Runoff Depth=0.82"
Tc=6.0 min CN=71 Runoff=0.35 cfs 0.028 af

Subcatchment5S: TRIBUTARYAREA TO Runoff Area=20,859 sf 24.75% Impervious Runoff Depth=1.26"
Flow Length=216' Tc=15.0 min CN=79 Runoff=0.52 cfs 0.050 af

Subcatchment6S: AREA TRIBUTARY TO Runoff Area=5,590 sf 81.88% Impervious Runoff Depth=2.16"
Tc=6.0 min CN=91 Runoff=0.31 cfs 0.023 af

Subcatchment8S: TRIBUTARYAREA TO Runoff Area=15,547 sf 0.00% Impervious Runoff Depth=0.59"
Flow Length=140' Tc=13.7 min CN=66 Runoff=0.15 cfs 0.018 af

Pond 1P: SUBSURFACEINFILTRATIONAREA Peak Elev=329.49' Storage=580 cf Inflow=0.52 cfs 0.050 af
Outflow=0.34 cfs 0.050 af

Pond 2P: CB-3 Peak Elev=324.42' Inflow=0.55 cfs 0.088 af
12.0" Round Culvert n=0.013 L=49.0' S=0.0200 '/ Outflow=0.55 cfs 0.088 af

Pond 3P: STONE INFILTRATIONAREA Peak Elev=334.46' Storage=769 cf Inflow=0.15 cfs 0.018 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 5P: EXISTING CB Peak Elev=323.48' Inflow=0.77 cfs 0.111 af
12.0" Round Culvert n=0.025 L=50.0' S=0.0200 '/ Outflow=0.77 cfs 0.111 af

Link 1L: DP-A Inflow=0.77 cfs 0.111 af
Primary=0.77 cfs 0.111 af

Total Runoff Area = 1.627 ac Runoff Volume = 0.129 af Average Runoff Depth = 0.95"
77.51% Pervious = 1.261 ac 22.49% Impervious = 0.366 ac

Summary for Subcatchment 2S: REMAINING PROJECT AREA TRIBUTARY TO PRIEST LANE

Runoff = 0.09 cfs @ 12.17 hrs, Volume= 0.010 af, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
5,913	55	Woods, Good, HSG B
3,675	61	>75% Grass cover, Good, HSG B
1,454	98	Paved parking, HSG B
11,042	63	Weighted Average
9,588		86.83% Pervious Area
1,454		13.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.2160	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.4	37	0.1140	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	60	0.1180	6.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.9	147	Total			

Summary for Subcatchment 3S: OFFISTE AREA TRIBUTARY TO PROPOSED CATCH BASIN

Runoff = 0.35 cfs @ 12.10 hrs, Volume= 0.028 af, Depth= 0.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
13,081	61	>75% Grass cover, Good, HSG B
4,745	98	Paved parking, HSG B
17,826	71	Weighted Average
13,081		73.38% Pervious Area
4,745		26.62% Impervious Area

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

Summary for Subcatchment 5S: TRIBUTARY AREA TO SUBSURFACE INFILTRATION

Runoff = 0.52 cfs @ 12.22 hrs, Volume= 0.050 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.10"

6092P - POST rev3

Type III 24-hr 2-year Rainfall=3.10"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 4

Area (sf)	CN	Description
1,562	98	Paved parking, HSG D
7,689	77	Woods, Good, HSG D
3,217	80	>75% Grass cover, Good, HSG D
3,600	98	Paved parking, HSG B
1,079	55	Woods, Good, HSG B
3,712	61	>75% Grass cover, Good, HSG B
20,859	79	Weighted Average
15,697		75.25% Pervious Area
5,162		24.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	50	0.0600	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.1	9	0.0670	1.29		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	17	0.0470	3.25		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.7	140	0.0240	3.14		Shallow Concentrated Flow, Paved Kv= 20.3 fps
15.0	216	Total			

Summary for Subcatchment 6S: AREA TRIBUTARY TO EXISTING CATCH BASIN

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.023 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.10"

Area (sf)	CN	Description
1,013	61	>75% Grass cover, Good, HSG B
2,617	98	Paved parking, HSG B
1,960	98	Paved parking, HSG A
5,590	91	Weighted Average
1,013		18.12% Pervious Area
4,577		81.88% Impervious Area

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

Summary for Subcatchment 8S: TRIBUTARY AREA TO STONE TRENCH

Runoff = 0.15 cfs @ 12.23 hrs, Volume= 0.018 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.10"

6092P - POST rev3

Type III 24-hr 2-year Rainfall=3.10"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 5

Area (sf)	CN	Description
3,549	61	>75% Grass cover, Good, HSG B
5,341	55	Woods, Good, HSG B
4,945	77	Woods, Good, HSG D
1,712	80	>75% Grass cover, Good, HSG D
15,547	66	Weighted Average
15,547		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	50	0.0700	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.5	90	0.1600	2.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.7	140	Total			

Summary for Pond 1P: SUBSURFACE INFILTRATION AREA

Inflow Area = 0.479 ac, 24.75% Impervious, Inflow Depth = 1.26" for 2-year event
 Inflow = 0.52 cfs @ 12.22 hrs, Volume= 0.050 af
 Outflow = 0.34 cfs @ 12.43 hrs, Volume= 0.050 af, Atten= 34%, Lag= 13.0 min
 Primary = 0.34 cfs @ 12.43 hrs, Volume= 0.050 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 329.49' @ 12.43 hrs Surf.Area= 1,065 sf Storage= 580 cf
 Flood Elev= 334.50' Surf.Area= 1,065 sf Storage= 1,512 cf

Plug-Flow detention time= 90.3 min calculated for 0.050 af (98% of inflow)
 Center-of-Mass det. time= 80.9 min (937.0 - 856.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	328.75'	738 cf	24.25'W x 43.92'L x 2.46'H Field A 2,618 cf Overall - 774 cf Embedded = 1,844 cf x 40.0% Voids
#2A	328.83'	774 cf	Cultec R-150XLHD x 28 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 7 rows
		1,512 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	328.83'	12.0" Round Culvert L= 67.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 328.83' / 324.15' S= 0.0699 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	330.50'	4.0' long Sharp Crested Rectangular Weir 2 End Contraction(s)
#3	Device 1	328.83'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	329.30'	12.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.34 cfs @ 12.43 hrs HW=329.49' TW=324.42' (Dynamic Tailwater)

- ↑1=Culvert (Passes 0.34 cfs of 1.51 cfs potential flow)
- ↑2=Sharp Crested Rectangular Weir(Controls 0.00 cfs)
- ↑3=Orifice/Grate (Orifice Controls 0.08 cfs @ 3.65 fps)
- ↑4=Orifice/Grate (Orifice Controls 0.26 cfs @ 1.39 fps)

Summary for Pond 2P: CB-3

Inflow Area = 1.498 ac, 17.41% Impervious, Inflow Depth = 0.70" for 2-year event
 Inflow = 0.55 cfs @ 12.39 hrs, Volume= 0.088 af
 Outflow = 0.55 cfs @ 12.39 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.55 cfs @ 12.39 hrs, Volume= 0.088 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 324.42' @ 12.39 hrs
 Flood Elev= 327.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	324.05'	12.0" Round Culvert L= 49.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 324.05' / 323.07' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.55 cfs @ 12.39 hrs HW=324.42' TW=323.43' (Dynamic Tailwater)

- ↑1=Culvert (Inlet Controls 0.55 cfs @ 2.07 fps)

Summary for Pond 3P: STONE INFILTRATION AREA

Inflow Area = 0.357 ac, 0.00% Impervious, Inflow Depth = 0.59" for 2-year event
 Inflow = 0.15 cfs @ 12.23 hrs, Volume= 0.018 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 334.46' @ 24.85 hrs Surf.Area= 780 sf Storage= 769 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	332.00'	1,014 cf	Custom Stage Data (Irregular) Listed below (Recalc) 2,535 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
332.00	780	195.0	0	0	780
335.25	780	195.0	2,535	2,535	1,414

Device	Routing	Invert	Outlet Devices
#1	Discarded	332.01'	2.410 in/hr Exfiltration over Surface area above 332.01' Conductivity to Groundwater Elevation = 329.90' Excluded Surface area = 780 sf
#2	Primary	335.00'	10.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=332.00' (Free Discharge)

↑1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=332.00' TW=324.05' (Dynamic Tailwater)

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

Summary for Pond 5P: EXISTING CB

Inflow Area = 1.627 ac, 22.49% Impervious, Inflow Depth = 0.82" for 2-year event
 Inflow = 0.77 cfs @ 12.11 hrs, Volume= 0.111 af
 Outflow = 0.77 cfs @ 12.11 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.77 cfs @ 12.11 hrs, Volume= 0.111 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2

Peak Elev= 323.48' @ 12.11 hrs

Flood Elev= 327.22'

Device	Routing	Invert	Outlet Devices
#1	Primary	322.97'	12.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 322.97' / 321.97' S= 0.0200 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

Primary OutFlow Max=0.76 cfs @ 12.11 hrs HW=323.47' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 0.76 cfs @ 2.83 fps)

Summary for Link 1L: DP-A

Inflow Area = 1.627 ac, 22.49% Impervious, Inflow Depth = 0.82" for 2-year event
 Inflow = 0.77 cfs @ 12.11 hrs, Volume= 0.111 af
 Primary = 0.77 cfs @ 12.11 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

6092P - POST rev3

Type III 24-hr 10-year Rainfall=4.60"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 8

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment2S: REMAININGPROJECT Runoff Area=11,042 sf 13.17% Impervious Runoff Depth=1.26"
Flow Length=147' Tc=8.9 min CN=63 Runoff=0.30 cfs 0.027 af

Subcatchment3S: OFFISTE AREA Runoff Area=17,826 sf 26.62% Impervious Runoff Depth=1.82"
Tc=6.0 min CN=71 Runoff=0.84 cfs 0.062 af

Subcatchment5S: TRIBUTARYAREA TO Runoff Area=20,859 sf 24.75% Impervious Runoff Depth=2.46"
Flow Length=216' Tc=15.0 min CN=79 Runoff=1.04 cfs 0.098 af

Subcatchment6S: AREA TRIBUTARY TO Runoff Area=5,590 sf 81.88% Impervious Runoff Depth=3.59"
Tc=6.0 min CN=91 Runoff=0.51 cfs 0.038 af

Subcatchment8S: TRIBUTARYAREA TO Runoff Area=15,547 sf 0.00% Impervious Runoff Depth=1.46"
Flow Length=140' Tc=13.7 min CN=66 Runoff=0.45 cfs 0.043 af

Pond 1P: SUBSURFACEINFILTRATIONAREA Peak Elev=329.79' Storage=810 cf Inflow=1.04 cfs 0.098 af
Outflow=0.82 cfs 0.097 af

Pond 2P: CB-3 Peak Elev=324.72' Inflow=1.56 cfs 0.208 af
12.0" Round Culvert n=0.013 L=49.0' S=0.0200 '/ Outflow=1.56 cfs 0.208 af

Pond 3P: STONE INFILTRATIONAREA Peak Elev=335.02' Storage=943 cf Inflow=0.45 cfs 0.043 af
Discarded=0.00 cfs 0.000 af Primary=0.09 cfs 0.022 af Outflow=0.09 cfs 0.022 af

Pond 5P: EXISTING CB Peak Elev=323.88' Inflow=2.03 cfs 0.246 af
12.0" Round Culvert n=0.025 L=50.0' S=0.0200 '/ Outflow=2.03 cfs 0.246 af

Link 1L: DP-A Inflow=2.03 cfs 0.246 af
Primary=2.03 cfs 0.246 af

Total Runoff Area = 1.627 ac Runoff Volume = 0.269 af Average Runoff Depth = 1.98"
77.51% Pervious = 1.261 ac 22.49% Impervious = 0.366 ac

6092P - POST rev3

Prepared by {enter your company name here}

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Type III 24-hr 10-year Rainfall=4.60"

Printed 8/26/2021

Page 9

Summary for Subcatchment 2S: REMAINING PROJECT AREA TRIBUTARY TO PRIEST LANE

Runoff = 0.30 cfs @ 12.14 hrs, Volume= 0.027 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
5,913	55	Woods, Good, HSG B
3,675	61	>75% Grass cover, Good, HSG B
1,454	98	Paved parking, HSG B
11,042	63	Weighted Average
9,588		86.83% Pervious Area
1,454		13.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.2160	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.4	37	0.1140	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	60	0.1180	6.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.9	147	Total			

Summary for Subcatchment 3S: OFFISTE AREA TRIBUTARY TO PROPOSED CATCH BASIN

Runoff = 0.84 cfs @ 12.10 hrs, Volume= 0.062 af, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
13,081	61	>75% Grass cover, Good, HSG B
4,745	98	Paved parking, HSG B
17,826	71	Weighted Average
13,081		73.38% Pervious Area
4,745		26.62% Impervious Area

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

Summary for Subcatchment 5S: TRIBUTARY AREA TO SUBSURFACE INFILTRATION

Runoff = 1.04 cfs @ 12.21 hrs, Volume= 0.098 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=4.60"

6092P - POST rev3

Type III 24-hr 10-year Rainfall=4.60"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 10

Area (sf)	CN	Description
1,562	98	Paved parking, HSG D
7,689	77	Woods, Good, HSG D
3,217	80	>75% Grass cover, Good, HSG D
3,600	98	Paved parking, HSG B
1,079	55	Woods, Good, HSG B
3,712	61	>75% Grass cover, Good, HSG B
20,859	79	Weighted Average
15,697		75.25% Pervious Area
5,162		24.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	50	0.0600	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.1	9	0.0670	1.29		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	17	0.0470	3.25		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.7	140	0.0240	3.14		Shallow Concentrated Flow, Paved Kv= 20.3 fps
15.0	216	Total			

Summary for Subcatchment 6S: AREA TRIBUTARY TO EXISTING CATCH BASIN

Runoff = 0.51 cfs @ 12.09 hrs, Volume= 0.038 af, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=4.60"

Area (sf)	CN	Description
1,013	61	>75% Grass cover, Good, HSG B
2,617	98	Paved parking, HSG B
1,960	98	Paved parking, HSG A
5,590	91	Weighted Average
1,013		18.12% Pervious Area
4,577		81.88% Impervious Area

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

Summary for Subcatchment 8S: TRIBUTARY AREA TO STONE TRENCH

Runoff = 0.45 cfs @ 12.21 hrs, Volume= 0.043 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=4.60"

6092P - POST rev3

Type III 24-hr 10-year Rainfall=4.60"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 11

Area (sf)	CN	Description
3,549	61	>75% Grass cover, Good, HSG B
5,341	55	Woods, Good, HSG B
4,945	77	Woods, Good, HSG D
1,712	80	>75% Grass cover, Good, HSG D
15,547	66	Weighted Average
15,547		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	50	0.0700	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.5	90	0.1600	2.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.7	140	Total			

Summary for Pond 1P: SUBSURFACE INFILTRATION AREA

Inflow Area = 0.479 ac, 24.75% Impervious, Inflow Depth = 2.46" for 10-year event
 Inflow = 1.04 cfs @ 12.21 hrs, Volume= 0.098 af
 Outflow = 0.82 cfs @ 12.34 hrs, Volume= 0.097 af, Atten= 21%, Lag= 7.7 min
 Primary = 0.82 cfs @ 12.34 hrs, Volume= 0.097 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 329.79' @ 12.34 hrs Surf.Area= 1,065 sf Storage= 810 cf
 Flood Elev= 334.50' Surf.Area= 1,065 sf Storage= 1,512 cf

Plug-Flow detention time= 63.9 min calculated for 0.097 af (99% of inflow)
 Center-of-Mass det. time= 58.8 min (895.4 - 836.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	328.75'	738 cf	24.25'W x 43.92'L x 2.46'H Field A 2,618 cf Overall - 774 cf Embedded = 1,844 cf x 40.0% Voids
#2A	328.83'	774 cf	Cultec R-150XLHD x 28 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 7 rows
		1,512 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	328.83'	12.0" Round Culvert L= 67.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 328.83' / 324.15' S= 0.0699 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	330.50'	4.0' long Sharp Crested Rectangular Weir 2 End Contraction(s)
#3	Device 1	328.83'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	329.30'	12.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.82 cfs @ 12.34 hrs HW=329.79' TW=324.67' (Dynamic Tailwater)

- ↑1=Culvert (Passes 0.82 cfs of 2.58 cfs potential flow)
- ↑2=Sharp Crested Rectangular Weir(Controls 0.00 cfs)
- ↑3=Orifice/Grate (Orifice Controls 0.10 cfs @ 4.50 fps)
- ↑4=Orifice/Grate (Orifice Controls 0.72 cfs @ 2.88 fps)

Summary for Pond 2P: CB-3

Inflow Area = 1.498 ac, 17.41% Impervious, Inflow Depth = 1.67" for 10-year event
 Inflow = 1.56 cfs @ 12.15 hrs, Volume= 0.208 af
 Outflow = 1.56 cfs @ 12.15 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.56 cfs @ 12.15 hrs, Volume= 0.208 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 324.72' @ 12.15 hrs
 Flood Elev= 327.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	324.05'	12.0" Round Culvert L= 49.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 324.05' / 323.07' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.56 cfs @ 12.15 hrs HW=324.72' TW=323.85' (Dynamic Tailwater)

- ↑1=Culvert (Inlet Controls 1.56 cfs @ 2.79 fps)

Summary for Pond 3P: STONE INFILTRATION AREA

Inflow Area = 0.357 ac, 0.00% Impervious, Inflow Depth = 1.46" for 10-year event
 Inflow = 0.45 cfs @ 12.21 hrs, Volume= 0.043 af
 Outflow = 0.09 cfs @ 13.06 hrs, Volume= 0.022 af, Atten= 80%, Lag= 51.3 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.09 cfs @ 13.06 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 335.02' @ 13.06 hrs Surf.Area= 780 sf Storage= 943 cf

Plug-Flow detention time= 262.2 min calculated for 0.022 af (51% of inflow)
 Center-of-Mass det. time= 131.3 min (1,001.7 - 870.5)

Volume	Invert	Avail.Storage	Storage Description
#1	332.00'	1,014 cf	Custom Stage Data (Irregular) Listed below (Recalc) 2,535 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
332.00	780	195.0	0	0	780
335.25	780	195.0	2,535	2,535	1,414

Device	Routing	Invert	Outlet Devices
#1	Discarded	332.01'	2.410 in/hr Exfiltration over Surface area above 332.01' Conductivity to Groundwater Elevation = 329.90' Excluded Surface area = 780 sf
#2	Primary	335.00'	10.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=332.00' (Free Discharge)

↑1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.08 cfs @ 13.06 hrs HW=335.02' TW=324.37' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Weir Controls 0.08 cfs @ 0.39 fps)

Summary for Pond 5P: EXISTING CB

Inflow Area = 1.627 ac, 22.49% Impervious, Inflow Depth = 1.82" for 10-year event
 Inflow = 2.03 cfs @ 12.12 hrs, Volume= 0.246 af
 Outflow = 2.03 cfs @ 12.12 hrs, Volume= 0.246 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.03 cfs @ 12.12 hrs, Volume= 0.246 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2

Peak Elev= 323.88' @ 12.12 hrs

Flood Elev= 327.22'

Device	Routing	Invert	Outlet Devices
#1	Primary	322.97'	12.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 322.97' / 321.97' S= 0.0200 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

Primary OutFlow Max=1.98 cfs @ 12.12 hrs HW=323.86' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 1.98 cfs @ 3.55 fps)

Summary for Link 1L: DP-A

Inflow Area = 1.627 ac, 22.49% Impervious, Inflow Depth = 1.82" for 10-year event
 Inflow = 2.03 cfs @ 12.12 hrs, Volume= 0.246 af
 Primary = 2.03 cfs @ 12.12 hrs, Volume= 0.246 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

6092P - POST rev3

Type III 24-hr 25-year Rainfall=5.40"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 14

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment2S: REMAININGPROJECT Runoff Area=11,042 sf 13.17% Impervious Runoff Depth=1.77"
Flow Length=147' Tc=8.9 min CN=63 Runoff=0.44 cfs 0.037 af

Subcatchment3S: OFFISTE AREA Runoff Area=17,826 sf 26.62% Impervious Runoff Depth=2.42"
Tc=6.0 min CN=71 Runoff=1.13 cfs 0.083 af

Subcatchment5S: TRIBUTARYAREA TO Runoff Area=20,859 sf 24.75% Impervious Runoff Depth=3.15"
Flow Length=216' Tc=15.0 min CN=79 Runoff=1.33 cfs 0.126 af

Subcatchment6S: AREA TRIBUTARY TO Runoff Area=5,590 sf 81.88% Impervious Runoff Depth=4.37"
Tc=6.0 min CN=91 Runoff=0.61 cfs 0.047 af

Subcatchment8S: TRIBUTARYAREA TO Runoff Area=15,547 sf 0.00% Impervious Runoff Depth=2.01"
Flow Length=140' Tc=13.7 min CN=66 Runoff=0.63 cfs 0.060 af

Pond 1P: SUBSURFACEINFILTRATIONAREA Peak Elev=330.01' Storage=961 cf Inflow=1.33 cfs 0.126 af
Outflow=1.03 cfs 0.125 af

Pond 2P: CB-3 Peak Elev=324.90' Inflow=2.19 cfs 0.283 af
12.0" Round Culvert n=0.013 L=49.0' S=0.0200 '/' Outflow=2.19 cfs 0.283 af

Pond 3P: STONE INFILTRATIONAREA Peak Elev=335.06' Storage=955 cf Inflow=0.63 cfs 0.060 af
Discarded=0.00 cfs 0.000 af Primary=0.42 cfs 0.038 af Outflow=0.42 cfs 0.038 af

Pond 5P: EXISTING CB Peak Elev=324.17' Inflow=2.77 cfs 0.330 af
12.0" Round Culvert n=0.025 L=50.0' S=0.0200 '/' Outflow=2.77 cfs 0.330 af

Link 1L: DP-A Inflow=2.77 cfs 0.330 af
Primary=2.77 cfs 0.330 af

Total Runoff Area = 1.627 ac Runoff Volume = 0.352 af Average Runoff Depth = 2.60"
77.51% Pervious = 1.261 ac 22.49% Impervious = 0.366 ac

Summary for Subcatchment 2S: REMAINING PROJECT AREA TRIBUTARY TO PRIEST LANE

Runoff = 0.44 cfs @ 12.14 hrs, Volume= 0.037 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
5,913	55	Woods, Good, HSG B
3,675	61	>75% Grass cover, Good, HSG B
1,454	98	Paved parking, HSG B
11,042	63	Weighted Average
9,588		86.83% Pervious Area
1,454		13.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.2160	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.4	37	0.1140	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	60	0.1180	6.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.9	147	Total			

Summary for Subcatchment 3S: OFFISTE AREA TRIBUTARY TO PROPOSED CATCH BASIN

Runoff = 1.13 cfs @ 12.10 hrs, Volume= 0.083 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
13,081	61	>75% Grass cover, Good, HSG B
4,745	98	Paved parking, HSG B
17,826	71	Weighted Average
13,081		73.38% Pervious Area
4,745		26.62% Impervious Area

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

Summary for Subcatchment 5S: TRIBUTARY AREA TO SUBSURFACE INFILTRATION

Runoff = 1.33 cfs @ 12.21 hrs, Volume= 0.126 af, Depth= 3.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=5.40"

6092P - POST rev3

Type III 24-hr 25-year Rainfall=5.40"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 16

Area (sf)	CN	Description
1,562	98	Paved parking, HSG D
7,689	77	Woods, Good, HSG D
3,217	80	>75% Grass cover, Good, HSG D
3,600	98	Paved parking, HSG B
1,079	55	Woods, Good, HSG B
3,712	61	>75% Grass cover, Good, HSG B
20,859	79	Weighted Average
15,697		75.25% Pervious Area
5,162		24.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	50	0.0600	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.1	9	0.0670	1.29		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	17	0.0470	3.25		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.7	140	0.0240	3.14		Shallow Concentrated Flow, Paved Kv= 20.3 fps
15.0	216	Total			

Summary for Subcatchment 6S: AREA TRIBUTARY TO EXISTING CATCH BASIN

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.047 af, Depth= 4.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=5.40"

Area (sf)	CN	Description
1,013	61	>75% Grass cover, Good, HSG B
2,617	98	Paved parking, HSG B
1,960	98	Paved parking, HSG A
5,590	91	Weighted Average
1,013		18.12% Pervious Area
4,577		81.88% Impervious Area

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

Summary for Subcatchment 8S: TRIBUTARY AREA TO STONE TRENCH

Runoff = 0.63 cfs @ 12.20 hrs, Volume= 0.060 af, Depth= 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=5.40"

6092P - POST rev3

Type III 24-hr 25-year Rainfall=5.40"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 17

Area (sf)	CN	Description
3,549	61	>75% Grass cover, Good, HSG B
5,341	55	Woods, Good, HSG B
4,945	77	Woods, Good, HSG D
1,712	80	>75% Grass cover, Good, HSG D
15,547	66	Weighted Average
15,547		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	50	0.0700	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.5	90	0.1600	2.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.7	140	Total			

Summary for Pond 1P: SUBSURFACE INFILTRATION AREA

Inflow Area = 0.479 ac, 24.75% Impervious, Inflow Depth = 3.15" for 25-year event
 Inflow = 1.33 cfs @ 12.21 hrs, Volume= 0.126 af
 Outflow = 1.03 cfs @ 12.34 hrs, Volume= 0.125 af, Atten= 23%, Lag= 8.2 min
 Primary = 1.03 cfs @ 12.34 hrs, Volume= 0.125 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 330.01' @ 12.34 hrs Surf.Area= 1,065 sf Storage= 961 cf
 Flood Elev= 334.50' Surf.Area= 1,065 sf Storage= 1,512 cf

Plug-Flow detention time= 57.0 min calculated for 0.125 af (99% of inflow)
 Center-of-Mass det. time= 52.8 min (882.3 - 829.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	328.75'	738 cf	24.25'W x 43.92'L x 2.46'H Field A 2,618 cf Overall - 774 cf Embedded = 1,844 cf x 40.0% Voids
#2A	328.83'	774 cf	Cultec R-150XLHD x 28 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 7 rows
		1,512 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	328.83'	12.0" Round Culvert L= 67.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 328.83' / 324.15' S= 0.0699 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	330.50'	4.0' long Sharp Crested Rectangular Weir 2 End Contraction(s)
#3	Device 1	328.83'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	329.30'	12.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.02 cfs @ 12.34 hrs HW=330.00' TW=324.77' (Dynamic Tailwater)

- ↑1=Culvert (Passes 1.02 cfs of 3.11 cfs potential flow)
- ↑2=Sharp Crested Rectangular Weir(Controls 0.00 cfs)
- ↑3=Orifice/Grate (Orifice Controls 0.11 cfs @ 5.03 fps)
- ↑4=Orifice/Grate (Orifice Controls 0.91 cfs @ 3.66 fps)

Summary for Pond 2P: CB-3

Inflow Area = 1.498 ac, 17.41% Impervious, Inflow Depth = 2.27" for 25-year event
 Inflow = 2.19 cfs @ 12.12 hrs, Volume= 0.283 af
 Outflow = 2.19 cfs @ 12.12 hrs, Volume= 0.283 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.19 cfs @ 12.12 hrs, Volume= 0.283 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 324.90' @ 12.12 hrs
 Flood Elev= 327.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	324.05'	12.0" Round Culvert L= 49.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 324.05' / 323.07' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.15 cfs @ 12.12 hrs HW=324.88' TW=324.13' (Dynamic Tailwater)

- ↑1=Culvert (Outlet Controls 2.15 cfs @ 4.16 fps)

Summary for Pond 3P: STONE INFILTRATION AREA

Inflow Area = 0.357 ac, 0.00% Impervious, Inflow Depth = 2.01" for 25-year event
 Inflow = 0.63 cfs @ 12.20 hrs, Volume= 0.060 af
 Outflow = 0.42 cfs @ 12.47 hrs, Volume= 0.038 af, Atten= 33%, Lag= 15.9 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.42 cfs @ 12.47 hrs, Volume= 0.038 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 335.06' @ 12.45 hrs Surf.Area= 780 sf Storage= 955 cf

Plug-Flow detention time= 189.8 min calculated for 0.038 af (64% of inflow)
 Center-of-Mass det. time= 77.7 min (938.4 - 860.8)

Volume	Invert	Avail.Storage	Storage Description
#1	332.00'	1,014 cf	Custom Stage Data (Irregular) Listed below (Recalc) 2,535 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
332.00	780	195.0	0	0	780
335.25	780	195.0	2,535	2,535	1,414

6092P - POST rev3

Type III 24-hr 25-year Rainfall=5.40"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 19

Device	Routing	Invert	Outlet Devices
#1	Discarded	332.01'	2.410 in/hr Exfiltration over Surface area above 332.01' Conductivity to Groundwater Elevation = 329.90' Excluded Surface area = 780 sf
#2	Primary	335.00'	10.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=332.00' (Free Discharge)

↑1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.37 cfs @ 12.47 hrs HW=335.06' TW=324.79' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Weir Controls 0.37 cfs @ 0.64 fps)

Summary for Pond 5P: EXISTING CB

Inflow Area = 1.627 ac, 22.49% Impervious, Inflow Depth = 2.43" for 25-year event
 Inflow = 2.77 cfs @ 12.11 hrs, Volume= 0.330 af
 Outflow = 2.77 cfs @ 12.11 hrs, Volume= 0.330 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.77 cfs @ 12.11 hrs, Volume= 0.330 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2

Peak Elev= 324.17' @ 12.11 hrs

Flood Elev= 327.22'

Device	Routing	Invert	Outlet Devices
#1	Primary	322.97'	12.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 322.97' / 321.97' S= 0.0200 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

Primary OutFlow Max=2.73 cfs @ 12.11 hrs HW=324.15' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 2.73 cfs @ 3.71 fps)

Summary for Link 1L: DP-A

Inflow Area = 1.627 ac, 22.49% Impervious, Inflow Depth = 2.43" for 25-year event
 Inflow = 2.77 cfs @ 12.11 hrs, Volume= 0.330 af
 Primary = 2.77 cfs @ 12.11 hrs, Volume= 0.330 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

6092P - POST rev3

Type III 24-hr 100-year Rainfall=7.00"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 20

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment2S: REMAININGPROJECT Runoff Area=11,042 sf 13.17% Impervious Runoff Depth=2.90"
Flow Length=147' Tc=8.9 min CN=63 Runoff=0.75 cfs 0.061 af

Subcatchment3S: OFFISTE AREA Runoff Area=17,826 sf 26.62% Impervious Runoff Depth=3.72"
Tc=6.0 min CN=71 Runoff=1.75 cfs 0.127 af

Subcatchment5S: TRIBUTARYAREA TO Runoff Area=20,859 sf 24.75% Impervious Runoff Depth=4.58"
Flow Length=216' Tc=15.0 min CN=79 Runoff=1.93 cfs 0.183 af

Subcatchment6S: AREA TRIBUTARY TO Runoff Area=5,590 sf 81.88% Impervious Runoff Depth=5.94"
Tc=6.0 min CN=91 Runoff=0.82 cfs 0.064 af

Subcatchment8S: TRIBUTARYAREA TO Runoff Area=15,547 sf 0.00% Impervious Runoff Depth=3.20"
Flow Length=140' Tc=13.7 min CN=66 Runoff=1.03 cfs 0.095 af

Pond 1P: SUBSURFACEINFILTRATION Peak Elev=330.57' Storage=1,241 cf Inflow=1.93 cfs 0.183 af
Outflow=1.66 cfs 0.182 af

Pond 2P: CB-3 Peak Elev=327.50' Inflow=3.89 cfs 0.444 af
12.0" Round Culvert n=0.013 L=49.0' S=0.0200 '/ Outflow=3.89 cfs 0.444 af

Pond 3P: STONE INFILTRATIONAREA Peak Elev=335.12' Storage=973 cf Inflow=1.03 cfs 0.095 af
Discarded=0.00 cfs 0.000 af Primary=1.10 cfs 0.074 af Outflow=1.10 cfs 0.074 af

Pond 5P: EXISTING CB Peak Elev=326.35' Inflow=4.29 cfs 0.508 af
12.0" Round Culvert n=0.025 L=50.0' S=0.0200 '/ Outflow=4.29 cfs 0.508 af

Link 1L: DP-A Inflow=4.29 cfs 0.508 af
Primary=4.29 cfs 0.508 af

Total Runoff Area = 1.627 ac Runoff Volume = 0.530 af Average Runoff Depth = 3.91"
77.51% Pervious = 1.261 ac 22.49% Impervious = 0.366 ac

Summary for Subcatchment 2S: REMAINING PROJECT AREA TRIBUTARY TO PRIEST LANE

Runoff = 0.75 cfs @ 12.13 hrs, Volume= 0.061 af, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.00"

Area (sf)	CN	Description
5,913	55	Woods, Good, HSG B
3,675	61	>75% Grass cover, Good, HSG B
1,454	98	Paved parking, HSG B
11,042	63	Weighted Average
9,588		86.83% Pervious Area
1,454		13.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.2160	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.4	37	0.1140	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	60	0.1180	6.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.9	147	Total			

Summary for Subcatchment 3S: OFFISTE AREA TRIBUTARY TO PROPOSED CATCH BASIN

Runoff = 1.75 cfs @ 12.09 hrs, Volume= 0.127 af, Depth= 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.00"

Area (sf)	CN	Description
13,081	61	>75% Grass cover, Good, HSG B
4,745	98	Paved parking, HSG B
17,826	71	Weighted Average
13,081		73.38% Pervious Area
4,745		26.62% Impervious Area

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

Summary for Subcatchment 5S: TRIBUTARY AREA TO SUBSURFACE INFILTRATION

Runoff = 1.93 cfs @ 12.21 hrs, Volume= 0.183 af, Depth= 4.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.00"

6092P - POST rev3

Type III 24-hr 100-year Rainfall=7.00"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 22

Area (sf)	CN	Description
1,562	98	Paved parking, HSG D
7,689	77	Woods, Good, HSG D
3,217	80	>75% Grass cover, Good, HSG D
3,600	98	Paved parking, HSG B
1,079	55	Woods, Good, HSG B
3,712	61	>75% Grass cover, Good, HSG B
20,859	79	Weighted Average
15,697		75.25% Pervious Area
5,162		24.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	50	0.0600	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.1	9	0.0670	1.29		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	17	0.0470	3.25		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.7	140	0.0240	3.14		Shallow Concentrated Flow, Paved Kv= 20.3 fps
15.0	216	Total			

Summary for Subcatchment 6S: AREA TRIBUTARY TO EXISTING CATCH BASIN

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.064 af, Depth= 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.00"

Area (sf)	CN	Description
1,013	61	>75% Grass cover, Good, HSG B
2,617	98	Paved parking, HSG B
1,960	98	Paved parking, HSG A
5,590	91	Weighted Average
1,013		18.12% Pervious Area
4,577		81.88% Impervious Area

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

Summary for Subcatchment 8S: TRIBUTARY AREA TO STONE TRENCH

Runoff = 1.03 cfs @ 12.20 hrs, Volume= 0.095 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.00"

6092P - POST rev3

Type III 24-hr 100-year Rainfall=7.00"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 23

Area (sf)	CN	Description
3,549	61	>75% Grass cover, Good, HSG B
5,341	55	Woods, Good, HSG B
4,945	77	Woods, Good, HSG D
1,712	80	>75% Grass cover, Good, HSG D
15,547	66	Weighted Average
15,547		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	50	0.0700	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.10"
0.5	90	0.1600	2.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.7	140	Total			

Summary for Pond 1P: SUBSURFACE INFILTRATION AREA

Inflow Area = 0.479 ac, 24.75% Impervious, Inflow Depth = 4.58" for 100-year event
 Inflow = 1.93 cfs @ 12.21 hrs, Volume= 0.183 af
 Outflow = 1.66 cfs @ 12.31 hrs, Volume= 0.182 af, Atten= 14%, Lag= 6.2 min
 Primary = 1.66 cfs @ 12.31 hrs, Volume= 0.182 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 330.57' @ 12.32 hrs Surf.Area= 1,065 sf Storage= 1,241 cf
 Flood Elev= 334.50' Surf.Area= 1,065 sf Storage= 1,512 cf

Plug-Flow detention time= 48.6 min calculated for 0.182 af (100% of inflow)
 Center-of-Mass det. time= 45.6 min (864.3 - 818.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	328.75'	738 cf	24.25'W x 43.92'L x 2.46'H Field A 2,618 cf Overall - 774 cf Embedded = 1,844 cf x 40.0% Voids
#2A	328.83'	774 cf	Cultec R-150XLHD x 28 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 7 rows
		1,512 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	328.83'	12.0" Round Culvert L= 67.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 328.83' / 324.15' S= 0.0699 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	330.50'	4.0' long Sharp Crested Rectangular Weir 2 End Contraction(s)
#3	Device 1	328.83'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	329.30'	12.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.62 cfs @ 12.31 hrs HW=330.56' TW=326.87' (Dynamic Tailwater)

- 1=Culvert (Passes 1.62 cfs of 4.20 cfs potential flow)
- 2=Sharp Crested Rectangular Weir (Weir Controls 0.21 cfs @ 0.82 fps)
- 3=Orifice/Grate (Orifice Controls 0.13 cfs @ 6.18 fps)
- 4=Orifice/Grate (Orifice Controls 1.28 cfs @ 5.13 fps)

Summary for Pond 2P: CB-3

Inflow Area = 1.498 ac, 17.41% Impervious, Inflow Depth = 3.56" for 100-year event
 Inflow = 3.89 cfs @ 12.25 hrs, Volume= 0.444 af
 Outflow = 3.89 cfs @ 12.25 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.89 cfs @ 12.25 hrs, Volume= 0.444 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 327.50' @ 12.24 hrs
 Flood Elev= 327.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	324.05'	12.0" Round Culvert L= 49.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 324.05' / 323.07' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.88 cfs @ 12.25 hrs HW=327.48' TW=326.33' (Dynamic Tailwater)

- 1=Culvert (Outlet Controls 3.88 cfs @ 4.94 fps)

Summary for Pond 3P: STONE INFILTRATION AREA

Inflow Area = 0.357 ac, 0.00% Impervious, Inflow Depth = 3.20" for 100-year event
 Inflow = 1.03 cfs @ 12.20 hrs, Volume= 0.095 af
 Outflow = 1.10 cfs @ 12.25 hrs, Volume= 0.074 af, Atten= 0%, Lag= 3.1 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 1.10 cfs @ 12.25 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 335.12' @ 12.25 hrs Surf.Area= 780 sf Storage= 973 cf

Plug-Flow detention time= 127.0 min calculated for 0.074 af (77% of inflow)
 Center-of-Mass det. time= 41.9 min (888.8 - 846.9)

Volume	Invert	Avail.Storage	Storage Description
#1	332.00'	1,014 cf	Custom Stage Data (Irregular) Listed below (Recalc) 2,535 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
332.00	780	195.0	0	0	780
335.25	780	195.0	2,535	2,535	1,414

6092P - POST rev3

Type III 24-hr 100-year Rainfall=7.00"

Prepared by {enter your company name here}

Printed 8/26/2021

HydroCAD® 10.10-3a s/n 03590 © 2020 HydroCAD Software Solutions LLC

Page 25

Device	Routing	Invert	Outlet Devices
#1	Discarded	332.01'	2.410 in/hr Exfiltration over Surface area above 332.01' Conductivity to Groundwater Elevation = 329.90' Excluded Surface area = 780 sf
#2	Primary	335.00'	10.0' long x 50.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=332.00' (Free Discharge)

↑1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=1.10 cfs @ 12.25 hrs HW=335.12' TW=327.48' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Weir Controls 1.10 cfs @ 0.92 fps)

Summary for Pond 5P: EXISTING CB

Inflow Area = 1.627 ac, 22.49% Impervious, Inflow Depth = 3.75" for 100-year event
 Inflow = 4.29 cfs @ 12.24 hrs, Volume= 0.508 af
 Outflow = 4.29 cfs @ 12.24 hrs, Volume= 0.508 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.29 cfs @ 12.24 hrs, Volume= 0.508 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2

Peak Elev= 326.35' @ 12.24 hrs

Flood Elev= 327.22'

Device	Routing	Invert	Outlet Devices
#1	Primary	322.97'	12.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 322.97' / 321.97' S= 0.0200 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf

Primary OutFlow Max=4.26 cfs @ 12.24 hrs HW=326.30' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 4.26 cfs @ 5.42 fps)

Summary for Link 1L: DP-A

Inflow Area = 1.627 ac, 22.49% Impervious, Inflow Depth = 3.75" for 100-year event
 Inflow = 4.29 cfs @ 12.24 hrs, Volume= 0.508 af
 Primary = 4.29 cfs @ 12.24 hrs, Volume= 0.508 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs