



Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 2-YR Rainfall=3.41"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 2

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

Subcatchment 1S: SUBCAT1 Runoff Area=2,268 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=96' Tc=6.7 min CN=31 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: DRIVEWAY Runoff Area=6,900 sf 0.00% Impervious Runoff Depth=1.30"
Tc=6.0 min CN=76 Runoff=0.23 cfs 0.017 af

Subcatchment 2SR: 2SR Runoff Area=2,556 sf 100.00% Impervious Runoff Depth=3.18"
Tc=6.0 min CN=98 Runoff=0.19 cfs 0.016 af

Subcatchment 2SRG: 2SR1 Runoff Area=717 sf 100.00% Impervious Runoff Depth=3.18"
Tc=6.0 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment 4S: SUBCAT2 Runoff Area=126,055 sf 5.09% Impervious Runoff Depth=0.00"
Flow Length=300' Tc=9.8 min CN=38 Runoff=0.00 cfs 0.000 af

Reach DP1: OFFSITE DISCHARGE Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP2: WETLANDS Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 7P: INFILTRATION CHAMBER SYSTEM Peak Elev=112.96' Storage=216 cf Inflow=0.19 cfs 0.016 af
Discarded=0.02 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.016 af

Pond 8P: STONE DIAPHRAM Peak Elev=110.18' Storage=204 cf Inflow=0.23 cfs 0.017 af
Discarded=0.04 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.017 af

Pond 9P: INFILTRATION CHAMBER SYSTEM 2 Peak Elev=104.04' Storage=45 cf Inflow=0.05 cfs 0.004 af
Discarded=0.01 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.004 af

Total Runoff Area = 3.179 ac Runoff Volume = 0.037 af Average Runoff Depth = 0.14"
93.00% Pervious = 2.957 ac 7.00% Impervious = 0.222 ac

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 2-YR Rainfall=3.41"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 3

Summary for Subcatchment 1S: SUBCAT1

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach DP1 : OFFSITE DISCHARGE

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-YR Rainfall=3.41"

Area (sf)	CN	Description
1,988	30	Woods, Good, HSG A
280	39	>75% Grass cover, Good, HSG A
2,268	31	Weighted Average
2,268		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.41"
0.4	46	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.7	96	Total			

Summary for Subcatchment 2S: DRIVEWAY

Runoff = 0.23 cfs @ 12.10 hrs, Volume= 0.017 af, Depth= 1.30"
 Routed to Pond 8P : STONE DIAPHRAM

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-YR Rainfall=3.41"

Area (sf)	CN	Description
6,900	76	Gravel roads, HSG A
6,900		100.00% Pervious Area

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

Summary for Subcatchment 2SR: 2SR

Runoff = 0.19 cfs @ 12.09 hrs, Volume= 0.016 af, Depth= 3.18"
 Routed to Pond 7P : INFILTRATION CHAMBER SYSTEM 1

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-YR Rainfall=3.41"

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 2-YR Rainfall=3.41"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 4

Area (sf)	CN	Description
* 2,556	98	Roofs, HSG A
2,556		100.00% Impervious Area

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

Summary for Subcatchment 2SRG: 2SR1

Runoff = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af, Depth= 3.18"
 Routed to Pond 9P : INFILTRATION CHAMBER SYSTEM 2

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-YR Rainfall=3.41"

Area (sf)	CN	Description
717	98	Roofs, HSG A
717		100.00% Impervious Area

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

Summary for Subcatchment 4S: SUBCAT2

Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach DP2 : WETLANDS

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-YR Rainfall=3.41"

Area (sf)	CN	Description
70,840	30	Woods, Good, HSG A
* 2,020	98	Walkway/Patio, HSG A
37,158	39	>75% Grass cover, Good, HSG A
4,704	76	Gravel roads, HSG A
3,416	98	Roofs, HSG A
* 980	98	Walkway/Patio/Deck, HSG A
6,937	39	>75% Grass cover, Good, HSG A
126,055	38	Weighted Average
119,639		94.91% Pervious Area
6,416		5.09% Impervious Area

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 2-YR Rainfall=3.41"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 5

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		Sheet Flow, GRASS Grass: Short n= 0.150 P2= 3.41"
1.0	120	0.0750	1.92		Shallow Concentrated Flow, GRASS Short Grass Pasture Kv= 7.0 fps
1.6	130	0.0750	1.37		Shallow Concentrated Flow, WOODS Woodland Kv= 5.0 fps
9.8	300	Total			

Summary for Reach DP1: OFFSITE DISCHARGE

Inflow Area = 0.052 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-YR event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Reach DP2: WETLANDS

Inflow Area = 3.127 ac, 7.11% Impervious, Inflow Depth = 0.00" for 2-YR event
 Inflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Pond 7P: INFILTRATION CHAMBER SYSTEM 1

Inflow Area = 0.059 ac, 100.00% Impervious, Inflow Depth = 3.18" for 2-YR event
 Inflow = 0.19 cfs @ 12.09 hrs, Volume= 0.016 af
 Outflow = 0.02 cfs @ 11.60 hrs, Volume= 0.016 af, Atten= 88%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 11.60 hrs, Volume= 0.016 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routed to Reach DP2 : WETLANDS

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 112.96' @ 12.71 hrs Surf.Area= 393 sf Storage= 216 cf

Plug-Flow detention time= 64.3 min calculated for 0.016 af (100% of inflow)
 Center-of-Mass det. time= 64.3 min (819.4 - 755.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	112.00'	385 cf	15.75'W x 24.98'L x 3.50'H Field A 1,377 cf Overall - 413 cf Embedded = 963 cf x 40.0% Voids
#2A	112.50'	413 cf	ADS_StormTech SC-740 +Cap x 9 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 9 Chambers in 3 Rows
		799 cf	Total Available Storage

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 2-YR Rainfall=3.41"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 6

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	112.00'	2.410 in/hr Exfiltration over Surface area
#2	Primary	115.00'	4.0" Horiz. Orifice/Grate X 3 rows C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 11.60 hrs HW=112.04' (Free Discharge)
 ↑1=**Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=112.00' (Free Discharge)
 ↑2=**Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 8P: STONE DIAPHRAM

Inflow Area = 0.158 ac, 0.00% Impervious, Inflow Depth = 1.30" for 2-YR event
 Inflow = 0.23 cfs @ 12.10 hrs, Volume= 0.017 af
 Outflow = 0.04 cfs @ 11.85 hrs, Volume= 0.017 af, Atten= 82%, Lag= 0.0 min
 Discarded = 0.04 cfs @ 11.85 hrs, Volume= 0.017 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach DP2 : WETLANDS

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 110.18' @ 12.61 hrs Surf.Area= 750 sf Storage= 204 cf

Plug-Flow detention time= 33.8 min calculated for 0.017 af (100% of inflow)
 Center-of-Mass det. time= 33.5 min (885.5 - 851.9)

Volume	Invert	Avail.Storage	Storage Description
#1	109.50'	750 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 1,875 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
109.50	750	0	0
110.00	750	375	375
111.00	750	750	1,125
112.00	750	750	1,875

Device	Routing	Invert	Outlet Devices
#1	Primary	111.90'	375.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	109.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 11.85 hrs HW=109.53' (Free Discharge)
 ↑2=**Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=109.50' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 9P: INFILTRATION CHAMBER SYSTEM 2

Inflow Area = 0.016 ac, 100.00% Impervious, Inflow Depth = 3.18" for 2-YR event
 Inflow = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af
 Outflow = 0.01 cfs @ 11.75 hrs, Volume= 0.004 af, Atten= 79%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 11.75 hrs, Volume= 0.004 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach DP2 : WETLANDS

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 104.04' @ 12.51 hrs Surf.Area= 196 sf Storage= 45 cf

Plug-Flow detention time= 22.8 min calculated for 0.004 af (100% of inflow)
 Center-of-Mass det. time= 22.8 min (777.8 - 755.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	103.50'	201 cf	11.00'W x 17.86'L x 3.50'H Field A 687 cf Overall - 184 cf Embedded = 504 cf x 40.0% Voids
#2A	104.00'	184 cf	ADS_StormTech SC-740 +Cap x 4 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 4 Chambers in 2 Rows
		385 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	106.00'	4.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	103.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 11.75 hrs HW=103.54' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=103.50' (Free Discharge)
 ↑**1=Orifice/Grate** (Controls 0.00 cfs)

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 10-YR Rainfall=5.22"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 8

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

Subcatchment 1S: SUBCAT1 Runoff Area=2,268 sf 0.00% Impervious Runoff Depth=0.03"
Flow Length=96' Tc=6.7 min CN=31 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: DRIVEWAY Runoff Area=6,900 sf 0.00% Impervious Runoff Depth=2.72"
Tc=6.0 min CN=76 Runoff=0.49 cfs 0.036 af

Subcatchment 2SR: 2SR Runoff Area=2,556 sf 100.00% Impervious Runoff Depth=4.98"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.024 af

Subcatchment 2SRG: 2SR1 Runoff Area=717 sf 100.00% Impervious Runoff Depth=4.98"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment 4S: SUBCAT2 Runoff Area=126,055 sf 5.09% Impervious Runoff Depth=0.21"
Flow Length=300' Tc=9.8 min CN=38 Runoff=0.11 cfs 0.051 af

Reach DP1: OFFSITE DISCHARGE Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP2: WETLANDS Inflow=0.11 cfs 0.051 af
Outflow=0.11 cfs 0.051 af

Pond 7P: INFILTRATION CHAMBER SYSTEM Peak Elev=113.60' Storage=399 cf Inflow=0.29 cfs 0.024 af
Discarded=0.02 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.024 af

Pond 8P: STONE DIAPHRAM Peak Elev=111.58' Storage=625 cf Inflow=0.49 cfs 0.036 af
Discarded=0.04 cfs 0.036 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.036 af

Pond 9P: INFILTRATION CHAMBER SYSTEM 2 Peak Elev=104.34' Storage=88 cf Inflow=0.08 cfs 0.007 af
Discarded=0.01 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.007 af

Total Runoff Area = 3.179 ac Runoff Volume = 0.118 af Average Runoff Depth = 0.44"
93.00% Pervious = 2.957 ac 7.00% Impervious = 0.222 ac

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 10-YR Rainfall=5.22"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 9

Summary for Subcatchment 1S: SUBCAT1

Runoff = 0.00 cfs @ 21.21 hrs, Volume= 0.000 af, Depth= 0.03"
Routed to Reach DP1 : OFFSITE DISCHARGE

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-YR Rainfall=5.22"

Area (sf)	CN	Description
1,988	30	Woods, Good, HSG A
280	39	>75% Grass cover, Good, HSG A
2,268	31	Weighted Average
2,268		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.41"
0.4	46	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.7	96	Total			

Summary for Subcatchment 2S: DRIVEWAY

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 0.036 af, Depth= 2.72"
Routed to Pond 8P : STONE DIAPHRAM

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-YR Rainfall=5.22"

Area (sf)	CN	Description
6,900	76	Gravel roads, HSG A
6,900		100.00% Pervious Area

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

Summary for Subcatchment 2SR: 2SR

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 0.024 af, Depth= 4.98"
Routed to Pond 7P : INFILTRATION CHAMBER SYSTEM 1

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-YR Rainfall=5.22"

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 10-YR Rainfall=5.22"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 10

Area (sf)	CN	Description
* 2,556	98	Roofs, HSG A
2,556		100.00% Impervious Area

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

Summary for Subcatchment 2SRG: 2SR1

Runoff = 0.08 cfs @ 12.09 hrs, Volume= 0.007 af, Depth= 4.98"
 Routed to Pond 9P : INFILTRATION CHAMBER SYSTEM 2

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-YR Rainfall=5.22"

Area (sf)	CN	Description
717	98	Roofs, HSG A
717		100.00% Impervious Area

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

Summary for Subcatchment 4S: SUBCAT2

Runoff = 0.11 cfs @ 12.54 hrs, Volume= 0.051 af, Depth= 0.21"
 Routed to Reach DP2 : WETLANDS

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-YR Rainfall=5.22"

Area (sf)	CN	Description
70,840	30	Woods, Good, HSG A
* 2,020	98	Walkway/Patio, HSG A
37,158	39	>75% Grass cover, Good, HSG A
4,704	76	Gravel roads, HSG A
3,416	98	Roofs, HSG A
* 980	98	Walkway/Patio/Deck, HSG A
6,937	39	>75% Grass cover, Good, HSG A
126,055	38	Weighted Average
119,639		94.91% Pervious Area
6,416		5.09% Impervious Area

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 10-YR Rainfall=5.22"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 11

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		Sheet Flow, GRASS Grass: Short n= 0.150 P2= 3.41"
1.0	120	0.0750	1.92		Shallow Concentrated Flow, GRASS Short Grass Pasture Kv= 7.0 fps
1.6	130	0.0750	1.37		Shallow Concentrated Flow, WOODS Woodland Kv= 5.0 fps
9.8	300	Total			

Summary for Reach DP1: OFFSITE DISCHARGE

Inflow Area = 0.052 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-YR event
 Inflow = 0.00 cfs @ 21.21 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 21.21 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Reach DP2: WETLANDS

Inflow Area = 3.127 ac, 7.11% Impervious, Inflow Depth = 0.19" for 10-YR event
 Inflow = 0.11 cfs @ 12.54 hrs, Volume= 0.051 af
 Outflow = 0.11 cfs @ 12.54 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Pond 7P: INFILTRATION CHAMBER SYSTEM 1

Inflow Area = 0.059 ac, 100.00% Impervious, Inflow Depth = 4.98" for 10-YR event
 Inflow = 0.29 cfs @ 12.09 hrs, Volume= 0.024 af
 Outflow = 0.02 cfs @ 11.15 hrs, Volume= 0.024 af, Atten= 93%, Lag= 0.0 min
 Discarded = 0.02 cfs @ 11.15 hrs, Volume= 0.024 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routed to Reach DP2 : WETLANDS

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 113.60' @ 13.17 hrs Surf.Area= 393 sf Storage= 399 cf

Plug-Flow detention time= 134.1 min calculated for 0.024 af (100% of inflow)
 Center-of-Mass det. time= 134.0 min (881.3 - 747.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	112.00'	385 cf	15.75'W x 24.98'L x 3.50'H Field A 1,377 cf Overall - 413 cf Embedded = 963 cf x 40.0% Voids
#2A	112.50'	413 cf	ADS_StormTech SC-740 +Cap x 9 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 9 Chambers in 3 Rows
		799 cf	Total Available Storage

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 10-YR Rainfall=5.22"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 12

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	112.00'	2.410 in/hr Exfiltration over Surface area
#2	Primary	115.00'	4.0" Horiz. Orifice/Grate X 3 rows C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 11.15 hrs HW=112.04' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=112.00' (Free Discharge)
 ↑**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 8P: STONE DIAPHRAM

Inflow Area = 0.158 ac, 0.00% Impervious, Inflow Depth = 2.72" for 10-YR event
 Inflow = 0.49 cfs @ 12.09 hrs, Volume= 0.036 af
 Outflow = 0.04 cfs @ 11.65 hrs, Volume= 0.036 af, Atten= 92%, Lag= 0.0 min
 Discarded = 0.04 cfs @ 11.65 hrs, Volume= 0.036 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach DP2 : WETLANDS

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 111.58' @ 13.41 hrs Surf.Area= 750 sf Storage= 625 cf

Plug-Flow detention time= 134.2 min calculated for 0.036 af (100% of inflow)
 Center-of-Mass det. time= 134.2 min (964.5 - 830.3)

Volume	Invert	Avail.Storage	Storage Description
#1	109.50'	750 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 1,875 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
109.50	750	0	0
110.00	750	375	375
111.00	750	750	1,125
112.00	750	750	1,875

Device	Routing	Invert	Outlet Devices
#1	Primary	111.90'	375.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	109.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 11.65 hrs HW=109.53' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=109.50' (Free Discharge)
 ↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 9P: INFILTRATION CHAMBER SYSTEM 2

Inflow Area = 0.016 ac, 100.00% Impervious, Inflow Depth = 4.98" for 10-YR event
 Inflow = 0.08 cfs @ 12.09 hrs, Volume= 0.007 af
 Outflow = 0.01 cfs @ 11.65 hrs, Volume= 0.007 af, Atten= 87%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 11.65 hrs, Volume= 0.007 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach DP2 : WETLANDS

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 104.34' @ 12.62 hrs Surf.Area= 196 sf Storage= 88 cf

Plug-Flow detention time= 49.1 min calculated for 0.007 af (100% of inflow)
 Center-of-Mass det. time= 49.1 min (796.4 - 747.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	103.50'	201 cf	11.00'W x 17.86'L x 3.50'H Field A 687 cf Overall - 184 cf Embedded = 504 cf x 40.0% Voids
#2A	104.00'	184 cf	ADS_StormTech SC-740 +Cap x 4 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 4 Chambers in 2 Rows
		385 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	106.00'	4.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	103.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 11.65 hrs HW=103.54' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=103.50' (Free Discharge)
 ↑**1=Orifice/Grate** (Controls 0.00 cfs)

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 100-YR Rainfall=8.11"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 14

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

Subcatchment 1S: SUBCAT1 Runoff Area=2,268 sf 0.00% Impervious Runoff Depth=0.52"
Flow Length=96' Tc=6.7 min CN=31 Runoff=0.01 cfs 0.002 af

Subcatchment 2S: DRIVEWAY Runoff Area=6,900 sf 0.00% Impervious Runoff Depth=5.26"
Tc=6.0 min CN=76 Runoff=0.95 cfs 0.069 af

Subcatchment 2SR: 2SR Runoff Area=2,556 sf 100.00% Impervious Runoff Depth=7.87"
Tc=6.0 min CN=98 Runoff=0.46 cfs 0.038 af

Subcatchment 2SRG: 2SR1 Runoff Area=717 sf 100.00% Impervious Runoff Depth=7.87"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.011 af

Subcatchment 4S: SUBCAT2 Runoff Area=126,055 sf 5.09% Impervious Runoff Depth=1.11"
Flow Length=300' Tc=9.8 min CN=38 Runoff=2.00 cfs 0.268 af

Reach DP1: OFFSITE DISCHARGE Inflow=0.01 cfs 0.002 af
Outflow=0.01 cfs 0.002 af

Reach DP2: WETLANDS Inflow=2.92 cfs 0.286 af
Outflow=2.92 cfs 0.286 af

Pond 7P: INFILTRATION CHAMBER SYSTEM Peak Elev=115.01' Storage=722 cf Inflow=0.46 cfs 0.038 af
Discarded=0.02 cfs 0.038 af Primary=0.02 cfs 0.001 af Outflow=0.04 cfs 0.038 af

Pond 8P: STONE DIAPHRAM Peak Elev=111.91' Storage=722 cf Inflow=0.95 cfs 0.069 af
Discarded=0.04 cfs 0.050 af Primary=0.92 cfs 0.017 af Outflow=0.97 cfs 0.067 af

Pond 9P: INFILTRATION CHAMBER SYSTEM Peak Elev=104.91' Storage=166 cf Inflow=0.13 cfs 0.011 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af

Total Runoff Area = 3.179 ac Runoff Volume = 0.389 af Average Runoff Depth = 1.47"
93.00% Pervious = 2.957 ac 7.00% Impervious = 0.222 ac

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 100-YR Rainfall=8.11"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 15

Summary for Subcatchment 1S: SUBCAT1

Runoff = 0.01 cfs @ 12.39 hrs, Volume= 0.002 af, Depth= 0.52"
Routed to Reach DP1 : OFFSITE DISCHARGE

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-YR Rainfall=8.11"

Area (sf)	CN	Description
1,988	30	Woods, Good, HSG A
280	39	>75% Grass cover, Good, HSG A
2,268	31	Weighted Average
2,268		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.41"
0.4	46	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.7	96	Total			

Summary for Subcatchment 2S: DRIVEWAY

Runoff = 0.95 cfs @ 12.09 hrs, Volume= 0.069 af, Depth= 5.26"
Routed to Pond 8P : STONE DIAPHRAM

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-YR Rainfall=8.11"

Area (sf)	CN	Description
6,900	76	Gravel roads, HSG A
6,900		100.00% Pervious Area

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

Summary for Subcatchment 2SR: 2SR

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.038 af, Depth= 7.87"
Routed to Pond 7P : INFILTRATION CHAMBER SYSTEM 1

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-YR Rainfall=8.11"

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 100-YR Rainfall=8.11"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 16

Area (sf)	CN	Description
* 2,556	98	Roofs, HSG A
2,556		100.00% Impervious Area

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

Summary for Subcatchment 2SRG: 2SR1

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 0.011 af, Depth= 7.87"
 Routed to Pond 9P : INFILTRATION CHAMBER SYSTEM 2

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-YR Rainfall=8.11"

Area (sf)	CN	Description
717	98	Roofs, HSG A
717		100.00% Impervious Area

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

Summary for Subcatchment 4S: SUBCAT2

Runoff = 2.00 cfs @ 12.20 hrs, Volume= 0.268 af, Depth= 1.11"
 Routed to Reach DP2 : WETLANDS

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-YR Rainfall=8.11"

Area (sf)	CN	Description
70,840	30	Woods, Good, HSG A
* 2,020	98	Walkway/Patio, HSG A
37,158	39	>75% Grass cover, Good, HSG A
4,704	76	Gravel roads, HSG A
3,416	98	Roofs, HSG A
* 980	98	Walkway/Patio/Deck, HSG A
6,937	39	>75% Grass cover, Good, HSG A
126,055	38	Weighted Average
119,639		94.91% Pervious Area
6,416		5.09% Impervious Area

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 100-YR Rainfall=8.11"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 17

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		Sheet Flow, GRASS Grass: Short n= 0.150 P2= 3.41"
1.0	120	0.0750	1.92		Shallow Concentrated Flow, GRASS Short Grass Pasture Kv= 7.0 fps
1.6	130	0.0750	1.37		Shallow Concentrated Flow, WOODS Woodland Kv= 5.0 fps
9.8	300	Total			

Summary for Reach DP1: OFFSITE DISCHARGE

Inflow Area = 0.052 ac, 0.00% Impervious, Inflow Depth = 0.52" for 100-YR event
 Inflow = 0.01 cfs @ 12.39 hrs, Volume= 0.002 af
 Outflow = 0.01 cfs @ 12.39 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Reach DP2: WETLANDS

Inflow Area = 3.127 ac, 7.11% Impervious, Inflow Depth = 1.10" for 100-YR event
 Inflow = 2.92 cfs @ 12.20 hrs, Volume= 0.286 af
 Outflow = 2.92 cfs @ 12.20 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Summary for Pond 7P: INFILTRATION CHAMBER SYSTEM 1

Inflow Area = 0.059 ac, 100.00% Impervious, Inflow Depth = 7.87" for 100-YR event
 Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.038 af
 Outflow = 0.04 cfs @ 12.96 hrs, Volume= 0.038 af, Atten= 90%, Lag= 52.7 min
 Discarded = 0.02 cfs @ 9.95 hrs, Volume= 0.038 af
 Primary = 0.02 cfs @ 12.96 hrs, Volume= 0.001 af

Routed to Reach DP2 : WETLANDS

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 115.01' @ 12.97 hrs Surf.Area= 393 sf Storage= 722 cf

Plug-Flow detention time= 260.6 min calculated for 0.038 af (100% of inflow)
 Center-of-Mass det. time= 260.5 min (1,001.6 - 741.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	112.00'	385 cf	15.75'W x 24.98'L x 3.50'H Field A 1,377 cf Overall - 413 cf Embedded = 963 cf x 40.0% Voids
#2A	112.50'	413 cf	ADS_StormTech SC-740 +Cap x 9 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 9 Chambers in 3 Rows
		799 cf	Total Available Storage

Proposed Watershed 0 Arnold CMR mod 2 check

Type III 24-hr 100-YR Rainfall=8.11"

Prepared by Merrill Associates Inc

Printed 3/2/2026

HydroCAD® 10.20-3h s/n 02159 © 2024 HydroCAD Software Solutions LLC

Page 18

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	112.00'	2.410 in/hr Exfiltration over Surface area
#2	Primary	115.00'	4.0" Horiz. Orifice/Grate X 3 rows C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 9.95 hrs HW=112.04' (Free Discharge)
 ↳ **1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.02 cfs @ 12.96 hrs HW=115.01' (Free Discharge)
 ↳ **2=Orifice/Grate** (Weir Controls 0.02 cfs @ 0.39 fps)

Summary for Pond 8P: STONE DIAPHRAM

Inflow Area = 0.158 ac, 0.00% Impervious, Inflow Depth = 5.26" for 100-YR event
 Inflow = 0.95 cfs @ 12.09 hrs, Volume= 0.069 af
 Outflow = 0.97 cfs @ 12.20 hrs, Volume= 0.067 af, Atten= 0%, Lag= 6.6 min
 Discarded = 0.04 cfs @ 10.90 hrs, Volume= 0.050 af
 Primary = 0.92 cfs @ 12.20 hrs, Volume= 0.017 af
 Routed to Reach DP2 : WETLANDS

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
 Peak Elev= 111.91' @ 12.20 hrs Surf.Area= 750 sf Storage= 722 cf

Plug-Flow detention time= 144.8 min calculated for 0.067 af (97% of inflow)
 Center-of-Mass det. time= 126.8 min (938.2 - 811.4)

Volume	Invert	Avail.Storage	Storage Description
#1	109.50'	750 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 1,875 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
109.50	750	0	0
110.00	750	375	375
111.00	750	750	1,125
112.00	750	750	1,875

Device	Routing	Invert	Outlet Devices
#1	Primary	111.90'	375.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	109.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 10.90 hrs HW=109.53' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.46 cfs @ 12.20 hrs HW=111.91' (Free Discharge)
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 0.46 cfs @ 0.20 fps)

Summary for Pond 9P: INFILTRATION CHAMBER SYSTEM 2

Inflow Area = 0.016 ac, 100.00% Impervious, Inflow Depth = 7.87" for 100-YR event
 Inflow = 0.13 cfs @ 12.09 hrs, Volume= 0.011 af
 Outflow = 0.01 cfs @ 11.30 hrs, Volume= 0.011 af, Atten= 91%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 11.30 hrs, Volume= 0.011 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach DP2 : WETLANDS

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 104.91' @ 13.00 hrs Surf.Area= 196 sf Storage= 166 cf

Plug-Flow detention time= 105.5 min calculated for 0.011 af (100% of inflow)
 Center-of-Mass det. time= 105.4 min (846.4 - 741.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	103.50'	201 cf	11.00'W x 17.86'L x 3.50'H Field A 687 cf Overall - 184 cf Embedded = 504 cf x 40.0% Voids
#2A	104.00'	184 cf	ADS_StormTech SC-740 +Cap x 4 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 4 Chambers in 2 Rows
		385 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	106.00'	4.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	103.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 11.30 hrs HW=103.54' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=103.50' (Free Discharge)
 ↑**1=Orifice/Grate** (Controls 0.00 cfs)