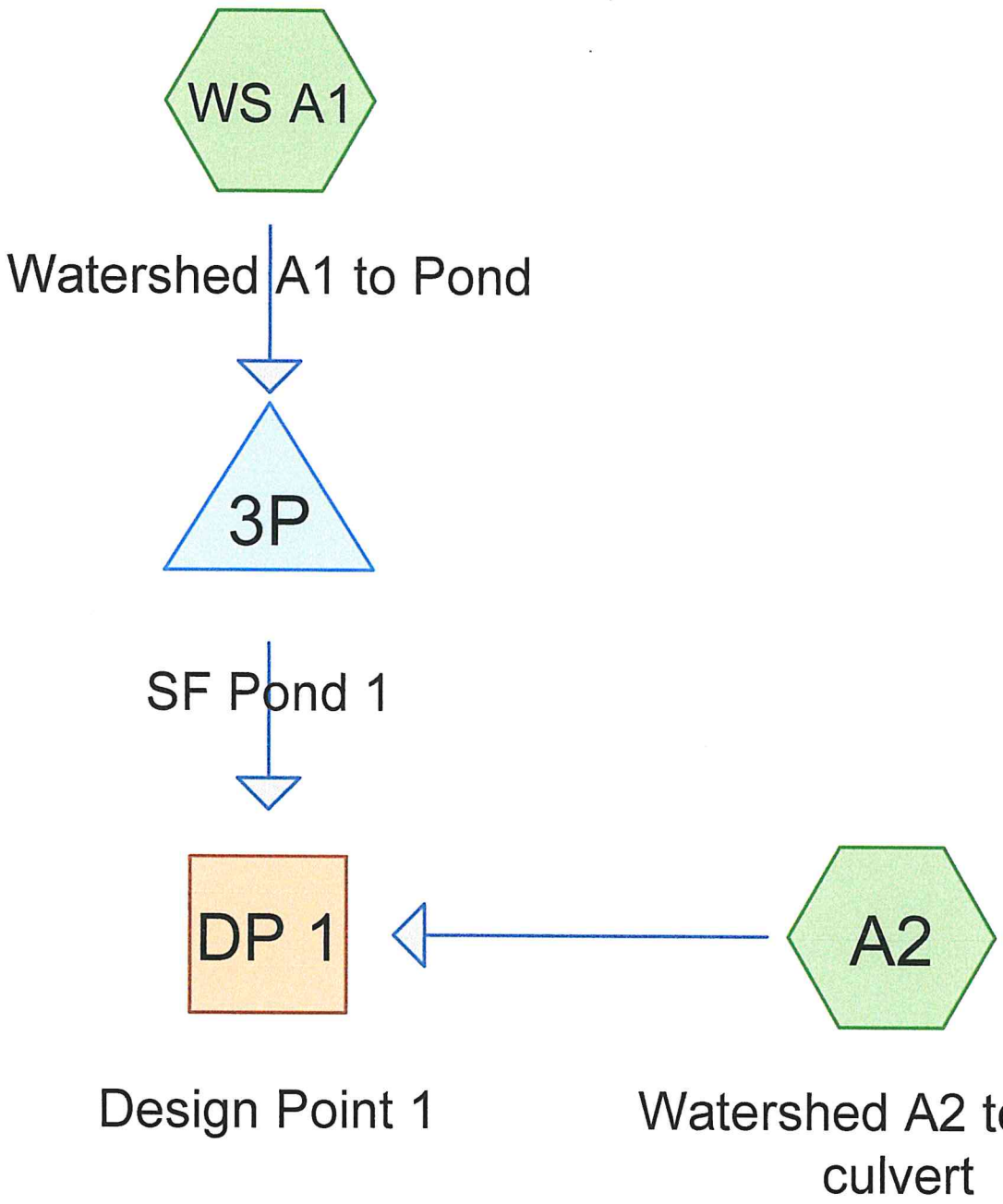


Subcat Reach Pond Link

Routing Diagram for Proposed Condition to DP 1
Prepared by SJR Engineering Inc, Printed 9/24/2022
HydroCAD® 10.10-7a s/n 00591 © 2021 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 Year Storm Event	Type III 24-hr		Default	24.00	1	3.10	2
2	10 Year Storm Event	Type III 24-hr		Default	24.00	1	4.60	2
3	25 Year Storm Event	Type III 24-hr		Default	24.00	1	5.80	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.498	39	>75% Grass cover, Good, HSG A (A2, WS A1)
0.197	98	Paved parking, HSG A (WS A1)
0.070	98	Paved roads w/curbs & sewers, HSG A (A2)
0.765	**60**	**TOTAL AREA**

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A2: Watershed A2 to road Runoff Area=14,692 sf 20.83% Impervious Runoff Depth>0.10"
Flow Length=305' Tc=18.6 min CN=51 Runoff=0.01 cfs 0.003 af

Subcatchment WS A1: Watershed A1 to Runoff Area=18,652 sf 46.12% Impervious Runoff Depth>0.52"
Flow Length=262' Tc=19.6 min CN=66 Runoff=0.16 cfs 0.019 af

Reach DP 1: Design Point 1 Inflow=0.02 cfs 0.014 af
Outflow=0.02 cfs 0.014 af

Pond 3P: SF Pond 1 Peak Elev=224.19' Storage=415 cf Inflow=0.16 cfs 0.019 af
Outflow=0.02 cfs 0.011 af

Total Runoff Area = 0.765 ac Runoff Volume = 0.022 af Average Runoff Depth = 0.34"
65.02% Pervious = 0.498 ac 34.98% Impervious = 0.268 ac

Summary for Subcatchment A2: Watershed A2 to road culvert

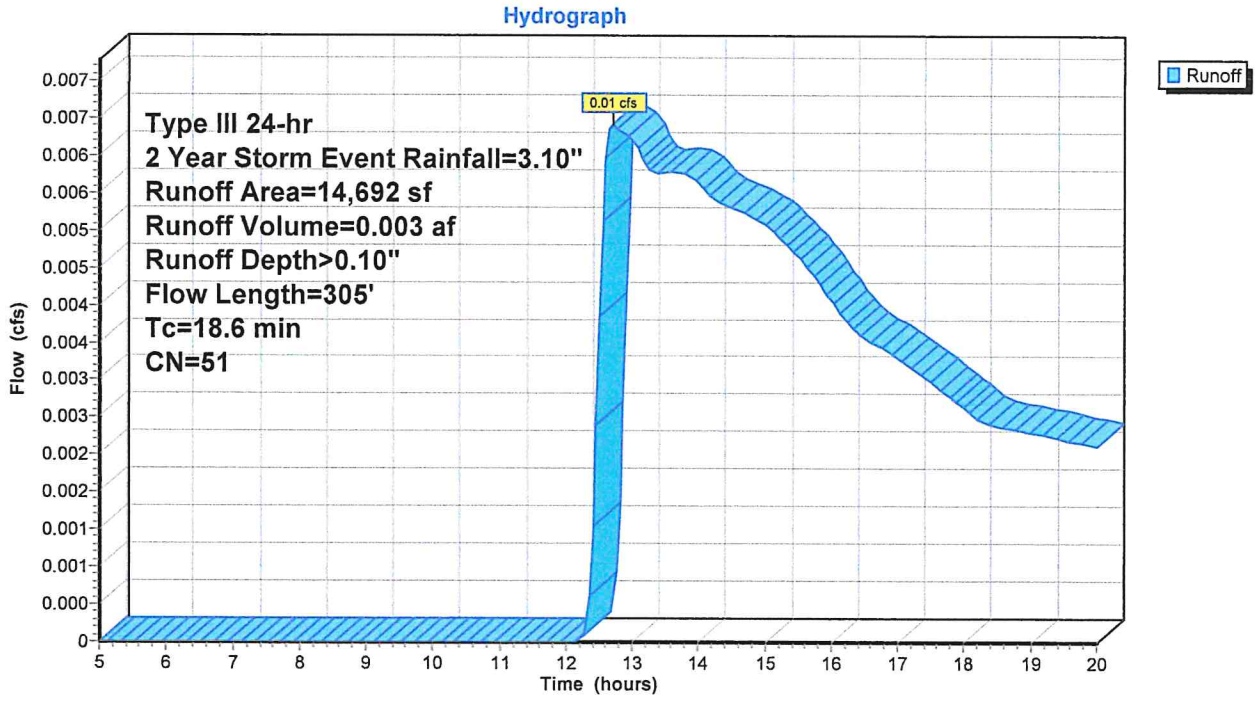
Runoff = 0.01 cfs @ 12.71 hrs, Volume= 0.003 af, Depth> 0.10"
Routed to Reach DP 1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Event Rainfall=3.10"

Area (sf)	CN	Description
3,061	98	Paved roads w/curbs & sewers, HSG A
11,631	39	>75% Grass cover, Good, HSG A
14,692	51	Weighted Average
11,631		79.17% Pervious Area
3,061		20.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	115	0.0420	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	190	0.0260	6.38	76.55	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=1.00' Z= 10.0 '/' Top.W=22.00' n= 0.025 Earth, clean & winding
18.6	305	Total			

Subcatchment A2: Watershed A2 to road culvert



Summary for Subcatchment WS A1: Watershed A1 to Pond

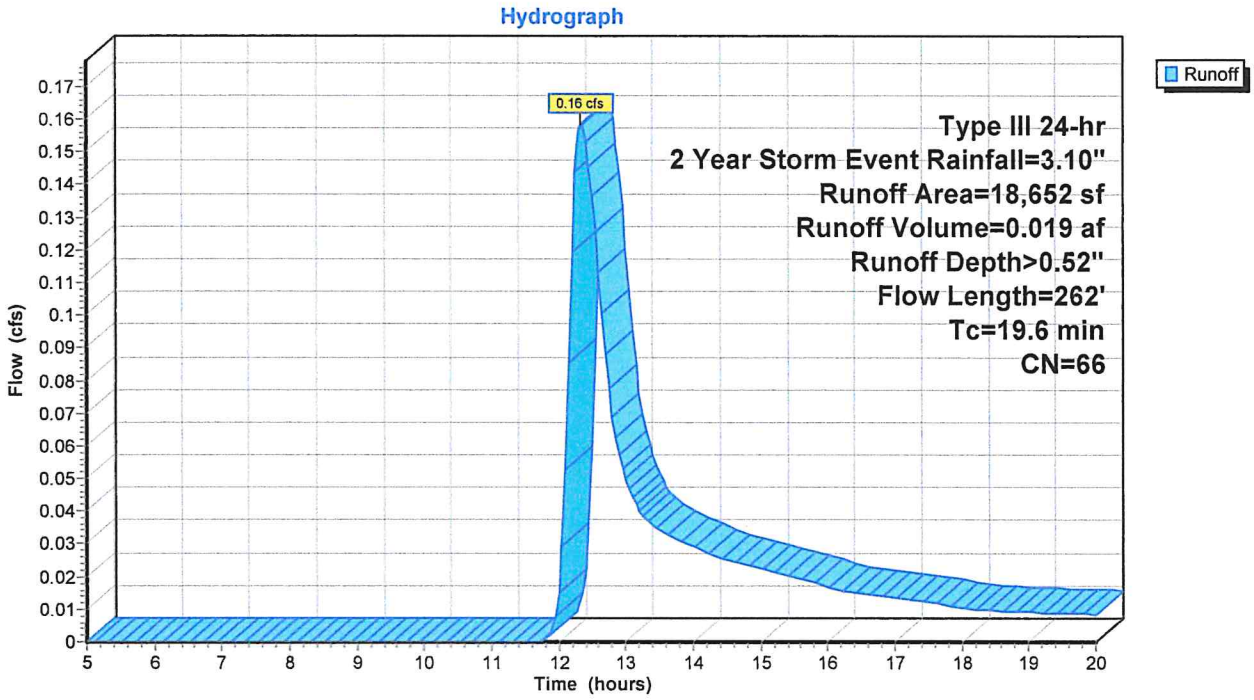
Runoff = 0.16 cfs @ 12.34 hrs, Volume= 0.019 af, Depth> 0.52"
Routed to Pond 3P : SF Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Event Rainfall=3.10"

Area (sf)	CN	Description
8,603	98	Paved parking, HSG A
10,049	39	>75% Grass cover, Good, HSG A
18,652	66	Weighted Average
10,049		53.88% Pervious Area
8,603		46.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.4	22	0.0200	1.00		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
0.6	100	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	10	0.5000	10.61		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.9	80	0.0050	0.10		**Sheet Flow,** Range n= 0.130 P2= 3.10"
19.6	262	Total			

Subcatchment WS A1: Watershed A1 to Pond

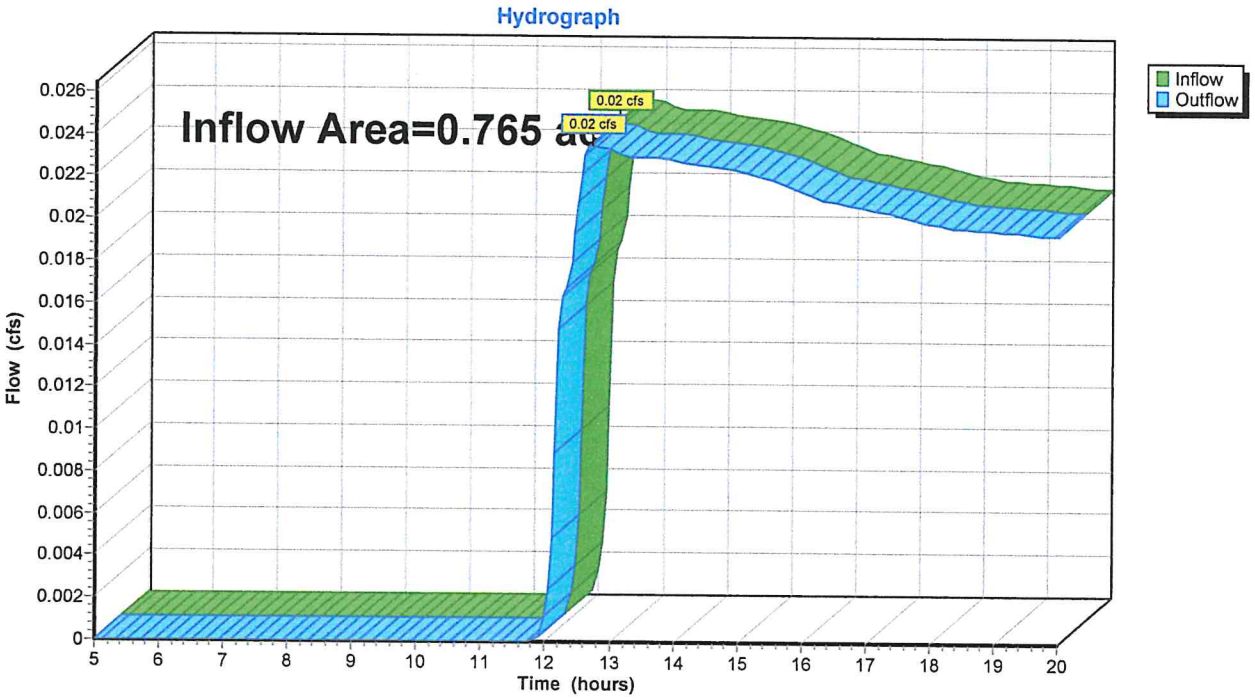


Summary for Reach DP 1: Design Point 1

Inflow Area = 0.765 ac, 34.98% Impervious, Inflow Depth > 0.22" for 2 Year Storm Event event
Inflow = 0.02 cfs @ 12.71 hrs, Volume= 0.014 af
Outflow = 0.02 cfs @ 12.71 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP 1: Design Point 1



Summary for Pond 3P: SF Pond 1

Inflow Area = 0.428 ac, 46.12% Impervious, Inflow Depth > 0.52" for 2 Year Storm Event event
Inflow = 0.16 cfs @ 12.34 hrs, Volume= 0.019 af
Outflow = 0.02 cfs @ 16.04 hrs, Volume= 0.011 af, Atten= 89%, Lag= 222.3 min
Primary = 0.02 cfs @ 16.04 hrs, Volume= 0.011 af
Routed to Reach DP 1 : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 224.19' @ 16.04 hrs Surf.Area= 2,237 sf Storage= 415 cf

Plug-Flow detention time= 201.5 min calculated for 0.011 af (58% of inflow)
Center-of-Mass det. time= 113.1 min (964.8 - 851.7)

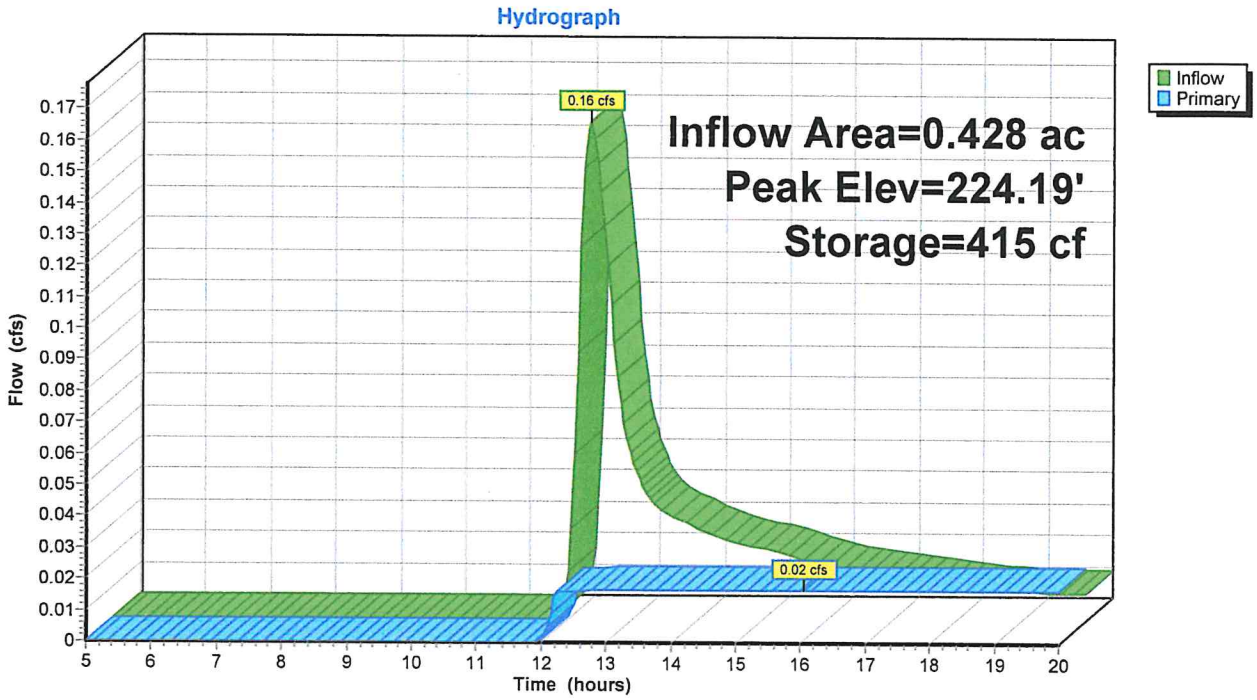
Volume	Invert	Avail.Storage	Storage Description
#1	224.00'	5,502 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
224.00	2,154	0	0
225.00	2,591	2,373	2,373
226.00	3,052	2,822	5,194
226.10	3,100	308	5,502

Device	Routing	Invert	Outlet Devices
#1	Primary	220.00'	**12.0" Round Culvert** L= 123.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 220.00' / 219.38' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	221.00'	**0.6" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	224.55'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	225.00'	**25.0' 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

Primary OutFlow Max=0.02 cfs @ 16.04 hrs HW=224.19' (Free Discharge)
- **1=Culvert** (Passes 0.02 cfs of 5.62 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 8.57 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: SF Pond 1



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A2: Watershed A2 to road Runoff Area=14,692 sf 20.83% Impervious Runoff Depth>0.50"
Flow Length=305' Tc=18.6 min CN=51 Runoff=0.10 cfs 0.014 af

Subcatchment WS A1: Watershed A1 to Runoff Area=18,652 sf 46.12% Impervious Runoff Depth>1.32"
Flow Length=262' Tc=19.6 min CN=66 Runoff=0.47 cfs 0.047 af

Reach DP 1: Design Point 1 Inflow=0.12 cfs 0.029 af
Outflow=0.12 cfs 0.029 af

Pond 3P: SF Pond 1 Peak Elev=224.64' Storage=1,463 cf Inflow=0.47 cfs 0.047 af
Outflow=0.02 cfs 0.014 af

Total Runoff Area = 0.765 ac Runoff Volume = 0.061 af Average Runoff Depth = 0.96"
65.02% Pervious = 0.498 ac 34.98% Impervious = 0.268 ac

Summary for Subcatchment A2: Watershed A2 to road culvert

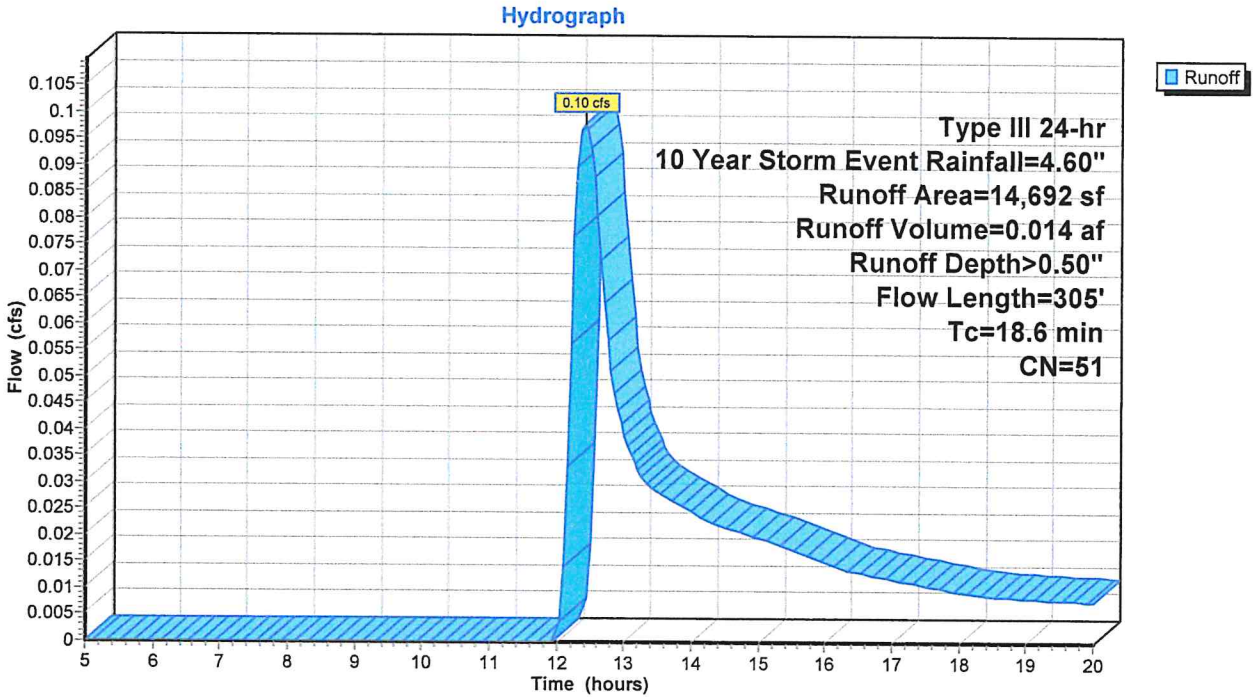
Runoff = 0.10 cfs @ 12.40 hrs, Volume= 0.014 af, Depth> 0.50"
Routed to Reach DP 1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Event Rainfall=4.60"

Area (sf)	CN	Description
3,061	98	Paved roads w/curbs & sewers, HSG A
11,631	39	>75% Grass cover, Good, HSG A
14,692	51	Weighted Average
11,631		79.17% Pervious Area
3,061		20.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	115	0.0420	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	190	0.0260	6.38	76.55	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=1.00' Z= 10.0 '/' Top.W=22.00' n= 0.025 Earth, clean & winding
18.6	305	Total			

Subcatchment A2: Watershed A2 to road culvert



Summary for Subcatchment WS A1: Watershed A1 to Pond

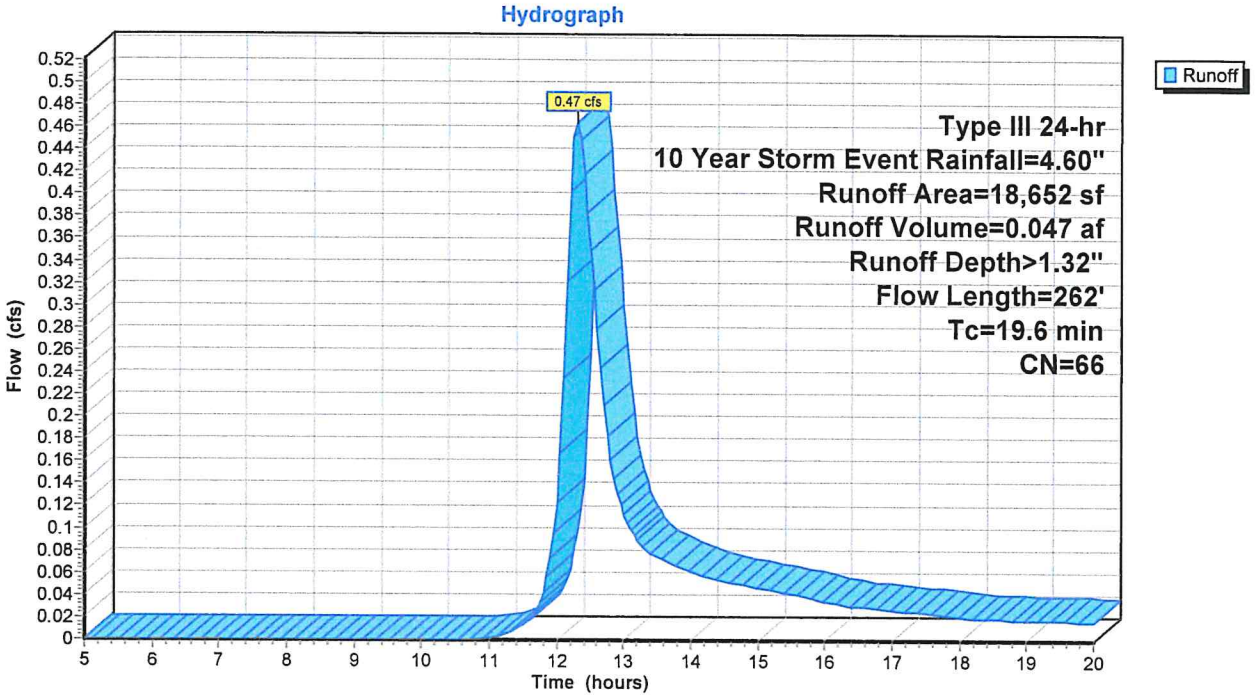
Runoff = 0.47 cfs @ 12.30 hrs, Volume= 0.047 af, Depth> 1.32"
Routed to Pond 3P : SF Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Event Rainfall=4.60"

Area (sf)	CN	Description
8,603	98	Paved parking, HSG A
10,049	39	>75% Grass cover, Good, HSG A
18,652	66	Weighted Average
10,049		53.88% Pervious Area
8,603		46.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.4	22	0.0200	1.00		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
0.6	100	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	10	0.5000	10.61		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.9	80	0.0050	0.10		**Sheet Flow,** Range n= 0.130 P2= 3.10"
19.6	262	Total			

Subcatchment WS A1: Watershed A1 to Pond

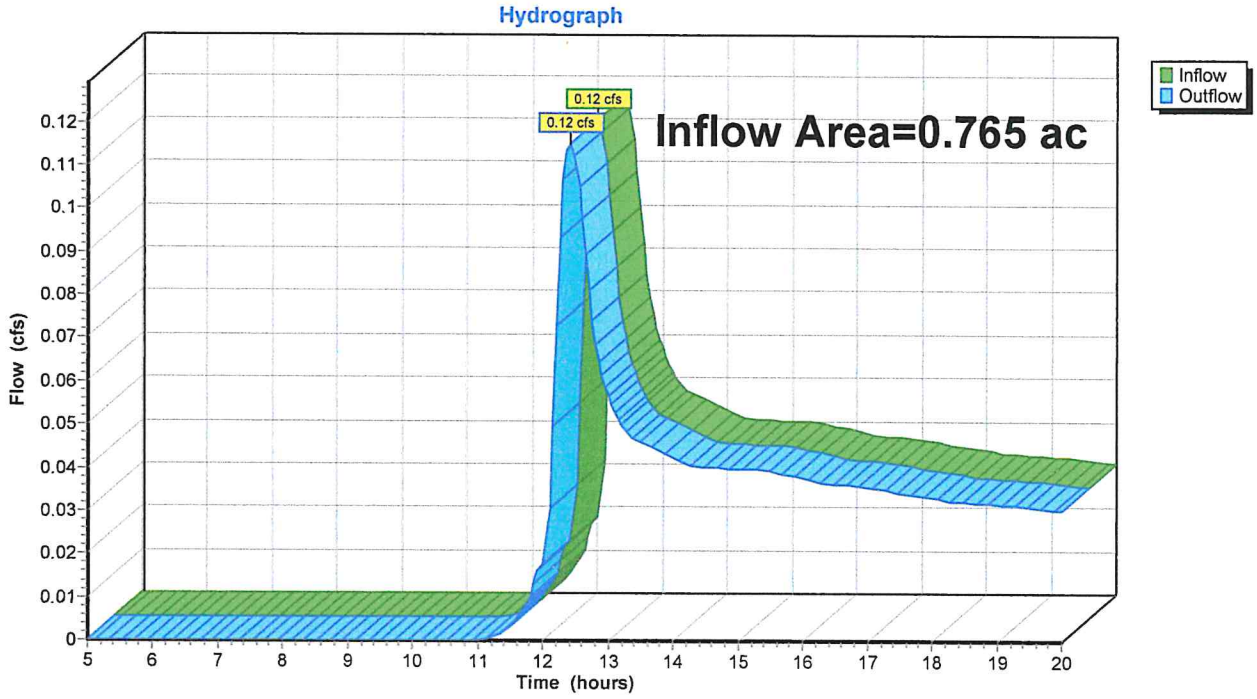


Summary for Reach DP 1: Design Point 1

Inflow Area = 0.765 ac, 34.98% Impervious, Inflow Depth > 0.45" for 10 Year Storm Event event
Inflow = 0.12 cfs @ 12.41 hrs, Volume= 0.029 af
Outflow = 0.12 cfs @ 12.41 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP 1: Design Point 1



Summary for Pond 3P: SF Pond 1

Inflow Area = 0.428 ac, 46.12% Impervious, Inflow Depth > 1.32" for 10 Year Storm Event event
Inflow = 0.47 cfs @ 12.30 hrs, Volume= 0.047 af
Outflow = 0.02 cfs @ 17.66 hrs, Volume= 0.014 af, Atten= 95%, Lag= 321.5 min
Primary = 0.02 cfs @ 17.66 hrs, Volume= 0.014 af
Routed to Reach DP 1 : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 224.64' @ 17.66 hrs Surf.Area= 2,433 sf Storage= 1,463 cf

Plug-Flow detention time= 237.3 min calculated for 0.014 af (30% of inflow)
Center-of-Mass det. time= 138.3 min (967.9 - 829.5)

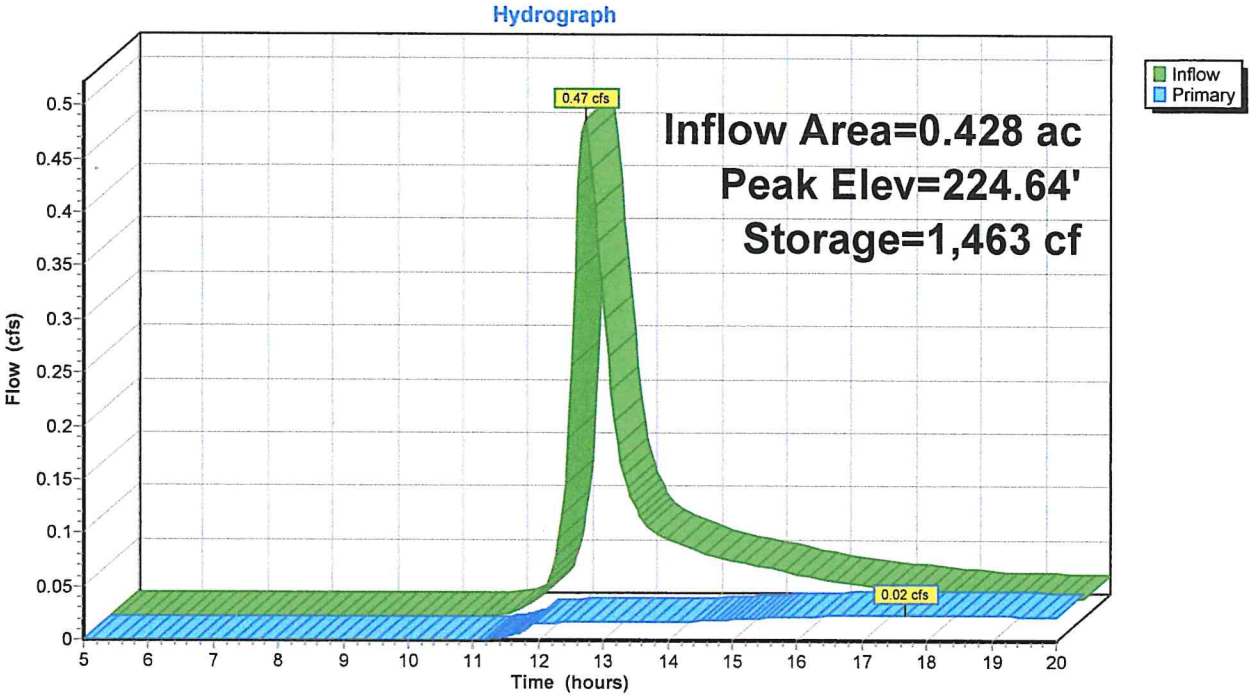
Volume	Invert	Avail.Storage	Storage Description
#1	224.00'	5,502 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
224.00	2,154	0	0
225.00	2,591	2,373	2,373
226.00	3,052	2,822	5,194
226.10	3,100	308	5,502

Device	Routing	Invert	Outlet Devices
#1	Primary	220.00'	**12.0" Round Culvert** L= 123.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 220.00' / 219.38' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	221.00'	**0.6" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	224.55'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	225.00'	**25.0' 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

Primary OutFlow Max=0.02 cfs @ 17.66 hrs HW=224.64' (Free Discharge)
- **1=Culvert** (Passes 0.02 cfs of 5.94 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 9.15 fps)
  - **3=Orifice/Grate** (Orifice Controls 0.01 cfs @ 1.04 fps)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: SF Pond 1



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 A2: Watershed A2 to road Runoff Area=14,692 sf 20.83% Impervious Runoff Depth>0.99"
Flow Length=305' Tc=18.6 min CN=51 Runoff=0.24 cfs 0.028 af

Subcatchment WS A1: Watershed A1 to Runoff Area=18,652 sf 46.12% Impervious Runoff Depth>2.10"
Flow Length=262' Tc=19.6 min CN=66 Runoff=0.76 cfs 0.075 af

Reach DP 1: Design Point 1 Inflow=0.26 cfs 0.051 af
Outflow=0.26 cfs 0.051 af

Pond 3P: SF Pond 1 Peak Elev=224.98' Storage=2,328 cf Inflow=0.76 cfs 0.075 af
Outflow=0.04 cfs 0.023 af

Total Runoff Area = 0.765 ac Runoff Volume = 0.103 af Average Runoff Depth = 1.61"
65.02% Pervious = 0.498 ac 34.98% Impervious = 0.268 ac

Summary for Subcatchment A2: Watershed A2 to road culvert

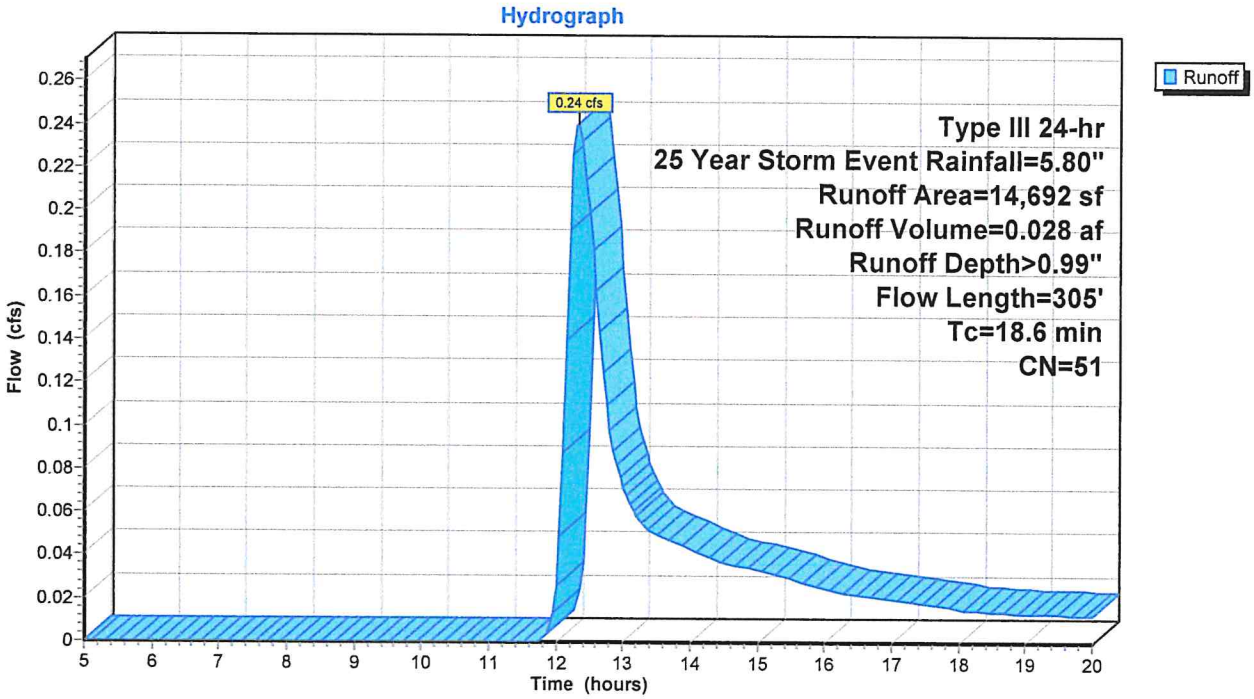
Runoff = 0.24 cfs @ 12.32 hrs, Volume= 0.028 af, Depth> 0.99"
Routed to Reach DP 1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.80"

Area (sf)	CN	Description
3,061	98	Paved roads w/curbs & sewers, HSG A
11,631	39	>75% Grass cover, Good, HSG A
14,692	51	Weighted Average
11,631		79.17% Pervious Area
3,061		20.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	115	0.0420	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	190	0.0260	6.38	76.55	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=1.00' Z= 10.0 '/' Top.W=22.00' n= 0.025 Earth, clean & winding
18.6	305	Total			

Subcatchment A2: Watershed A2 to road culvert



Summary for Subcatchment WS A1: Watershed A1 to Pond

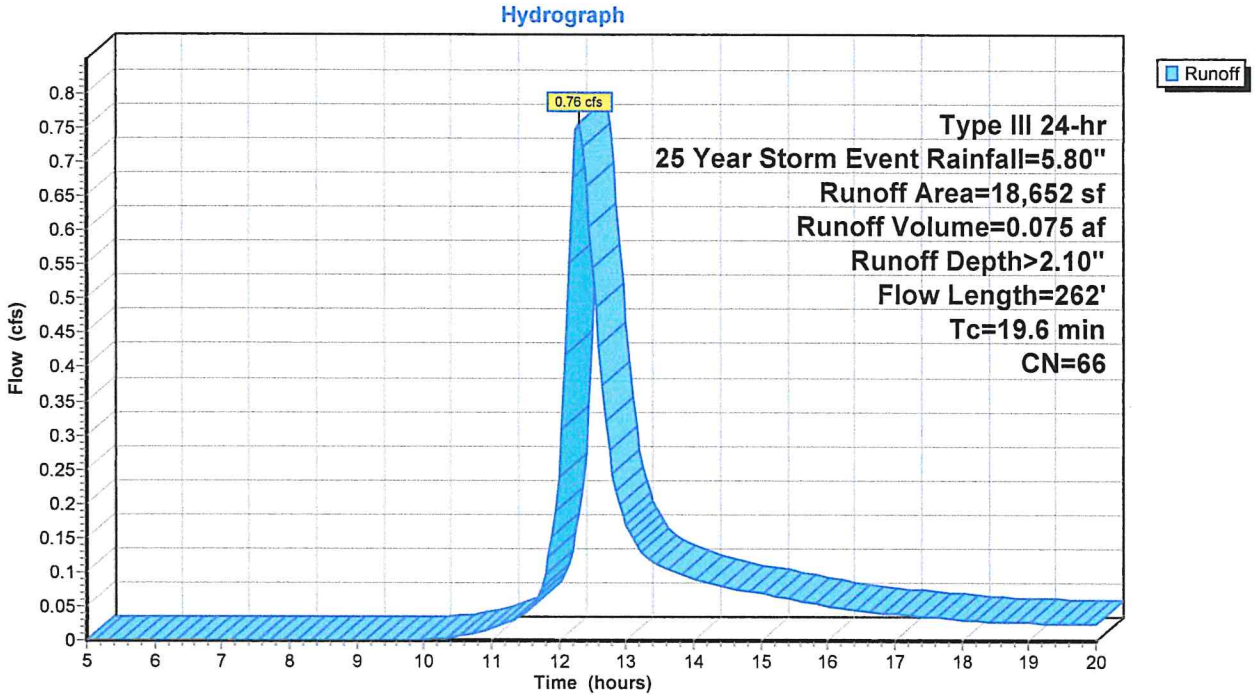
Runoff = 0.76 cfs @ 12.29 hrs, Volume= 0.075 af, Depth> 2.10"
Routed to Pond 3P : SF Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Storm Event Rainfall=5.80"

Area (sf)	CN	Description
8,603	98	Paved parking, HSG A
10,049	39	>75% Grass cover, Good, HSG A
18,652	66	Weighted Average
10,049		53.88% Pervious Area
8,603		46.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.4	22	0.0200	1.00		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
0.6	100	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	10	0.5000	10.61		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.9	80	0.0050	0.10		**Sheet Flow,** Range n= 0.130 P2= 3.10"
19.6	262	Total			

Subcatchment WS A1: Watershed A1 to Pond

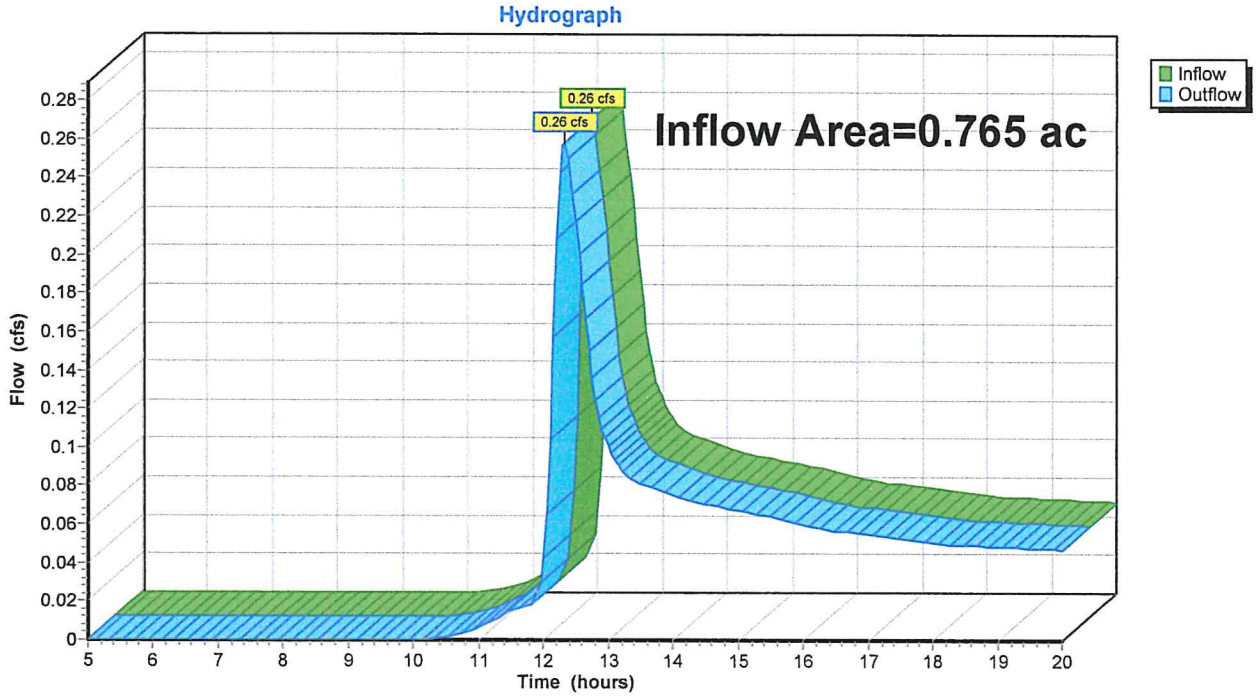


Summary for Reach DP 1: Design Point 1

Inflow Area = 0.765 ac, 34.98% Impervious, Inflow Depth > 0.79" for 25 Year Storm Event event
Inflow = 0.26 cfs @ 12.32 hrs, Volume= 0.051 af
Outflow = 0.26 cfs @ 12.32 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP 1: Design Point 1



Summary for Pond 3P: SF Pond 1

Inflow Area = 0.428 ac, 46.12% Impervious, Inflow Depth > 2.10" for 25 Year Storm Event event
Inflow = 0.76 cfs @ 12.29 hrs, Volume= 0.075 af
Outflow = 0.04 cfs @ 17.49 hrs, Volume= 0.023 af, Atten= 95%, Lag= 312.1 min
Primary = 0.04 cfs @ 17.49 hrs, Volume= 0.023 af
Routed to Reach DP 1 : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 224.98' @ 17.49 hrs Surf.Area= 2,584 sf Storage= 2,328 cf

Plug-Flow detention time= 235.5 min calculated for 0.023 af (31% of inflow)
Center-of-Mass det. time= 139.6 min (959.0 - 819.4)

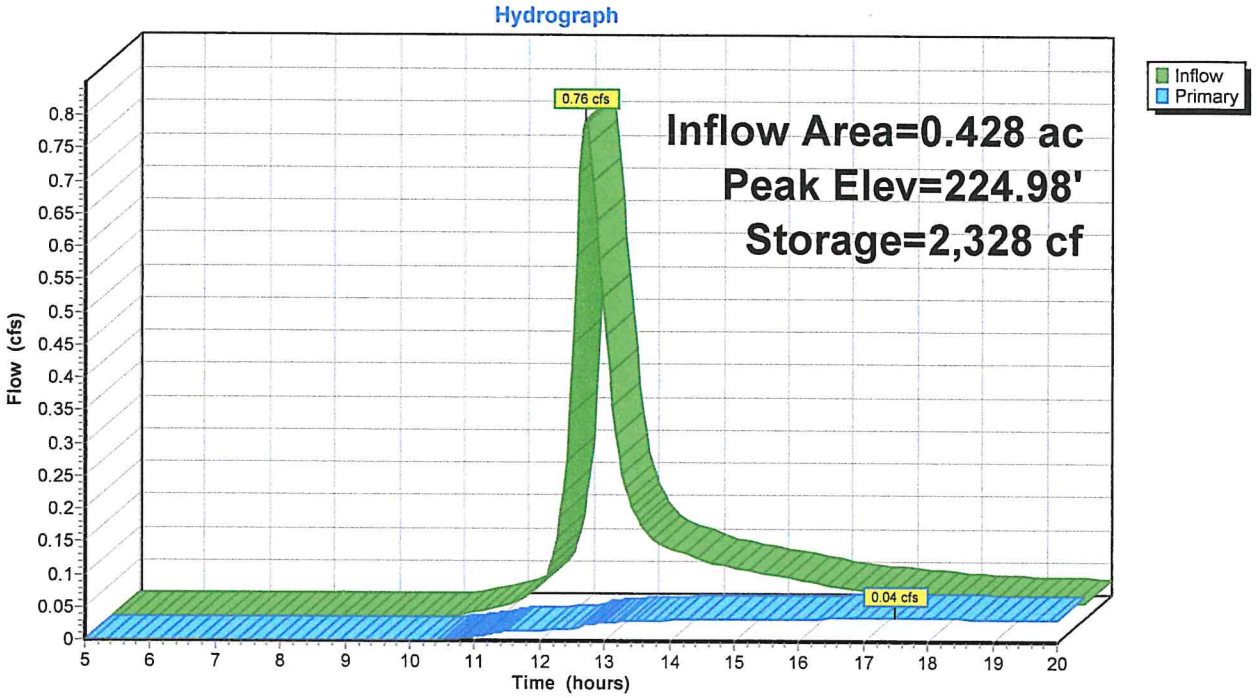
Volume	Invert	Avail.Storage	Storage Description
#1	224.00'	5,502 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
224.00	2,154	0	0
225.00	2,591	2,373	2,373
226.00	3,052	2,822	5,194
226.10	3,100	308	5,502

Device	Routing	Invert	Outlet Devices
#1	Primary	220.00'	**12.0" Round Culvert** L= 123.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 220.00' / 219.38' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	221.00'	**0.6" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	224.55'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	225.00'	**25.0' 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

Primary OutFlow Max=0.04 cfs @ 17.49 hrs HW=224.98' (Free Discharge)
- **1=Culvert** (Passes 0.04 cfs of 6.18 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 9.58 fps)
  - **3=Orifice/Grate** (Orifice Controls 0.02 cfs @ 3.01 fps)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: SF Pond 1



September 27, 2022

Ben Grover
Construction Aggregate Inc
North Yarmouth, Maine 04344

Re: Proposed 4 Unit Complex, Route 115, North Yarmouth
Stormwater Quality Narrative

Dear Ben,

Construction Aggregates is proposing to develop a new residential complex consisting of four 2,300 sf residential units with associated paved parking and turnaround movements. Approximately 19,700 sf of impervious area will be created. Stormwater will be directed and controlled onsite into a soil filter pond. Portions of the building roofs will be infiltrated into the ground through stone drip edges. It is anticipated that this projects site infrastructure will be started in 2023.

The site is identified as Tax Map 7 Lot 34, 17D of the Town's Tax Map. The parcel is approximately 2.33 acres in size and lies within the Village Center Zoning District and the Groundwater Protection Overlay Zone.

Existing Site Conditions

The existing site consists of previously disturbed soil areas with a mostly cleared meadow area (proposed developed area) and remaining undeveloped woods. Existing conditions have been taken from plans prepared by Sevee/Mahar Engineering Phase 2 subdivision development and blended with LIDAR contours and aerial photography of offsite areas. The topography of the proposed developed site is shown at a one foot contour interval. The slope of the property varies from 1% along the flatter areas to 30% along the banks of the steeper slopes of the property.

Adjacent Areas

Adjacent areas and land uses are similar in nature to that being proposed (residential housing). Runoff from the property enters into an 18" diameter culvert (CMP) under Walnut Hill Road (AKA Route 115). Runoff from the site eventually enters Toddy Brook watershed.

SJR ENGINEERING, INC.
STEVE@SJRENG.COM. 16 THURSTON DRIVE, MONMOUTH, ME. TEL: (207) 242-6248

We have prepared a stormwater quantity analysis, under separate cover, in order to properly evaluate existing and proposed stormwater quantity impacts from the development. Runoff from the developed portion of the parcel is directed to the soil filter pond adjacent to the developed area.

Water quality - Soil Filter Ponds

Soil Filter Pond A: We have designed the project to redirect impervious and lawn area runoff into a soil filter pond along the rear of the developed site. The total area draining to this pond is 18,652 sf. We have calculated 8,603 sf of the new impervious area (portion of driveways and building roof) and 10,049 sf of the landscaped area of the project would be treated through the proposed soil filter pond.

The soil filter/detention pond is designed to act such that initial and ending runoff flows are captured and infiltrated through the soil filter media within the pond. The higher flows will be bypassed through the pond and dispersed through the riprap spillway.

Soil filter pond A is to be constructed that has a ground elevation at 224.0 (top of ground surface for filtering system). The pond is to be sized such that the surface area meets (or exceeds) 5% of the impervious area plus 2% of the landscape area that drains to the pond. We have calculated 8,603 sf of impervious area runoff and 10,049 sf of landscape area runoff will enter the pond. Therefore, we are required to have a minimum of 631 sf of surface filter area. We have provided 2154 sf of available area within contour 224.0.

In addition, a minimum treatment volume must be contained such that the required volume contained is less than 18" deep over the surface filter area. The channel protection volume is based on 1" of impervious surface area and .4" of vegetative area entering the pond. Using the same impervious and landscape areas noted above, we are required to have 1052 cf of pond storage above the soil filter surface area. Our design has provided 1,132 cf of storage area at elevation 224.5 (6" deep).

Pond A is controlled by a stormwater control manhole that has a steel plate (or concrete wall) with specific holes cut into the control panel to limit flows leaving the ponds and provide adequate holding time to be treated by the filter media. The holes have been sized using the DEP orifice sizing equation for both filter area and quality area sizing requirements. Water quality enhancement flows are detained within the soil filter pond by restricting the discharge flow through a

small 5/8" orifice control that is located within the stormwater control structure (elevation 221.0).

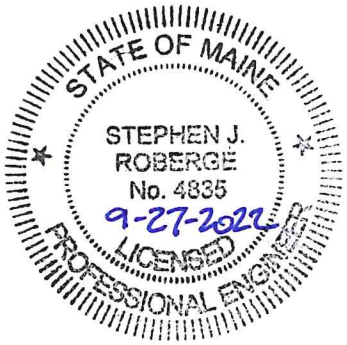
An additional 4,674 sf of stormwater runoff is treatment by the use of filter drip strips along the front/sides of the building's roof line. Unit 4 driveway and a portion of the roof enters into the existing stormwater filter basin along Village View Lane.

Please feel free to contact me if you have any questions concerning the calculations of stormwater from this project.

Sincerely yours,

Stephen Roberge

Stephen Roberge, PE
for SJR Engineering Inc.



TEAM EJP
WATER • WASTEWATER • STORMWATER
SOLUTIONS

JOB _____
SHEET NO. _____ OF _____
CALCULATED BY _____ DATE _____
SCALE _____

SOIL FILTER DESIGN

WATERSHED 1A

TOTAL TREATED = 18652 SF
IMPERVIOUS = 8603 SF
LAWN = 10049 SF

(1) REQUIRED SIZING SURFACE

8603 (.05) + 10049 (.02) = 631 SF REQUIRED (OK)
2154 SF AVAILABLE @ EL 224.0

(2) REQUIRED TREATMENT VOLUME

8603 (1"/12) + 10049 (.4"/12) = 1052 CF REQUIRED (OK)
717 + 335 = 1132 CF AVAILABLE @ EL 224.5

(3) ORIFICE SIZING (DEP REGRESSION EQUATION)

FILTER AREA: $0.035(2154)^{0.4599} = 1.19"$ (OK)

QUALITY VOL: $0.0137(1132)^{0.5372} = 0.60"$ USE 5/8" ϕ @EL 221.0

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Stage-Area-Storage for Pond 3P: SF Pond 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
224.00	2,154	0
224.05	2,176	108
224.10	2,198	218
224.15	2,220	328
224.20	2,241	440
224.25	2,263	552
224.30	2,285	666
224.35	2,307	781
224.40	2,329	897
224.45	2,351	1,014
224.50	2,373	1,132
224.55	2,394	1,251
224.60	2,416	1,371
224.65	2,438	1,492
224.70	2,460	1,615
224.75	2,482	1,738
224.80	2,504	1,863
224.85	2,525	1,989
224.90	2,547	2,116
224.95	2,569	2,243
225.00	2,591	2,373
225.05	2,614	2,503
225.10	2,637	2,634
225.15	2,660	2,766
225.20	2,683	2,900
225.25	2,706	3,035
225.30	2,729	3,171
225.35	2,752	3,308
225.40	2,775	3,446
225.45	2,798	3,585
225.50	2,822	3,726
225.55	2,845	3,867
225.60	2,868	4,010
225.65	2,891	4,154
225.70	2,914	4,299
225.75	2,937	4,445
225.80	2,960	4,593
225.85	2,983	4,741
225.90	3,006	4,891
225.95	3,029	5,042
226.00	3,052	5,194
226.05	3,076	5,347
226.10	**3,100**	**5,502**

REQUIRED SURFACE AREA = 631 SF OK

REQUIRED VOLUME = 1052 CF OK

Summary for Pond 3P: SF Pond 1

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 0.428 ac, 46.12% Impervious, Inflow Depth > 3.78" for 100 Year Storm Event event
Inflow = 1.39 cfs @ 12.27 hrs, Volume= 0.135 af
Outflow = 0.85 cfs @ 12.57 hrs, Volume= 0.080 af, Atten= 39%, Lag= 18.0 min
Primary = 0.85 cfs @ 12.57 hrs, Volume= 0.080 af
Routed to Reach DP 1 : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 225.06' @ 12.57 hrs Surf.Area= 2,617 sf Storage= 2,517 cf TOP OF BERM 226.1 OK

Plug-Flow detention time= 134.3 min calculated for 0.080 af (59% of inflow)
Center-of-Mass det. time= 59.4 min (865.8 - 806.4)

Volume	Invert	Avail.Storage	Storage Description
#1	224.00'	5,502 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
224.00	2,154	0	0
225.00	2,591	2,373	2,373
226.00	3,052	2,822	5,194
226.10	3,100	308	5,502

Device	Routing	Invert	Outlet Devices
#1	Primary	220.00'	**12.0" Round Culvert** L= 123.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 220.00' / 219.38' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	221.00'	**0.6" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	224.55'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	225.00'	**25.0' 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

Primary OutFlow Max=0.79 cfs @ 12.57 hrs HW=225.05' (Free Discharge)
- **1=Culvert** (Passes 0.04 cfs of 6.22 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 9.66 fps)
  - **3=Orifice/Grate** (Orifice Controls 0.02 cfs @ 3.27 fps)
- **4=Broad-Crested Rectangular Weir** (Weir Controls 0.75 cfs @ 0.57 fps)

Summary for Pond 3P: SF Pond 1

Inflow Area = 0.428 ac, 46.12% Impervious, Inflow Depth > 2.10" for 25 Year Storm Event event
Inflow = 0.76 cfs @ 12.29 hrs, Volume= 0.075 af
Outflow = 0.08 cfs @ 14.60 hrs, Volume= 0.020 af, Atten= 90%, Lag= 138.7 min
Primary = 0.08 cfs @ 14.60 hrs, Volume= 0.020 af
Routed to Reach DP 1 : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 225.01' @ 14.60 hrs Surf.Area= 2,596 sf Storage= 2,400 cf

Plug-Flow detention time= 273.8 min calculated for 0.020 af (27% of inflow)
Center-of-Mass det. time= 176.6 min (996.0 - 819.4)

Volume	Invert	Avail.Storage	Storage Description
#1	224.00'	5,502 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
224.00	2,154	0	0
225.00	2,591	2,373	2,373
226.00	3,052	2,822	5,194
226.10	3,100	308	5,502

Device	Routing	Invert	Outlet Devices
#1	Primary	225.00'	**25.0' 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

EMERGENCY SPILLWAY ONLY

Primary OutFlow Max=0.07 cfs @ 14.60 hrs HW=225.01' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.26 fps)

CONTROL STRUCTURE BLOCKED
EMERGENCY SPILLWAY ONLY (ELEV 225.00)

WATER RISES TO 225.01
FREEBOARD 1.00
TOP OF BERM 226.01 OR HIGHER

Dripline Filter Calculation Check

Project: Grover Route 115 North Yarmouth
ATS:
Date:
Version: Initial Stormwater Review
Engineer: Steve Roberge

TREATMENT

Area	Treated Impervious Area (sf)	Required WQV (cf)	Width (ft)	Length (ft)	Reservoir Stone Thickness (ft)	Provided WQV in Stone @ 40% porosity (cf)	Soil Filter Media Thickness (ft)	Provided WQV in Soil Filter Media @ 30% porosity (cf)	Sand Layer Thickness (ft)	Provided WQV in Sand @ 20% porosity (cf)	Total WQV Provided	% Provided
Unit 1	1,558	129.8	4.0	75.0	1	120.0	1	90.0	0	0.0	210.0	162%
	1,558											

PER EACH UNIT

Lot 23, Village Center Estates

Inspection and Maintenance Plan
Date: December 2021

The Earthwork Contractor will be responsible for inspection, maintenance, and operations of the stormwater system during construction. Upon approval of the final construction by the Owner, the Owner will be responsible for the inspection, maintenance, and operation of the stormwater system. We have attached the "Maine ESC BMPs (10/2016)" at the end of the narrative that more fully identifies the Party's E+S responsibilities.

INSPECTIONS – Contractor During Construction

Areas of proposed construction that will require inspections/maintenance of the stormwater system include the following:

- **Detention/Retention/Infiltration Facilities**
  - Soil Filter media inspection and maintenance
  - Outlet Control Structure inspection and maintenance
  - Sediment removal and disposal
- **Ditches, Swales, or other open stormwater channels**
  - Embankment inspection and maintenance
  - Channel inspection
  - Sediment removal and disposal
- **Culverts, catch basins, stormwater control structures**
  - Structure inspection and maintenance
  - Inlet and Outlet inspection
  - Debris removal and disposal
- **Buffers/Landscaping**
  - Landscaping inspection and maintenance
  - Landscaping turf inspection and maintenance
  - Debris removal and disposal

- **General Site Erosion Controls**

  Sediment barriers (silt fence, erosion control berm material)

  Stabilized Construction Exit

  Riprap slopes

  Level Lip Spreaders

  Erosion Control Blankets

  Temporary/Permanent Seed and Mulch

  Hay mulch

There may be other areas of inspection/maintenance specific to the project during construction that may not be identified above. The Contractor is directed to utilize the 2014 Revision to the Maine Erosion and Sediment Control Field Guide for Contractors.

The Contractors representative will inspect the general erosion control items identified above including the drainage system, swales, channels, and stormwater structures to determine if a soil blockage or impaired capacity to pass flow exists. During construction, the inspection will be done prior to and within 24 hours after a storm event greater than $\frac{1}{2}$" in 24 hours. A record of inspections and maintenance or corrective measures shall be kept by the Contractor.

MAINTENANCE AND CLEANING

The earthwork contractor will regularly inspect for sediment accumulation, obstructions, debris, and other potential causes for operational difficulty in the conveyance of stormwater including the detention system. Immediate action shall be taken to remedy detrimental obstructions.

The Contractor will regularly inspect the infiltration rate of the soil filter ponds after every major storm event (1/2" rain event in 24 hours) in the first few months to ensure proper function. Sediment shall be removed from the sediment forebay when sediment is greater than 12" from the forebay bottom. The removed sediment shall be hauled off site and disposed in an approved location. Ongoing maintenance will be required as necessary.

All sand, salt, etc. accumulated when sweeping the paved parking, access road, and snow stockpile areas, shall be trucked off-site for disposal.

RECORD KEEPING

The Contractor will maintain inspection records, with recordings of condition of items identified above and annotation of substantial precipitation events or mitigating circumstances in the intervening time for trends to develop for anticipated future preventive maintenance schedule.

INSPECTIONS – Owner Post-Construction

Areas of the completed construction that will require ongoing inspections and maintenance of the stormwater system include the following:

- **Detention/Retention/Infiltration Facilities**

  Soil Filter media inspection and maintenance

  Outlet Control Structure inspection and maintenance

  Sediment removal and disposal

- **Ditches, Swales, or other open stormwater channels**

  Embankment inspection and maintenance

  Channel inspection

  Sediment removal and disposal

- **Culverts, catch basins, stormwater control structures**

  Structure inspection and maintenance

  Inlet and Outlet inspection

  Debris removal and disposal

- **Buffers/Landscaping**

  Landscaping inspection and maintenance

  Landscaping turf inspection and maintenance

  Debris removal and disposal

- **General Site Erosion Controls**

  Riprap slopes

  Level Lip Spreaders

  Permanent Seed and Mulch

There may be other areas of inspection/maintenance specific to the project identified after construction that may not be identified above. The Owner is directed to utilize the 2014 Revision to the Maine Erosion and Sediment Control Field Guide for Contractors for these situations.

The Owners representative will inspect the general erosion control items identified above including the drainage system, swales, channels, and stormwater structures to determine if a soil blockage or impaired capacity to pass flow exists. Post construction, the inspection will be done within 24 hours after a storm event greater than ½" in 24 hours. General post-construction inspections will be performed on a monthly basis from March to November, and quarterly during the remainder of the year. A record of inspections and maintenance or corrective measures shall be kept by the owner.

MAINTENANCE AND CLEANING

The Owner will regularly inspect for sediment accumulation, obstructions, debris, and other potential causes for operational difficulty in the conveyance and detention system. Immediate action shall be taken to remedy detrimental obstructions.

The Owner will regularly inspect the infiltration rate of the soil filter ponds after every major storm event (1/2" rain event in 24 hours) in the first few months to ensure proper function. Thereafter, the soil filter basin should be inspected bi-annually to ensure that they draining within 24-48 hours. Sediment shall be removed from the sediment forebay when sediment is greater than 12" within the forebay. The removed sediment shall be hauled off site and disposed in an approved location.

A mandatory scheduled maintenance will be performed every four weeks for a period of one hundred and twenty (120) days and will begin after satisfactory completion and acceptance of project construction. Ongoing maintenance may be required as necessary.

All sand, salt, etc. accumulated when vacuuming the paved parking, access road, and snow stockpile areas, shall be trucked off-site for disposal.

RECORD KEEPING

The Owner will maintain inspection records, with recordings of condition of items identified above and annotation of substantial precipitation events or mitigating circumstances in the intervening time for trends to develop the future preventive maintenance schedule.

RE-CERTIFICATION

The Owner shall submit a certification to the Maine DEP within three months of the expiration of each five year interval from the date of issuance of the permit. The owner shall submit the maintenance log which identifies inspections completed, erosion problems found, when corrective action was taken, and who completed the work. The certification will include a statement indicating that the stormwater system is working and is being maintained in working condition in accordance with the permit requirements. Specific requirements for the recertification can be found on the Maine DEP website:

https://www.maine.gov/dep/land/stormwater/stormwaterbmps/five-year-recertification.html

Maintenance Log Sheet

Inspector Name	Date	Maintenance Task Completed
Soil Filter Pond A		
Pond Embankment		
Pond Vegetation		
Pond Inlet		
Pond Outlet		
Pond Outlet Control Structure		
Underdrained Soil Filter Media		
Emergency Spillway		
Pond Volume		
Soil Filter Media		
Other		

Westerly/Southerly Ditches		
Pavement/Grass interface		
Pavement debris/sand		
Stabilized Construction Exit		
Landscaping Buffers		
Level Spreaders		
Stone Check Dams		
ESC devices installed/removed		
Winter Construction ESC		
Mulch		
90% Vegetation		
Plunge Pools		
Roof Drip Edge		
Snowplow sand/ground surface		

Housekeeping

These performance standards apply to all projects.

1. Spill prevention. Controls must be used to prevent pollutants from being discharged from materials on site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

2. Groundwater protection. During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials.

NOTE: Lack of appropriate pollutant removal best management practices (BMPs) may result in violations of the groundwater quality standard established by 38 M.R.S.A. §465-C(1).

3. Fugitive sediment and dust. Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control.

NOTE: An example of the use of BMPs to control fugitive sediment and dust is as follows: Operations during wet months that experience tracking of mud off the site onto public roads should provide for sweeping of road areas at least once a week and prior to significant storm events. Where chronic mud tracking occurs, a stabilized construction entrance should be provided. Operations during dry months, that experience fugitive dust problems, should wet down the access roads once a week or more frequently as needed.

NOTE: Dewatering a stream without a permit from the department violates state water quality standards and the Natural Resources Protection Act.

4. Debris and other materials. Litter, construction debris, and chemicals exposed to stormwater must be prevented from becoming a pollutant source.

NOTE: To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

5. Trench or foundation de-watering. Trench de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water must be removed from the ponded area, either through gravity or pumping, and must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin (or pumping water through a sediment dirtbag). Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the department.

NOTE: For guidance on de-watering controls, consult the latest edition of the Maine Erosion and Sediment Control BMPs", Maine Department of Environmental Protection."

6. Non-stormwater discharges. Identify and prevent contamination by non-stormwater discharges.

7. Additional requirements. Additional requirements may be applied on a site-specific basis.

Maintenance Plan & Best Management Practices

Site Inspection & Maintenance During Construction: Weekly inspections, as well as routine inspections following rainfalls, shall be conducted by the General Site Contractor of all temporary and permanent erosion control devices until final acceptance of the project (90% grass catch) by the Owner. Necessary repairs shall be made to correct undermining or deterioration. Final acceptance shall include a site inspection to verify the stability of all disturbed areas and slopes. Until final inspection, all erosion and sedimentation control measures shall immediately be cleaned, and repaired by the General Contractor as required. Disposal of all temporary erosion control devices shall be the responsibility of the General Contractor.

It is recommended that the Owner hire the services of the design engineer, or other qualified individual, to provide compliance inspections (during active construction) relative to implementation of the Stormwater and Erosion Control Plans. Such inspections should be limited to once a week or as necessary based on weather patterns, and be reportable to the Owner for record keeping purposes.

Maintenance Agreement: Short-term sedimentation maintenance shall be the responsibility of the Contractor to clean out all swales, structures, and soil filter basins prior to turning project over to the Owners. After project turnover, the Owner shall be the responsible party for inspecting and maintaining proper functioning of all stormwater conveyance practices and measures. The Owner may assign an environmental manager to carry out specific tasks identified below.

Structures and Other Measures

Stabilized Construction Entrance: A stabilized construction entrance is required at all locations that utilize vehicle access points from the project onto public or private paved roadways during construction operations. Tracked sediment onto public road systems shall be vacuum swept prior to the next significant rain event (1/2" rain/24 hours). Sweeping of sediment into ditches, storm drains or waterways is not acceptable

Winter Sanding/Sweeping: Post construction, paved parking lots, streets, and access driveways shall be vacuum swept a minimum of twice per year. The first shall take place in the Fall. The second vacuum sweeping shall take place after winter sanding operations terminate, prior to May 1.

Ditches/Swales: Open swales and ditches need to be inspected on a monthly basis and after a major rainfall event to assure that debris or sediments do not reduce the

effectiveness of the system. Debris needs to be removed at that time. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth to vegetation for the stability of the structure and proper functioning.

Vegetated Ditches: Vegetative should be mowed at least monthly during the growing season to a height of not less than 3 inches. Larger brush or trees must not be allowed to become established in the channel. Unless finely mulched, clippings should be removed to minimize the amount of organic material accumulating in the swales. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated. Sediment should be removed when the ditch cross section is 33% full of sediment.

Stone Lined Channels: Where stone is displaced from constructed riprap areas, it should be replaced and chinked to assure stability. With time, riprap may need to be added. Vegetation growing through riprap should be removed on a yearly schedule.

Stone Check Dams: Observe the center of the check dam to make sure it is lower that the edges. Sediment trapped behind the dams should be removed once it reaches half the height of the dam. Check to insure erosion around the sides of the dam has not occurred.

Level Lip Spreaders: Sediment/debris buildup should be removed when the pool volume is reduced by 33%. Observation of the front side of the level spreader is neessary to determine erosion along the existing vegetation/spreader interface.

Culverts: If sediment in culverts or piped drainage systems exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by mechanical means or hydraulic flushing. Care should be taken to prevent the release of the sediments into the downstream receiving areas. All. pipes should be inspected on an annual basis.

Trench Dewatering: Water is to be pumped to a soil filter bag prior to discharge from the area. Placement of the filter bag is to be greater than 100' from an environmental resource. Careful monitoring of the discharge water must be taken to insure sediment laden water does not enter downslope resources.

Catch Basin/Field Inlets: All catch basins, and any other field inlets throughout the collection system, need to be inspected on a monthly basis to assure that the inlet entry point is clear of debris and will allow the intended water entry. In many cases, a silt sack has been installed within the rim of the CB and should be emptied/replaced after each storm event in a disturbed soil area as necessary. On a yearly basis, or when sediment reaches two thirds of the total sump volume, catch basins will be vacuumed and cleaned of all accumulated sediment. Work must be done by a vacuum truck. The removed material must be disposed of in accordance with State of Maine Solid Waste Disposal Rules.

Soil Filter, Infiltration, and Wet Ponds

Clearing Inlets and Outlets of Ponds (where applicable): The inlet and outlet of a pond shall be checked periodically to ensure that flow structures are not blocked by debris. All ditches and pipes connecting ponds in series shall be checked for debris that may obstruct flow. Inspections shall be conducted monthly during wet weather conditions from March to November.

Basin Inspections: Ponds shall be inspected on an annual basis for erosion, destabilization of side slopes, embankment settling, and other signs of structural failure. Brief inspections shall be conducted following major storms. Corrective action shall be taken immediately upon identification of problem area. Records shall be kept of all maintenance operations at jobsite to help plan future work and identify problem areas.

Maintenance Dredging: Wet ponds typically lose 1% of their volume annually due to sediment accumulation. Dredging is required when accumulated volume loss reaches 15% or approximately every 15-20 years.

Drainage Area Inspections: The owners' environmental manager shall inspect the basin's drainage area semi-annually for eroding soil and other sediment sources. Repair eroding areas using appropriate erosion control BMP's immediately. Control sediment sources, such as stockpiles of winter sand, by removing them from the basin's drainage area or surrounding them with sediment control BMP's.

Mowing: A basin with a turf lining shall have its side-slopes and top of berm mowed at least twice a year to prevent woody growth. Clippings shall be removed to minimize the amount of organic material accumulating in the basin.

Sediment Removal: Remove accumulated debris and sediments from the sediment forebays, inlet plunge pools, and pre-treatment BMP's at least annually.

Snow Storage: The ponds are not to be used for snow storage. Snow storage shall be sited so that snowmelt flows to a pre-treatment BMP before reaching the infiltration basin.

Pedestrian Access: Limit access to ponds to passive recreational use.

Vehicle Access: Prohibit vehicle access to all ponds, except that authorized for maintenance.