

NOI QUESTIONS

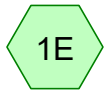
#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	11897	0.273
30	Total RRV Provided	5826	0.134
31	Is RRV Provided \geq WQv Required?	No	
32	Minimum RRV	2352	0.054
32a	Is RRV Provided \geq Minimum RRV Required?	Yes	
33a	Total WQv Treated	6071	0.139
34	Sum of Volume Reduced & Treated	11897	0.273
34	Sum of Volume Reduced and Treated	11897	0.273
35	Is Sum RRV Provided and WQv Provided \geq WQv Required?	Yes	

Apply Peak Flow Attenuation			
36	Channel Protection	<i>Cpv</i>	
37	Overbank	<i>Qp</i>	
37	Extreme Flood Control	<i>Qf</i>	
	Are Quantity Control requirements met?	Yes	Plan Completed

Runoff Reduction Volume and Treated volumes						
	Runoff Reduction Techniques/Standard SMPs		Total Contributing Area	Total Contributing Impervious Area	WQv Reduced (RRv)	WQv Treated
			(acres)	(acres)	cf	cf
Area/Volume Reduction	Conservation of Natural Areas	RR-1	0.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4		0.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRV Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4				
	Bioretention & Infiltration Bioretention	F-5	3.79	3.10	5826	6071
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention (P-1)	P-1				
	Wet Pond (P-2)	P-2				
	Wet Extended Detention (P-3)	P-3				
	Multiple Pond system (P-4)	P-4				
	Pocket Pond (p-5)	P-5				
	Surface Sand filter (F-1)	F-1				
	Underground Sand filter (F-2)	F-2				
	Perimeter Sand Filter (F-3)	F-3				
	Organic Filter (F-4)	F-4				
	Shallow Wetland (W-1)	W-1				
	Extended Detention Wetland (W-2)	W-2				
	Pond/Wetland System (W-3)	W-3				
	Pocket Wetland (W-4)	W-4				
Wet Swale (O-2)	O-2					
Totals by Area Reduction →			0.00	0.00	0	
Totals by Volume Reduction →			0.00	0.00	0	
Totals by Standard SMP w/RRV →			3.79	3.10	5826	6071
Totals by Standard SMP →			0.00	0.00		0
Totals (Area + Volume + all SMPs) →			3.79	3.10	5,826	6,071
	Impervious Cover √	okay				
	Total Area √	okay				

Bioretention Worksheet

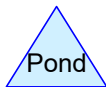
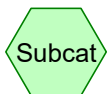
Total RRv Applied	5,826.24
Total Area	3.79
Total Impervious Area	3.10
Total Volume Treated	6,070.90
Rooftop Disconnect Impervious Area Total	0.00



Exist Site 1



Exist Site 2 Rear



Routing Diagram for Pilot_Glen Pre Dev 2021-06-22
Prepared by {enter your company name here}, Printed 6/23/2021
HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Pilot_Glen Pre Dev 2021-06-22

Prepared by {enter your company name here}

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Printed 6/23/2021

Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.337	30	Brush, Good, HSG A (1E)
14.396	73	Brush, Good, HSG D (1E, 2E)
0.069	98	Pvmt, Impervious (1E)
1.794	77	Woods, Good, HSG D (2E)
0.223	83	Woods, Poor, HSG D (1E)
17.820	70	TOTAL AREA

Pilot_Glen Pre Dev 2021-06-22

Prepared by {enter your company name here}

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Printed 6/23/2021

Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.337	HSG A	1E
0.000	HSG B	
0.000	HSG C	
16.414	HSG D	1E, 2E
0.069	Other	1E
17.820		TOTAL AREA

Pilot_Glen Pre Dev 2021-06-22

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.337	0.000	0.000	14.396	0.000	15.733	Brush, Good	1E, 2E
0.000	0.000	0.000	0.000	0.069	0.069	Pvmt, Impervious	1E
0.000	0.000	0.000	1.794	0.000	1.794	Woods, Good	2E
0.000	0.000	0.000	0.223	0.000	0.223	Woods, Poor	1E
1.337	0.000	0.000	16.414	0.069	17.820	TOTAL AREA	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1E: Exist Site 1

Runoff Area=507,933 sf 0.59% Impervious Runoff Depth=0.27"
Flow Length=1,030' Tc=35.0 min CN=68 Runoff=1.39 cfs 0.258 af

Subcatchment 2E: Exist Site 2 Rear

Runoff Area=268,299 sf 0.00% Impervious Runoff Depth=0.45"
Flow Length=440' Tc=22.4 min CN=74 Runoff=2.33 cfs 0.230 af

Reach DPE1:

Inflow=1.39 cfs 0.258 af
Outflow=1.39 cfs 0.258 af

Reach DPE2:

Inflow=2.33 cfs 0.230 af
Outflow=2.33 cfs 0.230 af

Reach TSE:

Inflow=3.25 cfs 0.488 af
Outflow=3.25 cfs 0.488 af

Total Runoff Area = 17.820 ac Runoff Volume = 0.488 af Average Runoff Depth = 0.33"
99.61% Pervious = 17.751 ac 0.39% Impervious = 0.069 ac

Summary for Subcatchment 1E: Exist Site 1

Runoff = 1.39 cfs @ 12.41 hrs, Volume= 0.258 af, Depth= 0.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 yr Rainfall=2.20"

Area (sf)	CN	Description
* 3,000	98	Pvmt, Impervious
9,718	83	Woods, Poor, HSG D
436,970	73	Brush, Good, HSG D
58,245	30	Brush, Good, HSG A
507,933	68	Weighted Average
504,933		99.41% Pervious Area
3,000		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.6	100	0.0050	0.06		Sheet Flow, Grass: Dense n= 0.240 P2= 2.80"
8.4	930	0.0130	1.84		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
35.0	1,030	Total			

Summary for Subcatchment 2E: Exist Site 2 Rear

Runoff = 2.33 cfs @ 12.19 hrs, Volume= 0.230 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 yr Rainfall=2.20"

Area (sf)	CN	Description
78,168	77	Woods, Good, HSG D
190,131	73	Brush, Good, HSG D
268,299	74	Weighted Average
268,299		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.1	100	0.0100	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 2.80"
2.3	340	0.0240	2.49		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
22.4	440	Total			

Summary for Reach DPE1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.661 ac, 0.59% Impervious, Inflow Depth = 0.27" for 1 yr event
Inflow = 1.39 cfs @ 12.41 hrs, Volume= 0.258 af
Outflow = 1.39 cfs @ 12.41 hrs, Volume= 0.258 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach DPE2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 6.159 ac, 0.00% Impervious, Inflow Depth = 0.45" for 1 yr event
Inflow = 2.33 cfs @ 12.19 hrs, Volume= 0.230 af
Outflow = 2.33 cfs @ 12.19 hrs, Volume= 0.230 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach TSE:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 17.820 ac, 0.39% Impervious, Inflow Depth = 0.33" for 1 yr event
Inflow = 3.25 cfs @ 12.25 hrs, Volume= 0.488 af
Outflow = 3.25 cfs @ 12.25 hrs, Volume= 0.488 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1E: Exist Site 1

Runoff Area=507,933 sf 0.59% Impervious Runoff Depth=1.08"
Flow Length=1,030' Tc=35.0 min CN=68 Runoff=8.84 cfs 1.050 af

Subcatchment 2E: Exist Site 2 Rear

Runoff Area=268,299 sf 0.00% Impervious Runoff Depth=1.45"
Flow Length=440' Tc=22.4 min CN=74 Runoff=9.06 cfs 0.745 af

Reach DPE1:

Inflow=8.84 cfs 1.050 af
Outflow=8.84 cfs 1.050 af

Reach DPE2:

Inflow=9.06 cfs 0.745 af
Outflow=9.06 cfs 0.745 af

Reach TSE:

Inflow=16.21 cfs 1.795 af
Outflow=16.21 cfs 1.795 af

Total Runoff Area = 17.820 ac Runoff Volume = 1.795 af Average Runoff Depth = 1.21"
99.61% Pervious = 17.751 ac 0.39% Impervious = 0.069 ac

Summary for Subcatchment 1E: Exist Site 1

Runoff = 8.84 cfs @ 12.33 hrs, Volume= 1.050 af, Depth= 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 yr Rainfall=3.80"

Area (sf)	CN	Description
* 3,000	98	Pvmt, Impervious
9,718	83	Woods, Poor, HSG D
436,970	73	Brush, Good, HSG D
58,245	30	Brush, Good, HSG A
507,933	68	Weighted Average
504,933		99.41% Pervious Area
3,000		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.6	100	0.0050	0.06		Sheet Flow, Grass: Dense n= 0.240 P2= 2.80"
8.4	930	0.0130	1.84		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
35.0	1,030	Total			

Summary for Subcatchment 2E: Exist Site 2 Rear

Runoff = 9.06 cfs @ 12.17 hrs, Volume= 0.745 af, Depth= 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 yr Rainfall=3.80"

Area (sf)	CN	Description
78,168	77	Woods, Good, HSG D
190,131	73	Brush, Good, HSG D
268,299	74	Weighted Average
268,299		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.1	100	0.0100	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 2.80"
2.3	340	0.0240	2.49		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
22.4	440	Total			

Summary for Reach DPE1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.661 ac, 0.59% Impervious, Inflow Depth = 1.08" for 10 yr event
Inflow = 8.84 cfs @ 12.33 hrs, Volume= 1.050 af
Outflow = 8.84 cfs @ 12.33 hrs, Volume= 1.050 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach DPE2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 6.159 ac, 0.00% Impervious, Inflow Depth = 1.45" for 10 yr event
Inflow = 9.06 cfs @ 12.17 hrs, Volume= 0.745 af
Outflow = 9.06 cfs @ 12.17 hrs, Volume= 0.745 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach TSE:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 17.820 ac, 0.39% Impervious, Inflow Depth = 1.21" for 10 yr event
Inflow = 16.21 cfs @ 12.22 hrs, Volume= 1.795 af
Outflow = 16.21 cfs @ 12.22 hrs, Volume= 1.795 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1E: Exist Site 1

Runoff Area=507,933 sf 0.59% Impervious Runoff Depth=2.78"
Flow Length=1,030' Tc=35.0 min CN=68 Runoff=24.90 cfs 2.697 af

Subcatchment 2E: Exist Site 2 Rear

Runoff Area=268,299 sf 0.00% Impervious Runoff Depth=3.35"
Flow Length=440' Tc=22.4 min CN=74 Runoff=21.51 cfs 1.721 af

Reach DPE1:

Inflow=24.90 cfs 2.697 af
Outflow=24.90 cfs 2.697 af

Reach DPE2:

Inflow=21.51 cfs 1.721 af
Outflow=21.51 cfs 1.721 af

Reach TSE:

Inflow=42.75 cfs 4.418 af
Outflow=42.75 cfs 4.418 af

Total Runoff Area = 17.820 ac Runoff Volume = 4.418 af Average Runoff Depth = 2.98"
99.61% Pervious = 17.751 ac 0.39% Impervious = 0.069 ac

Summary for Subcatchment 1E: Exist Site 1

Runoff = 24.90 cfs @ 12.32 hrs, Volume= 2.697 af, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 yr Rainfall=6.20"

Area (sf)	CN	Description
* 3,000	98	Pvmt, Impervious
9,718	83	Woods, Poor, HSG D
436,970	73	Brush, Good, HSG D
58,245	30	Brush, Good, HSG A
507,933	68	Weighted Average
504,933		99.41% Pervious Area
3,000		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.6	100	0.0050	0.06		Sheet Flow, Grass: Dense n= 0.240 P2= 2.80"
8.4	930	0.0130	1.84		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
35.0	1,030	Total			

Summary for Subcatchment 2E: Exist Site 2 Rear

Runoff = 21.51 cfs @ 12.15 hrs, Volume= 1.721 af, Depth= 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 yr Rainfall=6.20"

Area (sf)	CN	Description
78,168	77	Woods, Good, HSG D
190,131	73	Brush, Good, HSG D
268,299	74	Weighted Average
268,299		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.1	100	0.0100	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 2.80"
2.3	340	0.0240	2.49		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
22.4	440	Total			

Summary for Reach DPE1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11.661 ac, 0.59% Impervious, Inflow Depth = 2.78" for 100 yr event
Inflow = 24.90 cfs @ 12.32 hrs, Volume= 2.697 af
Outflow = 24.90 cfs @ 12.32 hrs, Volume= 2.697 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach DPE2:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 6.159 ac, 0.00% Impervious, Inflow Depth = 3.35" for 100 yr event
Inflow = 21.51 cfs @ 12.15 hrs, Volume= 1.721 af
Outflow = 21.51 cfs @ 12.15 hrs, Volume= 1.721 af, Atten= 0%, Lag= 0.0 min

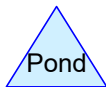
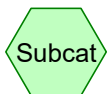
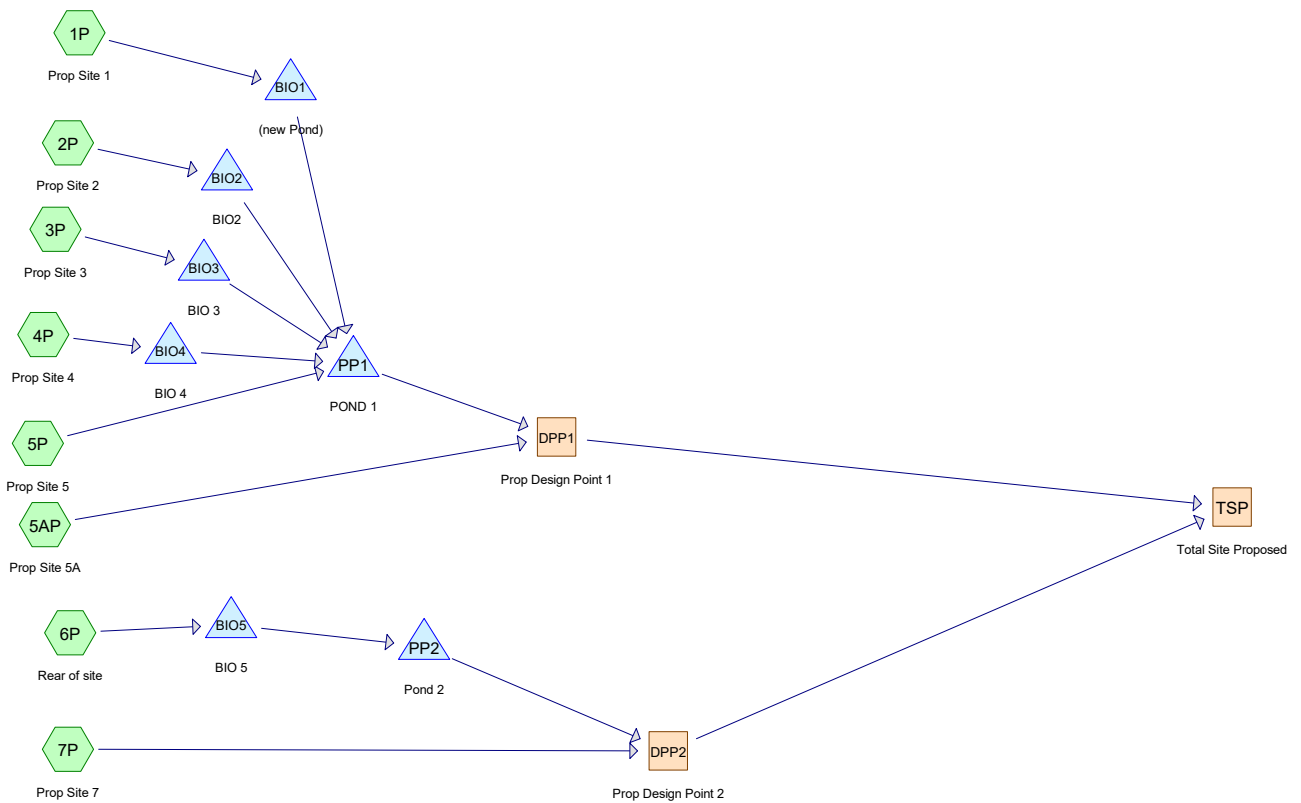
Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach TSE:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 17.820 ac, 0.39% Impervious, Inflow Depth = 2.98" for 100 yr event
Inflow = 42.75 cfs @ 12.22 hrs, Volume= 4.418 af
Outflow = 42.75 cfs @ 12.22 hrs, Volume= 4.418 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs



Routing Diagram for Pilot_Glen Post Dev 2021-06-22
 Prepared by {enter your company name here}, Printed 6/23/2021
 HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Pilot_Glen Post Dev 2021-06-22

Prepared by {enter your company name here}

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Printed 6/23/2021

Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.356	39	>75% Grass cover, Good, HSG A (5P)
2.550	80	>75% Grass cover, Good, HSG D (1P, 2P, 3P, 4P, 5AP, 5P, 6P)
5.571	73	Brush, Good, HSG D (5AP, 7P)
0.145	98	Imp (5AP)
7.541	98	Pvmt, Impervious (1P, 2P, 3P, 4P, 6P)
1.656	77	Woods, Good, HSG D (7P)
17.820	84	TOTAL AREA

Pilot_Glen Post Dev 2021-06-22

Prepared by {enter your company name here}

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Printed 6/23/2021

Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.356	HSG A	5P
0.000	HSG B	
0.000	HSG C	
9.778	HSG D	1P, 2P, 3P, 4P, 5AP, 5P, 6P, 7P
7.687	Other	1P, 2P, 3P, 4P, 5AP, 6P
17.820		TOTAL AREA

Pilot_Glen Post Dev 2021-06-22

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.356	0.000	0.000	2.550	0.000	2.906	>75% Grass cover, Good	1P, 2P, 3P, 4P, 5AP, 5P, 6P
0.000	0.000	0.000	5.571	0.000	5.571	Brush, Good	5AP, 7P
0.000	0.000	0.000	0.000	0.145	0.145	Imp	5AP
0.000	0.000	0.000	0.000	7.541	7.541	Pvmt, Impervious	1P, 2P, 3P, 4P, 6P
0.000	0.000	0.000	1.656	0.000	1.656	Woods, Good	7P
0.356	0.000	0.000	9.778	7.687	17.820	TOTAL AREA	

Pilot_Glen Post Dev 2021-06-22

Type II 24-hr 1 yr Rainfall=2.20"

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 5

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1P: Prop Site 1	Runoff Area=98,009 sf 73.78% Impervious Runoff Depth=1.50" Tc=6.0 min CN=93 Runoff=5.81 cfs 0.281 af
Subcatchment 2P: Prop Site 2	Runoff Area=44,621 sf 77.59% Impervious Runoff Depth=1.58" Tc=6.0 min CN=94 Runoff=2.76 cfs 0.135 af
Subcatchment 3P: Prop Site 3	Runoff Area=33,963 sf 73.11% Impervious Runoff Depth=1.50" Tc=6.0 min CN=93 Runoff=2.01 cfs 0.097 af
Subcatchment 4P: Prop Site 4	Runoff Area=68,516 sf 80.94% Impervious Runoff Depth=1.67" Tc=6.0 min CN=95 Runoff=4.41 cfs 0.219 af
Subcatchment 5AP: Prop Site 5A	Runoff Area=139,058 sf 4.56% Impervious Runoff Depth=0.48" Flow Length=760' Tc=29.3 min CN=75 Runoff=1.12 cfs 0.129 af
Subcatchment 5P: Prop Site 5	Runoff Area=32,314 sf 0.00% Impervious Runoff Depth=0.10" Tc=6.0 min CN=60 Runoff=0.02 cfs 0.006 af
Subcatchment 6P: Rear of site	Runoff Area=162,658 sf 86.85% Impervious Runoff Depth=1.77" Tc=6.0 min CN=96 Runoff=10.85 cfs 0.550 af
Subcatchment 7P: Prop Site 7	Runoff Area=197,099 sf 0.00% Impervious Runoff Depth=0.45" Flow Length=440' Tc=22.4 min CN=74 Runoff=1.71 cfs 0.169 af
Reach DPP1: Prop Design Point 1	Inflow=1.12 cfs 0.134 af Outflow=1.12 cfs 0.134 af
Reach DPP2: Prop Design Point 2	Inflow=1.73 cfs 0.288 af Outflow=1.73 cfs 0.288 af
Reach TSP: Total Site Proposed	Inflow=2.77 cfs 0.422 af Outflow=2.77 cfs 0.422 af
Pond BIO1: (new Pond)	Peak Elev=294.55' Storage=5,600 cf Inflow=5.81 cfs 0.281 af Discarded=0.06 cfs 0.197 af Primary=1.37 cfs 0.084 af Outflow=1.43 cfs 0.281 af
Pond BIO2: BIO2	Peak Elev=296.70' Storage=1,807 cf Inflow=2.76 cfs 0.135 af Discarded=0.02 cfs 0.051 af Primary=2.39 cfs 0.084 af Outflow=2.41 cfs 0.135 af
Pond BIO3: BIO 3	Peak Elev=294.53' Storage=1,234 cf Inflow=2.01 cfs 0.097 af Discarded=0.02 cfs 0.047 af Primary=1.99 cfs 0.051 af Outflow=2.01 cfs 0.097 af
Pond BIO4: BIO 4	Peak Elev=291.67' Storage=3,927 cf Inflow=4.41 cfs 0.219 af Discarded=0.04 cfs 0.116 af Primary=2.38 cfs 0.103 af Outflow=2.41 cfs 0.219 af
Pond BIO5: BIO 5	Peak Elev=299.06' Storage=6,119 cf Inflow=10.85 cfs 0.550 af Discarded=0.07 cfs 0.227 af Primary=10.64 cfs 0.324 af Outflow=10.71 cfs 0.550 af

Pilot_Glen Post Dev 2021-06-22

Type II 24-hr 1 yr Rainfall=2.20"

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 6

Pond PP1: POND 1

Peak Elev=287.65' Storage=14,258 cf Inflow=6.24 cfs 0.328 af
Outflow=0.00 cfs 0.005 af

Pond PP2: Pond 2

Peak Elev=296.03' Storage=13,019 cf Inflow=10.64 cfs 0.324 af
Outflow=0.03 cfs 0.120 af

Total Runoff Area = 17.820 ac Runoff Volume = 1.587 af Average Runoff Depth = 1.07"
56.86% Pervious = 10.133 ac 43.14% Impervious = 7.687 ac

Summary for Subcatchment 1P: Prop Site 1

Runoff = 5.81 cfs @ 11.97 hrs, Volume= 0.281 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 yr Rainfall=2.20"

	Area (sf)	CN	Description
*	72,309	98	Pvmt, Impervious
	25,700	80	>75% Grass cover, Good, HSG D
	98,009	93	Weighted Average
	25,700		26.22% Pervious Area
	72,309		73.78% Impervious Area

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

Summary for Subcatchment 2P: Prop Site 2

Runoff = 2.76 cfs @ 11.97 hrs, Volume= 0.135 af, Depth= 1.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 yr Rainfall=2.20"

	Area (sf)	CN	Description
*	34,622	98	Pvmt, Impervious
	9,999	80	>75% Grass cover, Good, HSG D
	44,621	94	Weighted Average
	9,999		22.41% Pervious Area
	34,622		77.59% Impervious Area

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

Summary for Subcatchment 3P: Prop Site 3

Runoff = 2.01 cfs @ 11.97 hrs, Volume= 0.097 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 yr Rainfall=2.20"

	Area (sf)	CN	Description
*	24,829	98	Pvmt, Impervious
	9,134	80	>75% Grass cover, Good, HSG D
	33,963	93	Weighted Average
	9,134		26.89% Pervious Area
	24,829		73.11% Impervious Area

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

Summary for Subcatchment 4P: Prop Site 4

Runoff = 4.41 cfs @ 11.97 hrs, Volume= 0.219 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 yr Rainfall=2.20"

Area (sf)	CN	Description
* 55,459	98	Pvmt, Impervious
13,057	80	>75% Grass cover, Good, HSG D
68,516	95	Weighted Average
13,057		19.06% Pervious Area
55,459		80.94% Impervious Area

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

Summary for Subcatchment 5AP: Prop Site 5A

Runoff = 1.12 cfs @ 12.27 hrs, Volume= 0.129 af, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 yr Rainfall=2.20"

Area (sf)	CN	Description
* 117,722	73	Brush, Good, HSG D
15,000	80	>75% Grass cover, Good, HSG D
* 6,336	98	Imp
139,058	75	Weighted Average
132,722		95.44% Pervious Area
6,336		4.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.7	100	0.0060	0.07		Sheet Flow,
					Grass: Dense n= 0.240 P2= 2.80"
4.6	660	0.0220	2.39		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
29.3	760	Total			

Summary for Subcatchment 5P: Prop Site 5

Runoff = 0.02 cfs @ 12.05 hrs, Volume= 0.006 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 yr Rainfall=2.20"

Area (sf)	CN	Description
15,492	39	>75% Grass cover, Good, HSG A
16,822	80	>75% Grass cover, Good, HSG D
32,314	60	Weighted Average
32,314		100.00% Pervious Area

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

Summary for Subcatchment 6P: Rear of site

Runoff = 10.85 cfs @ 11.97 hrs, Volume= 0.550 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 yr Rainfall=2.20"

Area (sf)	CN	Description
* 141,276	98	Pvmt, Impervious
21,382	80	>75% Grass cover, Good, HSG D
162,658	96	Weighted Average
21,382		13.15% Pervious Area
141,276		86.85% Impervious Area

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

Summary for Subcatchment 7P: Prop Site 7

Runoff = 1.71 cfs @ 12.19 hrs, Volume= 0.169 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 1 yr Rainfall=2.20"

Area (sf)	CN	Description
72,145	77	Woods, Good, HSG D
124,954	73	Brush, Good, HSG D
197,099	74	Weighted Average
197,099		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.1	100	0.0100	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 2.80"
2.3	340	0.0240	2.49		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
22.4	440	Total			

Summary for Reach DPP1: Prop Design Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.561 ac, 46.47% Impervious, Inflow Depth > 0.17" for 1 yr event
 Inflow = 1.12 cfs @ 12.27 hrs, Volume= 0.134 af
 Outflow = 1.12 cfs @ 12.27 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach DPP2: Prop Design Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.259 ac, 39.27% Impervious, Inflow Depth > 0.42" for 1 yr event
 Inflow = 1.73 cfs @ 12.19 hrs, Volume= 0.288 af
 Outflow = 1.73 cfs @ 12.19 hrs, Volume= 0.288 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach TSP: Total Site Proposed

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 17.820 ac, 43.14% Impervious, Inflow Depth > 0.28" for 1 yr event
 Inflow = 2.77 cfs @ 12.22 hrs, Volume= 0.422 af
 Outflow = 2.77 cfs @ 12.22 hrs, Volume= 0.422 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond BIO1: (new Pond)

Inflow Area = 2.250 ac, 73.78% Impervious, Inflow Depth = 1.50" for 1 yr event
 Inflow = 5.81 cfs @ 11.97 hrs, Volume= 0.281 af
 Outflow = 1.43 cfs @ 12.11 hrs, Volume= 0.281 af, Atten= 75%, Lag= 8.5 min
 Discarded = 0.06 cfs @ 12.11 hrs, Volume= 0.197 af
 Primary = 1.37 cfs @ 12.11 hrs, Volume= 0.084 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 294.55' @ 12.11 hrs Surf.Area= 10,545 sf Storage= 5,600 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Pilot_Glen Post Dev 2021-06-22

Type II 24-hr 1 yr Rainfall=2.20"

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 11

Center-of-Mass det. time= 603.0 min (1,406.2 - 803.2)

Volume	Invert	Avail.Storage	Storage Description
#1	294.00'	10,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
294.00	10,000	0	0
295.00	11,000	10,500	10,500

Device	Routing	Invert	Outlet Devices
#1	Primary	294.50'	60.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	294.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 12.11 hrs HW=294.55' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=1.37 cfs @ 12.11 hrs HW=294.55' TW=286.84' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 1.37 cfs @ 0.51 fps)

Summary for Pond BIO2: BIO2

Inflow Area = 1.024 ac, 77.59% Impervious, Inflow Depth = 1.58" for 1 yr event
 Inflow = 2.76 cfs @ 11.97 hrs, Volume= 0.135 af
 Outflow = 2.41 cfs @ 12.01 hrs, Volume= 0.135 af, Atten= 13%, Lag= 2.4 min
 Discarded = 0.02 cfs @ 12.01 hrs, Volume= 0.051 af
 Primary = 2.39 cfs @ 12.01 hrs, Volume= 0.084 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 296.70' @ 12.01 hrs Surf.Area= 2,641 sf Storage= 1,807 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 328.5 min (1,125.5 - 797.0)

Volume	Invert	Avail.Storage	Storage Description
#1	296.00'	2,600 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.00	2,500	0	0
297.00	2,700	2,600	2,600

Device	Routing	Invert	Outlet Devices
#1	Primary	296.50'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	296.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 12.01 hrs HW=296.70' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=2.39 cfs @ 12.01 hrs HW=296.70' TW=286.64' (Dynamic Tailwater)

↳ **1=Orifice/Grate** (Weir Controls 2.39 cfs @ 1.47 fps)

Summary for Pond BIO3: BIO 3

Inflow Area = 0.780 ac, 73.11% Impervious, Inflow Depth = 1.50" for 1 yr event
 Inflow = 2.01 cfs @ 11.97 hrs, Volume= 0.097 af
 Outflow = 2.01 cfs @ 11.98 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.4 min
 Discarded = 0.02 cfs @ 11.98 hrs, Volume= 0.047 af
 Primary = 1.99 cfs @ 11.98 hrs, Volume= 0.051 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 294.53' @ 11.98 hrs Surf.Area= 2,680 sf Storage= 1,234 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 395.9 min (1,199.1 - 803.2)

Volume	Invert	Avail.Storage	Storage Description
#1	294.00'	2,646 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
294.00	2,006	0	0
295.00	3,285	2,646	2,646

Device	Routing	Invert	Outlet Devices
#1	Primary	294.50'	190.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	294.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 11.98 hrs HW=294.53' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.99 cfs @ 11.98 hrs HW=294.53' TW=286.58' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 1.99 cfs @ 0.39 fps)

Summary for Pond BIO4: BIO 4

Inflow Area = 1.573 ac, 80.94% Impervious, Inflow Depth = 1.67" for 1 yr event
 Inflow = 4.41 cfs @ 11.97 hrs, Volume= 0.219 af
 Outflow = 2.41 cfs @ 12.05 hrs, Volume= 0.219 af, Atten= 45%, Lag= 5.0 min
 Discarded = 0.04 cfs @ 12.05 hrs, Volume= 0.116 af
 Primary = 2.38 cfs @ 12.05 hrs, Volume= 0.103 af

Pilot_Glen Post Dev 2021-06-22

Type II 24-hr 1 yr Rainfall=2.20"

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 13

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 291.67' @ 12.05 hrs Surf.Area= 6,231 sf Storage= 3,927 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 447.1 min (1,237.1 - 790.1)

Volume	Invert	Avail.Storage	Storage Description
#1	291.00'	12,833 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
291.00	5,420	0	0
292.00	6,623	6,022	6,022
293.00	7,000	6,812	12,833

Device	Routing	Invert	Outlet Devices
#1	Primary	291.50'	30.0" x 30.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	291.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.05 hrs HW=291.67' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=2.37 cfs @ 12.05 hrs HW=291.67' TW=286.73' (Dynamic Tailwater)
 ↑**1=Orifice/Grate** (Weir Controls 2.37 cfs @ 1.36 fps)

Summary for Pond BIO5: BIO 5

Inflow Area = 3.734 ac, 86.85% Impervious, Inflow Depth = 1.77" for 1 yr event
 Inflow = 10.85 cfs @ 11.97 hrs, Volume= 0.550 af
 Outflow = 10.71 cfs @ 11.98 hrs, Volume= 0.550 af, Atten= 1%, Lag= 0.7 min
 Discarded = 0.07 cfs @ 11.98 hrs, Volume= 0.227 af
 Primary = 10.64 cfs @ 11.98 hrs, Volume= 0.324 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 299.06' @ 11.98 hrs Surf.Area= 12,129 sf Storage= 6,119 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 333.6 min (1,115.7 - 782.1)

Volume	Invert	Avail.Storage	Storage Description
#1	298.50'	18,581 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.50	9,575	0	0
299.00	11,982	5,389	5,389
300.00	14,402	13,192	18,581

Device	Routing	Invert	Outlet Devices
#1	Primary	299.00'	300.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	298.50'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 11.98 hrs HW=299.06' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=10.64 cfs @ 11.98 hrs HW=299.06' TW=295.30' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 10.64 cfs @ 0.59 fps)

Summary for Pond PP1: POND 1

Inflow Area = 6.369 ac, 67.49% Impervious, Inflow Depth = 0.62" for 1 yr event
 Inflow = 6.24 cfs @ 12.05 hrs, Volume= 0.328 af
 Outflow = 0.00 cfs @ 24.23 hrs, Volume= 0.005 af, Atten= 100%, Lag= 730.7 min
 Primary = 0.00 cfs @ 24.23 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 287.65' @ 24.23 hrs Surf.Area= 14,049 sf Storage= 14,258 cf

Plug-Flow detention time= 1,824.0 min calculated for 0.005 af (2% of inflow)
 Center-of-Mass det. time= 1,727.8 min (2,539.3 - 811.5)

Volume	Invert	Avail.Storage	Storage Description
#1	286.50'	74,872 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
286.50	10,000	0	0
287.00	12,472	5,618	5,618
291.00	22,155	69,254	74,872

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	18.0" Vert. Orifice/Grate C= 0.600
#2	Device 1	290.20'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	288.50'	24.0" W x 12.0" H Vert. Orifice/Grate C= 0.600
#4	Device 1	288.50'	6.0" Vert. Orifice/Grate C= 0.600
#5	Device 1	286.50'	0.2" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.00 cfs @ 24.23 hrs HW=287.65' TW=0.00' (Dynamic Tailwater)

↳ **1=Orifice/Grate** (Passes 0.00 cfs of 5.32 cfs potential flow)

↳ **2=Orifice/Grate** (Controls 0.00 cfs)

↳ **3=Orifice/Grate** (Controls 0.00 cfs)

↳ **4=Orifice/Grate** (Controls 0.00 cfs)

↳ **5=Orifice/Grate** (Orifice Controls 0.00 cfs @ 5.15 fps)

Summary for Pond PP2: Pond 2

Inflow Area = 3.734 ac, 86.85% Impervious, Inflow Depth = 1.04" for 1 yr event
 Inflow = 10.64 cfs @ 11.98 hrs, Volume= 0.324 af
 Outflow = 0.03 cfs @ 22.49 hrs, Volume= 0.120 af, Atten= 100%, Lag= 630.4 min
 Primary = 0.03 cfs @ 22.49 hrs, Volume= 0.120 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 296.03' @ 22.49 hrs Surf.Area= 13,653 sf Storage= 13,019 cf

Plug-Flow detention time= 1,752.9 min calculated for 0.120 af (37% of inflow)
 Center-of-Mass det. time= 1,677.3 min (2,469.9 - 792.6)

Volume	Invert	Avail.Storage	Storage Description
#1	295.00'	61,906 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
295.00	11,733	0	0
299.00	19,220	61,906	61,906

Device	Routing	Invert	Outlet Devices
#1	Primary	295.00'	1.0" Vert. Orifice/Grate C= 0.600
#2	Primary	297.00'	12.0" W x 12.0" H Vert. Orifice/Grate C= 0.600
#3	Primary	298.25'	15.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.03 cfs @ 22.49 hrs HW=296.03' TW=0.00' (Dynamic Tailwater)

- 1=Orifice/Grate (Orifice Controls 0.03 cfs @ 4.78 fps)
- 2=Orifice/Grate (Controls 0.00 cfs)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1P: Prop Site 1	Runoff Area=98,009 sf 73.78% Impervious Runoff Depth=3.03" Tc=6.0 min CN=93 Runoff=11.23 cfs 0.567 af
Subcatchment 2P: Prop Site 2	Runoff Area=44,621 sf 77.59% Impervious Runoff Depth=3.13" Tc=6.0 min CN=94 Runoff=5.21 cfs 0.267 af
Subcatchment 3P: Prop Site 3	Runoff Area=33,963 sf 73.11% Impervious Runoff Depth=3.03" Tc=6.0 min CN=93 Runoff=3.89 cfs 0.197 af
Subcatchment 4P: Prop Site 4	Runoff Area=68,516 sf 80.94% Impervious Runoff Depth=3.23" Tc=6.0 min CN=95 Runoff=8.15 cfs 0.424 af
Subcatchment 5AP: Prop Site 5A	Runoff Area=139,058 sf 4.56% Impervious Runoff Depth=1.52" Flow Length=760' Tc=29.3 min CN=75 Runoff=4.14 cfs 0.404 af
Subcatchment 5P: Prop Site 5	Runoff Area=32,314 sf 0.00% Impervious Runoff Depth=0.67" Tc=6.0 min CN=60 Runoff=0.78 cfs 0.041 af
Subcatchment 6P: Rear of site	Runoff Area=162,658 sf 86.85% Impervious Runoff Depth=3.34" Tc=6.0 min CN=96 Runoff=19.66 cfs 1.040 af
Subcatchment 7P: Prop Site 7	Runoff Area=197,099 sf 0.00% Impervious Runoff Depth=1.45" Flow Length=440' Tc=22.4 min CN=74 Runoff=6.65 cfs 0.547 af
Reach DPP1: Prop Design Point 1	Inflow=4.14 cfs 0.842 af Outflow=4.14 cfs 0.842 af
Reach DPP2: Prop Design Point 2	Inflow=6.69 cfs 0.845 af Outflow=6.69 cfs 0.845 af
Reach TSP: Total Site Proposed	Inflow=10.55 cfs 1.686 af Outflow=10.55 cfs 1.686 af
Pond BIO1: (new Pond)	Peak Elev=294.67' Storage=6,969 cf Inflow=11.23 cfs 0.567 af Discarded=0.06 cfs 0.212 af Primary=10.38 cfs 0.355 af Outflow=10.44 cfs 0.567 af
Pond BIO2: BIO2	Peak Elev=296.83' Storage=2,135 cf Inflow=5.21 cfs 0.267 af Discarded=0.02 cfs 0.055 af Primary=4.88 cfs 0.213 af Outflow=4.90 cfs 0.267 af
Pond BIO3: BIO 3	Peak Elev=294.54' Storage=1,275 cf Inflow=3.89 cfs 0.197 af Discarded=0.02 cfs 0.050 af Primary=3.86 cfs 0.147 af Outflow=3.88 cfs 0.197 af
Pond BIO4: BIO 4	Peak Elev=291.86' Storage=5,082 cf Inflow=8.15 cfs 0.424 af Discarded=0.04 cfs 0.124 af Primary=6.96 cfs 0.300 af Outflow=6.99 cfs 0.424 af
Pond BIO5: BIO 5	Peak Elev=299.09' Storage=6,483 cf Inflow=19.66 cfs 1.040 af Discarded=0.07 cfs 0.239 af Primary=19.43 cfs 0.801 af Outflow=19.50 cfs 1.040 af

Pilot_Glen Post Dev 2021-06-22

Type II 24-hr 10 yr Rainfall=3.80"

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 17

Pond PP1: POND 1

Peak Elev=288.75' Storage=31,213 cf Inflow=26.62 cfs 1.055 af
Outflow=0.99 cfs 0.438 af

Pond PP2: Pond 2

Peak Elev=297.15' Storage=29,474 cf Inflow=19.43 cfs 0.801 af
Outflow=0.22 cfs 0.298 af

Total Runoff Area = 17.820 ac Runoff Volume = 3.487 af Average Runoff Depth = 2.35"
56.86% Pervious = 10.133 ac 43.14% Impervious = 7.687 ac

Summary for Subcatchment 1P: Prop Site 1

Runoff = 11.23 cfs @ 11.97 hrs, Volume= 0.567 af, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 yr Rainfall=3.80"

	Area (sf)	CN	Description
*	72,309	98	Pvmt, Impervious
	25,700	80	>75% Grass cover, Good, HSG D
	98,009	93	Weighted Average
	25,700		26.22% Pervious Area
	72,309		73.78% Impervious Area

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

Summary for Subcatchment 2P: Prop Site 2

Runoff = 5.21 cfs @ 11.97 hrs, Volume= 0.267 af, Depth= 3.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 yr Rainfall=3.80"

	Area (sf)	CN	Description
*	34,622	98	Pvmt, Impervious
	9,999	80	>75% Grass cover, Good, HSG D
	44,621	94	Weighted Average
	9,999		22.41% Pervious Area
	34,622		77.59% Impervious Area

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

Summary for Subcatchment 3P: Prop Site 3

Runoff = 3.89 cfs @ 11.97 hrs, Volume= 0.197 af, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 yr Rainfall=3.80"

	Area (sf)	CN	Description
*	24,829	98	Pvmt, Impervious
	9,134	80	>75% Grass cover, Good, HSG D
	33,963	93	Weighted Average
	9,134		26.89% Pervious Area
	24,829		73.11% Impervious Area

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

Summary for Subcatchment 4P: Prop Site 4

Runoff = 8.15 cfs @ 11.97 hrs, Volume= 0.424 af, Depth= 3.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 yr Rainfall=3.80"

Area (sf)	CN	Description
* 55,459	98	Pvmt, Impervious
13,057	80	>75% Grass cover, Good, HSG D
68,516	95	Weighted Average
13,057		19.06% Pervious Area
55,459		80.94% Impervious Area

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

Summary for Subcatchment 5AP: Prop Site 5A

Runoff = 4.14 cfs @ 12.24 hrs, Volume= 0.404 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 yr Rainfall=3.80"

Area (sf)	CN	Description
* 117,722	73	Brush, Good, HSG D
15,000	80	>75% Grass cover, Good, HSG D
* 6,336	98	Imp
139,058	75	Weighted Average
132,722		95.44% Pervious Area
6,336		4.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.7	100	0.0060	0.07		Sheet Flow,
					Grass: Dense n= 0.240 P2= 2.80"
4.6	660	0.0220	2.39		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
29.3	760	Total			

Summary for Subcatchment 5P: Prop Site 5

Runoff = 0.78 cfs @ 11.99 hrs, Volume= 0.041 af, Depth= 0.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 yr Rainfall=3.80"

Area (sf)	CN	Description
15,492	39	>75% Grass cover, Good, HSG A
16,822	80	>75% Grass cover, Good, HSG D
32,314	60	Weighted Average
32,314		100.00% Pervious Area

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

Summary for Subcatchment 6P: Rear of site

Runoff = 19.66 cfs @ 11.97 hrs, Volume= 1.040 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 yr Rainfall=3.80"

Area (sf)	CN	Description
* 141,276	98	Pvmt, Impervious
21,382	80	>75% Grass cover, Good, HSG D
162,658	96	Weighted Average
21,382		13.15% Pervious Area
141,276		86.85% Impervious Area

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

Summary for Subcatchment 7P: Prop Site 7

Runoff = 6.65 cfs @ 12.17 hrs, Volume= 0.547 af, Depth= 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10 yr Rainfall=3.80"

Area (sf)	CN	Description
72,145	77	Woods, Good, HSG D
124,954	73	Brush, Good, HSG D
197,099	74	Weighted Average
197,099		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.1	100	0.0100	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 2.80"
2.3	340	0.0240	2.49		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
22.4	440	Total			

Summary for Reach DPP1: Prop Design Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.561 ac, 46.47% Impervious, Inflow Depth > 1.06" for 10 yr event
 Inflow = 4.14 cfs @ 12.24 hrs, Volume= 0.842 af
 Outflow = 4.14 cfs @ 12.24 hrs, Volume= 0.842 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach DPP2: Prop Design Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.259 ac, 39.27% Impervious, Inflow Depth > 1.23" for 10 yr event
 Inflow = 6.69 cfs @ 12.17 hrs, Volume= 0.845 af
 Outflow = 6.69 cfs @ 12.17 hrs, Volume= 0.845 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach TSP: Total Site Proposed

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 17.820 ac, 43.14% Impervious, Inflow Depth > 1.14" for 10 yr event
 Inflow = 10.55 cfs @ 12.19 hrs, Volume= 1.686 af
 Outflow = 10.55 cfs @ 12.19 hrs, Volume= 1.686 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond BIO1: (new Pond)

Inflow Area = 2.250 ac, 73.78% Impervious, Inflow Depth = 3.03" for 10 yr event
 Inflow = 11.23 cfs @ 11.97 hrs, Volume= 0.567 af
 Outflow = 10.44 cfs @ 12.00 hrs, Volume= 0.567 af, Atten= 7%, Lag= 1.7 min
 Discarded = 0.06 cfs @ 12.00 hrs, Volume= 0.212 af
 Primary = 10.38 cfs @ 12.00 hrs, Volume= 0.355 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 294.67' @ 12.00 hrs Surf.Area= 10,674 sf Storage= 6,969 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Pilot_Glen Post Dev 2021-06-22

Type II 24-hr 10 yr Rainfall=3.80"

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 22

Center-of-Mass det. time= 316.6 min (1,100.2 - 783.6)

Volume	Invert	Avail.Storage	Storage Description
#1	294.00'	10,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
294.00	10,000	0	0
295.00	11,000	10,500	10,500

Device	Routing	Invert	Outlet Devices
#1	Primary	294.50'	60.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	294.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 12.00 hrs HW=294.67' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=10.36 cfs @ 12.00 hrs HW=294.67' TW=287.58' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 10.36 cfs @ 0.99 fps)

Summary for Pond BIO2: BIO2

Inflow Area = 1.024 ac, 77.59% Impervious, Inflow Depth = 3.13" for 10 yr event
 Inflow = 5.21 cfs @ 11.97 hrs, Volume= 0.267 af
 Outflow = 4.90 cfs @ 11.99 hrs, Volume= 0.267 af, Atten= 6%, Lag= 1.6 min
 Discarded = 0.02 cfs @ 11.99 hrs, Volume= 0.055 af
 Primary = 4.88 cfs @ 11.99 hrs, Volume= 0.213 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 296.83' @ 11.99 hrs Surf.Area= 2,665 sf Storage= 2,135 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 180.8 min (959.1 - 778.3)

Volume	Invert	Avail.Storage	Storage Description
#1	296.00'	2,600 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.00	2,500	0	0
297.00	2,700	2,600	2,600

Device	Routing	Invert	Outlet Devices
#1	Primary	296.50'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	296.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 11.99 hrs HW=296.83' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=4.88 cfs @ 11.99 hrs HW=296.83' TW=287.56' (Dynamic Tailwater)

↳ **1=Orifice/Grate** (Weir Controls 4.88 cfs @ 1.87 fps)

Summary for Pond BIO3: BIO 3

Inflow Area = 0.780 ac, 73.11% Impervious, Inflow Depth = 3.03" for 10 yr event
 Inflow = 3.89 cfs @ 11.97 hrs, Volume= 0.197 af
 Outflow = 3.88 cfs @ 11.97 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.3 min
 Discarded = 0.02 cfs @ 11.97 hrs, Volume= 0.050 af
 Primary = 3.86 cfs @ 11.97 hrs, Volume= 0.147 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 294.54' @ 11.97 hrs Surf.Area= 2,699 sf Storage= 1,275 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 207.2 min (990.8 - 783.6)

Volume	Invert	Avail.Storage	Storage Description
#1	294.00'	2,646 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
294.00	2,006	0	0
295.00	3,285	2,646	2,646

Device	Routing	Invert	Outlet Devices
#1	Primary	294.50'	190.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	294.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 11.97 hrs HW=294.54' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=3.86 cfs @ 11.97 hrs HW=294.54' TW=287.41' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 3.86 cfs @ 0.49 fps)

Summary for Pond BIO4: BIO 4

Inflow Area = 1.573 ac, 80.94% Impervious, Inflow Depth = 3.23" for 10 yr event
 Inflow = 8.15 cfs @ 11.97 hrs, Volume= 0.424 af
 Outflow = 6.99 cfs @ 12.01 hrs, Volume= 0.424 af, Atten= 14%, Lag= 2.5 min
 Discarded = 0.04 cfs @ 12.01 hrs, Volume= 0.124 af
 Primary = 6.96 cfs @ 12.01 hrs, Volume= 0.300 af

Pilot_Glen Post Dev 2021-06-22

Type II 24-hr 10 yr Rainfall=3.80"

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 24

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 291.86' @ 12.01 hrs Surf.Area= 6,450 sf Storage= 5,082 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 250.2 min (1,022.5 - 772.4)

Volume	Invert	Avail.Storage	Storage Description
#1	291.00'	12,833 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
291.00	5,420	0	0
292.00	6,623	6,022	6,022
293.00	7,000	6,812	12,833

Device	Routing	Invert	Outlet Devices
#1	Primary	291.50'	30.0" x 30.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	291.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.01 hrs HW=291.86' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=6.95 cfs @ 12.01 hrs HW=291.86' TW=287.66' (Dynamic Tailwater)
 ↑**1=Orifice/Grate** (Weir Controls 6.95 cfs @ 1.95 fps)

Summary for Pond BIO5: BIO 5

Inflow Area = 3.734 ac, 86.85% Impervious, Inflow Depth = 3.34" for 10 yr event
 Inflow = 19.66 cfs @ 11.97 hrs, Volume= 1.040 af
 Outflow = 19.50 cfs @ 11.98 hrs, Volume= 1.040 af, Atten= 1%, Lag= 0.6 min
 Discarded = 0.07 cfs @ 11.98 hrs, Volume= 0.239 af
 Primary = 19.43 cfs @ 11.98 hrs, Volume= 0.801 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 299.09' @ 11.98 hrs Surf.Area= 12,201 sf Storage= 6,483 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 191.7 min (957.4 - 765.7)

Volume	Invert	Avail.Storage	Storage Description
#1	298.50'	18,581 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.50	9,575	0	0
299.00	11,982	5,389	5,389
300.00	14,402	13,192	18,581

Device	Routing	Invert	Outlet Devices
#1	Primary	299.00'	300.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	298.50'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 11.98 hrs HW=299.09' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=19.40 cfs @ 11.98 hrs HW=299.09' TW=296.09' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 19.40 cfs @ 0.72 fps)

Summary for Pond PP1: POND 1

Inflow Area = 6.369 ac, 67.49% Impervious, Inflow Depth = 1.99" for 10 yr event
 Inflow = 26.62 cfs @ 12.00 hrs, Volume= 1.055 af
 Outflow = 0.99 cfs @ 13.54 hrs, Volume= 0.438 af, Atten= 96%, Lag= 92.7 min
 Primary = 0.99 cfs @ 13.54 hrs, Volume= 0.438 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 288.75' @ 13.54 hrs Surf.Area= 16,717 sf Storage= 31,213 cf

Plug-Flow detention time= 327.9 min calculated for 0.438 af (41% of inflow)
 Center-of-Mass det. time= 238.5 min (1,044.4 - 805.9)

Volume	Invert	Avail.Storage	Storage Description
#1	286.50'	74,872 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
286.50	10,000	0	0
287.00	12,472	5,618	5,618
291.00	22,155	69,254	74,872

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	18.0" Vert. Orifice/Grate C= 0.600
#2	Device 1	290.20'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	288.50'	24.0" W x 12.0" H Vert. Orifice/Grate C= 0.600
#4	Device 1	288.50'	6.0" Vert. Orifice/Grate C= 0.600
#5	Device 1	286.50'	0.2" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.99 cfs @ 13.54 hrs HW=288.75' TW=0.00' (Dynamic Tailwater)

↳ **1=Orifice/Grate** (Passes 0.99 cfs of 10.43 cfs potential flow)

↳ **2=Orifice/Grate** (Controls 0.00 cfs)

↳ **3=Orifice/Grate** (Orifice Controls 0.82 cfs @ 1.62 fps)

↳ **4=Orifice/Grate** (Orifice Controls 0.17 cfs @ 1.72 fps)

↳ **5=Orifice/Grate** (Orifice Controls 0.00 cfs @ 7.22 fps)

Summary for Pond PP2: Pond 2

Inflow Area = 3.734 ac, 86.85% Impervious, Inflow Depth = 2.57" for 10 yr event
 Inflow = 19.43 cfs @ 11.98 hrs, Volume= 0.801 af
 Outflow = 0.22 cfs @ 17.28 hrs, Volume= 0.298 af, Atten= 99%, Lag= 318.0 min
 Primary = 0.22 cfs @ 17.28 hrs, Volume= 0.298 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 297.15' @ 17.28 hrs Surf.Area= 15,748 sf Storage= 29,474 cf

Plug-Flow detention time= 1,243.6 min calculated for 0.298 af (37% of inflow)
 Center-of-Mass det. time= 1,158.6 min (1,949.7 - 791.1)

Volume	Invert	Avail.Storage	Storage Description
#1	295.00'	61,906 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
295.00	11,733	0	0
299.00	19,220	61,906	61,906

Device	Routing	Invert	Outlet Devices
#1	Primary	295.00'	1.0" Vert. Orifice/Grate C= 0.600
#2	Primary	297.00'	12.0" W x 12.0" H Vert. Orifice/Grate C= 0.600
#3	Primary	298.25'	15.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.22 cfs @ 17.28 hrs HW=297.15' TW=0.00' (Dynamic Tailwater)

- 1=Orifice/Grate (Orifice Controls 0.04 cfs @ 6.98 fps)
- 2=Orifice/Grate (Orifice Controls 0.18 cfs @ 1.22 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1P: Prop Site 1	Runoff Area=98,009 sf 73.78% Impervious Runoff Depth=5.38" Tc=6.0 min CN=93 Runoff=19.21 cfs 1.009 af
Subcatchment 2P: Prop Site 2	Runoff Area=44,621 sf 77.59% Impervious Runoff Depth=5.49" Tc=6.0 min CN=94 Runoff=8.83 cfs 0.469 af
Subcatchment 3P: Prop Site 3	Runoff Area=33,963 sf 73.11% Impervious Runoff Depth=5.38" Tc=6.0 min CN=93 Runoff=6.66 cfs 0.350 af
Subcatchment 4P: Prop Site 4	Runoff Area=68,516 sf 80.94% Impervious Runoff Depth=5.61" Tc=6.0 min CN=95 Runoff=13.67 cfs 0.735 af
Subcatchment 5AP: Prop Site 5A	Runoff Area=139,058 sf 4.56% Impervious Runoff Depth=3.45" Flow Length=760' Tc=29.3 min CN=75 Runoff=9.71 cfs 0.919 af
Subcatchment 5P: Prop Site 5	Runoff Area=32,314 sf 0.00% Impervious Runoff Depth=2.05" Tc=6.0 min CN=60 Runoff=2.71 cfs 0.127 af
Subcatchment 6P: Rear of site	Runoff Area=162,658 sf 86.85% Impervious Runoff Depth=5.73" Tc=6.0 min CN=96 Runoff=32.69 cfs 1.782 af
Subcatchment 7P: Prop Site 7	Runoff Area=197,099 sf 0.00% Impervious Runoff Depth=3.35" Flow Length=440' Tc=22.4 min CN=74 Runoff=15.80 cfs 1.265 af
Reach DPP1: Prop Design Point 1	Inflow=19.33 cfs 2.530 af Outflow=19.33 cfs 2.530 af
Reach DPP2: Prop Design Point 2	Inflow=18.32 cfs 2.291 af Outflow=18.32 cfs 2.291 af
Reach TSP: Total Site Proposed	Inflow=37.14 cfs 4.821 af Outflow=37.14 cfs 4.821 af
Pond BIO1: (new Pond)	Peak Elev=294.75' Storage=7,800 cf Inflow=19.21 cfs 1.009 af Discarded=0.06 cfs 0.223 af Primary=18.35 cfs 0.786 af Outflow=18.42 cfs 1.009 af
Pond BIO2: BIO2	Peak Elev=296.97' Storage=2,518 cf Inflow=8.83 cfs 0.469 af Discarded=0.02 cfs 0.057 af Primary=8.41 cfs 0.412 af Outflow=8.43 cfs 0.469 af
Pond BIO3: BIO 3	Peak Elev=294.56' Storage=1,324 cf Inflow=6.66 cfs 0.350 af Discarded=0.02 cfs 0.052 af Primary=6.63 cfs 0.297 af Outflow=6.65 cfs 0.350 af
Pond BIO4: BIO 4	Peak Elev=292.02' Storage=6,125 cf Inflow=13.67 cfs 0.735 af Discarded=0.04 cfs 0.129 af Primary=12.11 cfs 0.606 af Outflow=12.15 cfs 0.735 af
Pond BIO5: BIO 5	Peak Elev=299.13' Storage=6,934 cf Inflow=32.69 cfs 1.782 af Discarded=0.07 cfs 0.248 af Primary=32.41 cfs 1.534 af Outflow=32.48 cfs 1.782 af

Pilot_Glen Post Dev 2021-06-22

Type II 24-hr 100 yr Rainfall=6.20"

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 28

Pond PP1: POND 1

Peak Elev=289.84' Storage=50,717 cf Inflow=47.86 cfs 2.229 af
Outflow=9.65 cfs 1.611 af

Pond PP2: Pond 2

Peak Elev=297.90' Storage=41,954 cf Inflow=32.41 cfs 1.534 af
Outflow=2.80 cfs 1.026 af

Total Runoff Area = 17.820 ac Runoff Volume = 6.655 af Average Runoff Depth = 4.48"
56.86% Pervious = 10.133 ac 43.14% Impervious = 7.687 ac

Summary for Subcatchment 1P: Prop Site 1

Runoff = 19.21 cfs @ 11.97 hrs, Volume= 1.009 af, Depth= 5.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 yr Rainfall=6.20"

	Area (sf)	CN	Description
*	72,309	98	Pvmt, Impervious
	25,700	80	>75% Grass cover, Good, HSG D
	98,009	93	Weighted Average
	25,700		26.22% Pervious Area
	72,309		73.78% Impervious Area

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

Summary for Subcatchment 2P: Prop Site 2

Runoff = 8.83 cfs @ 11.97 hrs, Volume= 0.469 af, Depth= 5.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 yr Rainfall=6.20"

	Area (sf)	CN	Description
*	34,622	98	Pvmt, Impervious
	9,999	80	>75% Grass cover, Good, HSG D
	44,621	94	Weighted Average
	9,999		22.41% Pervious Area
	34,622		77.59% Impervious Area

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

Summary for Subcatchment 3P: Prop Site 3

Runoff = 6.66 cfs @ 11.97 hrs, Volume= 0.350 af, Depth= 5.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 yr Rainfall=6.20"

	Area (sf)	CN	Description
*	24,829	98	Pvmt, Impervious
	9,134	80	>75% Grass cover, Good, HSG D
	33,963	93	Weighted Average
	9,134		26.89% Pervious Area
	24,829		73.11% Impervious Area

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

Summary for Subcatchment 4P: Prop Site 4

Runoff = 13.67 cfs @ 11.97 hrs, Volume= 0.735 af, Depth= 5.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 yr Rainfall=6.20"

Area (sf)	CN	Description
* 55,459	98	Pvmt, Impervious
13,057	80	>75% Grass cover, Good, HSG D
68,516	95	Weighted Average
13,057		19.06% Pervious Area
55,459		80.94% Impervious Area

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

Summary for Subcatchment 5AP: Prop Site 5A

Runoff = 9.71 cfs @ 12.24 hrs, Volume= 0.919 af, Depth= 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 yr Rainfall=6.20"

Area (sf)	CN	Description
* 117,722	73	Brush, Good, HSG D
15,000	80	>75% Grass cover, Good, HSG D
* 6,336	98	Imp
139,058	75	Weighted Average
132,722		95.44% Pervious Area
6,336		4.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.7	100	0.0060	0.07		Sheet Flow,
					Grass: Dense n= 0.240 P2= 2.80"
4.6	660	0.0220	2.39		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
29.3	760	Total			

Summary for Subcatchment 5P: Prop Site 5

Runoff = 2.71 cfs @ 11.98 hrs, Volume= 0.127 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 yr Rainfall=6.20"

Area (sf)	CN	Description
15,492	39	>75% Grass cover, Good, HSG A
16,822	80	>75% Grass cover, Good, HSG D
32,314	60	Weighted Average
32,314		100.00% Pervious Area

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

Summary for Subcatchment 6P: Rear of site

Runoff = 32.69 cfs @ 11.97 hrs, Volume= 1.782 af, Depth= 5.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 yr Rainfall=6.20"

Area (sf)	CN	Description
* 141,276	98	Pvmt, Impervious
21,382	80	>75% Grass cover, Good, HSG D
162,658	96	Weighted Average
21,382		13.15% Pervious Area
141,276		86.85% Impervious Area

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

Summary for Subcatchment 7P: Prop Site 7

Runoff = 15.80 cfs @ 12.15 hrs, Volume= 1.265 af, Depth= 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100 yr Rainfall=6.20"

Area (sf)	CN	Description
72,145	77	Woods, Good, HSG D
124,954	73	Brush, Good, HSG D
197,099	74	Weighted Average
197,099		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.1	100	0.0100	0.08		Sheet Flow, Grass: Dense n= 0.240 P2= 2.80"
2.3	340	0.0240	2.49		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
22.4	440	Total			

Summary for Reach DPP1: Prop Design Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.561 ac, 46.47% Impervious, Inflow Depth = 3.18" for 100 yr event
 Inflow = 19.33 cfs @ 12.23 hrs, Volume= 2.530 af
 Outflow = 19.33 cfs @ 12.23 hrs, Volume= 2.530 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach DPP2: Prop Design Point 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.259 ac, 39.27% Impervious, Inflow Depth > 3.33" for 100 yr event
 Inflow = 18.32 cfs @ 12.17 hrs, Volume= 2.291 af
 Outflow = 18.32 cfs @ 12.17 hrs, Volume= 2.291 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Reach TSP: Total Site Proposed

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 17.820 ac, 43.14% Impervious, Inflow Depth > 3.25" for 100 yr event
 Inflow = 37.14 cfs @ 12.18 hrs, Volume= 4.821 af
 Outflow = 37.14 cfs @ 12.18 hrs, Volume= 4.821 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond BIO1: (new Pond)

Inflow Area = 2.250 ac, 73.78% Impervious, Inflow Depth = 5.38" for 100 yr event
 Inflow = 19.21 cfs @ 11.97 hrs, Volume= 1.009 af
 Outflow = 18.42 cfs @ 11.99 hrs, Volume= 1.009 af, Atten= 4%, Lag= 1.3 min
 Discarded = 0.06 cfs @ 11.99 hrs, Volume= 0.223 af
 Primary = 18.35 cfs @ 11.99 hrs, Volume= 0.786 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 294.75' @ 11.99 hrs Surf.Area= 10,752 sf Storage= 7,800 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Pilot_Glen Post Dev 2021-06-22

Type II 24-hr 100 yr Rainfall=6.20"

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 33

Center-of-Mass det. time= 192.9 min (961.4 - 768.5)

Volume	Invert	Avail.Storage	Storage Description
#1	294.00'	10,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
294.00	10,000	0	0
295.00	11,000	10,500	10,500

Device	Routing	Invert	Outlet Devices
#1	Primary	294.50'	60.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	294.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 11.99 hrs HW=294.75' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=18.35 cfs @ 11.99 hrs HW=294.75' TW=289.07' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 18.35 cfs @ 1.21 fps)

Summary for Pond BIO2: BIO2

Inflow Area = 1.024 ac, 77.59% Impervious, Inflow Depth = 5.49" for 100 yr event
 Inflow = 8.83 cfs @ 11.97 hrs, Volume= 0.469 af
 Outflow = 8.43 cfs @ 11.99 hrs, Volume= 0.469 af, Atten= 5%, Lag= 1.4 min
 Discarded = 0.02 cfs @ 11.99 hrs, Volume= 0.057 af
 Primary = 8.41 cfs @ 11.99 hrs, Volume= 0.412 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 296.97' @ 11.99 hrs Surf.Area= 2,694 sf Storage= 2,518 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 114.5 min (878.5 - 764.0)

Volume	Invert	Avail.Storage	Storage Description
#1	296.00'	2,600 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.00	2,500	0	0
297.00	2,700	2,600	2,600

Device	Routing	Invert	Outlet Devices
#1	Primary	296.50'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	296.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 11.99 hrs HW=296.97' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=8.41 cfs @ 11.99 hrs HW=296.97' TW=289.08' (Dynamic Tailwater)

↳ **1=Orifice/Grate** (Weir Controls 8.41 cfs @ 2.24 fps)

Summary for Pond BIO3: BIO 3

Inflow Area = 0.780 ac, 73.11% Impervious, Inflow Depth = 5.38" for 100 yr event
 Inflow = 6.66 cfs @ 11.97 hrs, Volume= 0.350 af
 Outflow = 6.65 cfs @ 11.97 hrs, Volume= 0.350 af, Atten= 0%, Lag= 0.3 min
 Discarded = 0.02 cfs @ 11.97 hrs, Volume= 0.052 af
 Primary = 6.63 cfs @ 11.97 hrs, Volume= 0.297 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 294.56' @ 11.97 hrs Surf.Area= 2,722 sf Storage= 1,324 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 127.4 min (895.9 - 768.5)

Volume	Invert	Avail.Storage	Storage Description
#1	294.00'	2,646 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
294.00	2,006	0	0
295.00	3,285	2,646	2,646

Device	Routing	Invert	Outlet Devices
#1	Primary	294.50'	190.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	294.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.02 cfs @ 11.97 hrs HW=294.56' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=6.62 cfs @ 11.97 hrs HW=294.56' TW=288.91' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 6.62 cfs @ 0.58 fps)

Summary for Pond BIO4: BIO 4

Inflow Area = 1.573 ac, 80.94% Impervious, Inflow Depth = 5.61" for 100 yr event
 Inflow = 13.67 cfs @ 11.97 hrs, Volume= 0.735 af
 Outflow = 12.15 cfs @ 12.00 hrs, Volume= 0.735 af, Atten= 11%, Lag= 2.2 min
 Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.129 af
 Primary = 12.11 cfs @ 12.00 hrs, Volume= 0.606 af

Pilot_Glen Post Dev 2021-06-22

Type II 24-hr 100 yr Rainfall=6.20"

Prepared by {enter your company name here}

Printed 6/23/2021

HydroCAD® 10.00-20 s/n 07427 © 2017 HydroCAD Software Solutions LLC

Page 35

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 292.02' @ 12.00 hrs Surf.Area= 6,629 sf Storage= 6,125 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 160.8 min (919.9 - 759.1)

Volume	Invert	Avail.Storage	Storage Description
#1	291.00'	12,833 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
291.00	5,420	0	0
292.00	6,623	6,022	6,022
293.00	7,000	6,812	12,833

Device	Routing	Invert	Outlet Devices
#1	Primary	291.50'	30.0" x 30.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	291.00'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=292.02' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=12.09 cfs @ 12.00 hrs HW=292.02' TW=289.20' (Dynamic Tailwater)
 ↳ **1=Orifice/Grate** (Weir Controls 12.09 cfs @ 2.35 fps)

Summary for Pond BIO5: BIO 5

Inflow Area = 3.734 ac, 86.85% Impervious, Inflow Depth = 5.73" for 100 yr event
 Inflow = 32.69 cfs @ 11.97 hrs, Volume= 1.782 af
 Outflow = 32.48 cfs @ 11.98 hrs, Volume= 1.782 af, Atten= 1%, Lag= 0.5 min
 Discarded = 0.07 cfs @ 11.98 hrs, Volume= 0.248 af
 Primary = 32.41 cfs @ 11.98 hrs, Volume= 1.534 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 299.13' @ 11.98 hrs Surf.Area= 12,290 sf Storage= 6,934 cf

Plug-Flow detention time= 122.9 min calculated for 1.782 af (100% of inflow)
 Center-of-Mass det. time= 123.1 min (876.7 - 753.6)

Volume	Invert	Avail.Storage	Storage Description
#1	298.50'	18,581 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.50	9,575	0	0
299.00	11,982	5,389	5,389
300.00	14,402	13,192	18,581

Device	Routing	Invert	Outlet Devices
#1	Primary	299.00'	300.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	298.50'	0.250 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 11.98 hrs HW=299.13' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=32.35 cfs @ 11.98 hrs HW=299.13' TW=297.19' (Dynamic Tailwater)

↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 32.35 cfs @ 0.85 fps)

Summary for Pond PP1: POND 1

Inflow Area = 6.369 ac, 67.49% Impervious, Inflow Depth = 4.20" for 100 yr event
 Inflow = 47.86 cfs @ 11.99 hrs, Volume= 2.229 af
 Outflow = 9.65 cfs @ 12.21 hrs, Volume= 1.611 af, Atten= 80%, Lag= 13.1 min
 Primary = 9.65 cfs @ 12.21 hrs, Volume= 1.611 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 289.84' @ 12.21 hrs Surf.Area= 19,336 sf Storage= 50,717 cf

Plug-Flow detention time= 183.9 min calculated for 1.611 af (72% of inflow)
 Center-of-Mass det. time= 103.4 min (900.9 - 797.4)

Volume	Invert	Avail.Storage	Storage Description
#1	286.50'	74,872 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
286.50	10,000	0	0
287.00	12,472	5,618	5,618
291.00	22,155	69,254	74,872

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	18.0" Vert. Orifice/Grate C= 0.600
#2	Device 1	290.20'	24.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	288.50'	24.0" W x 12.0" H Vert. Orifice/Grate C= 0.600
#4	Device 1	288.50'	6.0" Vert. Orifice/Grate C= 0.600
#5	Device 1	286.50'	0.2" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=9.65 cfs @ 12.21 hrs HW=289.84' TW=0.00' (Dynamic Tailwater)

↳ **1=Orifice/Grate** (Passes 9.65 cfs of 13.68 cfs potential flow)

↳ **2=Orifice/Grate** (Controls 0.00 cfs)

↳ **3=Orifice/Grate** (Orifice Controls 8.66 cfs @ 4.33 fps)

↳ **4=Orifice/Grate** (Orifice Controls 0.99 cfs @ 5.02 fps)

↳ **5=Orifice/Grate** (Orifice Controls 0.00 cfs @ 8.78 fps)

Summary for Pond PP2: Pond 2

Inflow Area = 3.734 ac, 86.85% Impervious, Inflow Depth = 4.93" for 100 yr event
 Inflow = 32.41 cfs @ 11.98 hrs, Volume= 1.534 af
 Outflow = 2.80 cfs @ 12.45 hrs, Volume= 1.026 af, Atten= 91%, Lag= 28.5 min
 Primary = 2.80 cfs @ 12.45 hrs, Volume= 1.026 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 297.90' @ 12.45 hrs Surf.Area= 17,167 sf Storage= 41,954 cf

Plug-Flow detention time= 509.0 min calculated for 1.026 af (67% of inflow)
 Center-of-Mass det. time= 426.9 min (1,207.4 - 780.5)

Volume	Invert	Avail.Storage	Storage Description
#1	295.00'	61,906 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
295.00	11,733	0	0
299.00	19,220	61,906	61,906

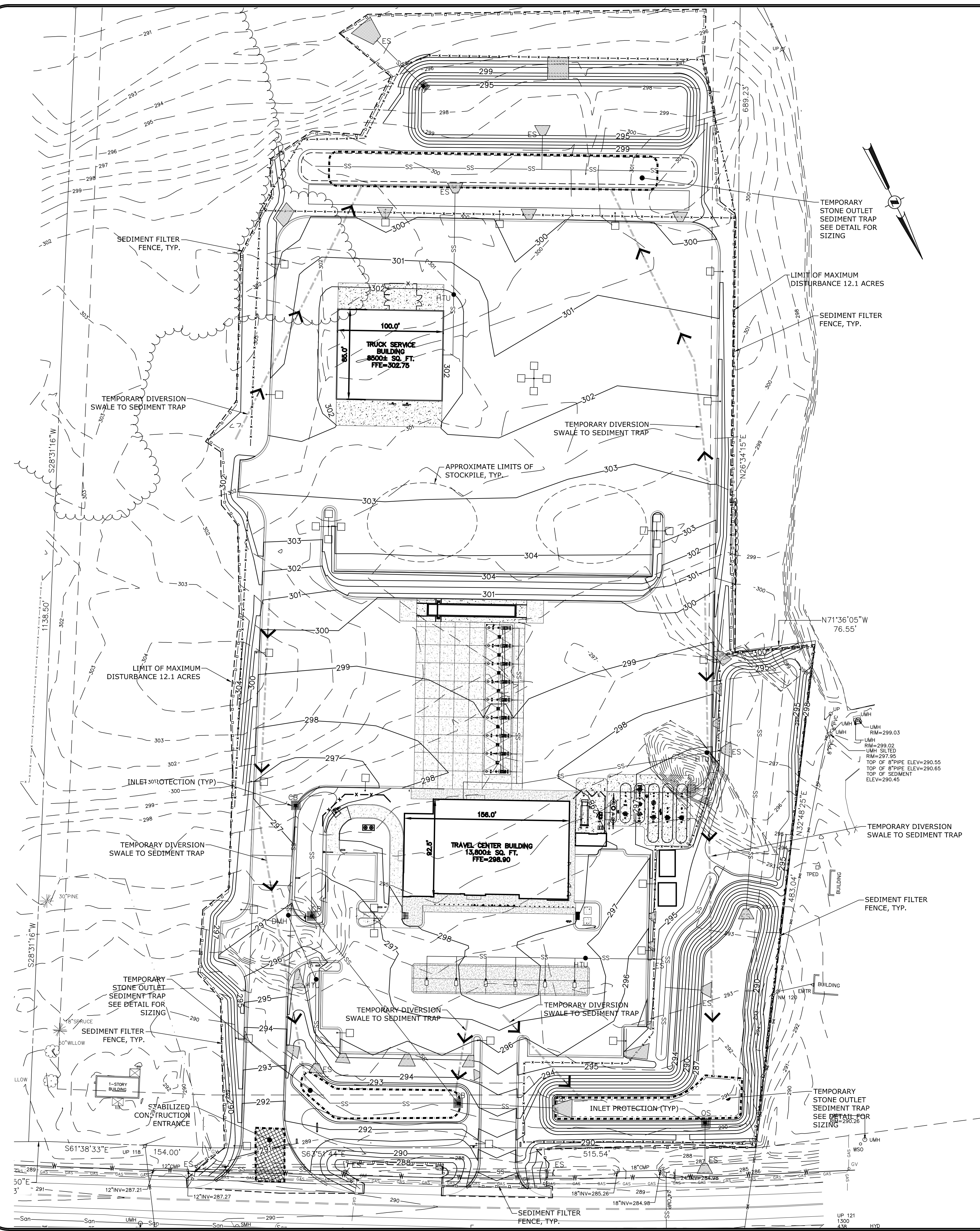
Device	Routing	Invert	Outlet Devices
#1	Primary	295.00'	1.0" Vert. Orifice/Grate C= 0.600
#2	Primary	297.00'	12.0" W x 12.0" H Vert. Orifice/Grate C= 0.600
#3	Primary	298.25'	15.0' long x 5.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=2.80 cfs @ 12.45 hrs HW=297.90' TW=0.00' (Dynamic Tailwater)

- 1=Orifice/Grate (Orifice Controls 0.04 cfs @ 8.15 fps)
- 2=Orifice/Grate (Orifice Controls 2.76 cfs @ 3.05 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

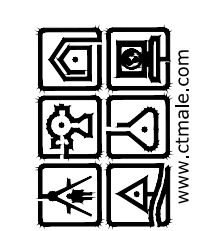
APPENDIX F

Erosion and Sediment Control Plan and Details



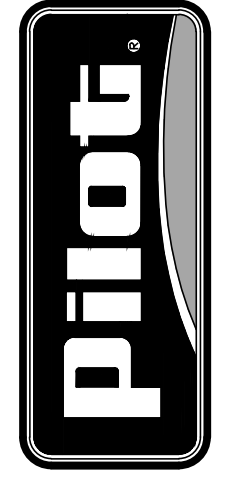
CONSTRUCTION SEQUENCE PLAN:
 TOTAL DISTURBANCE = ±12.1 ACRES

- INSTALL ESC MEASURES, INCLUDING STABILIZED CONSTRUCTION ACCESS, SILT FENCE, COMPOST FILTER SOCK, TEMPORARY SEDIMENT TRAPS AND CONCRETE WASHOUT. TIMBER MATTING SHALL BE UTILIZED IN AREAS OF PONDED WATER OR SATURATED AREAS DURING CLEARING OR CONSTRUCTION OF THE ACCESS ROAD
- ROUGH GRADE SITE
- INSTALL STORMWATER TREATMENT FACILITIES
- STABILIZE/SEED STORMWATER TREATMENT AREAS
- CONSTRUCT BUILDINGS
- INSTALL SITE UTILITIES
- INSTALL FUEL STORAGE TANKS
- CONSTRUCT FUELING CANOPIES
- FINAL GRADE PAVEMENT AND CONCRETE AREAS
- FINAL GRADE LAWN AND LANDSCAPE AREAS
- INSTALL LANDSCAPE AND SOD AND SEED LAWN AREA
- INSTALL PAVEMENT AND CONCRETE PADS
- AFTER SITE IS FULLY STABILIZED REMOVE TEMPORARY ESC MEASURES.



C-T. MALE ASSOCIATES
 Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
 50 CENTURY HILL DRIVE, LATHAM, NY 518.786.7400
 COBLESKILL, NY • GLENS FALLS, NY • POUGHKEEPSIE, NY
 JOHNSTOWN, NY • RED HOOK, NY • SYRACUSE, NY
 www.ctmale.com
 CTM PRO. NO. CTM DWG. NO.

PILOT COMPANY
 DESIGN DEPARTMENT
 5508 LONAS ROAD
 KNOXVILLE, TENNESSEE 37909
 (865) 588-7488

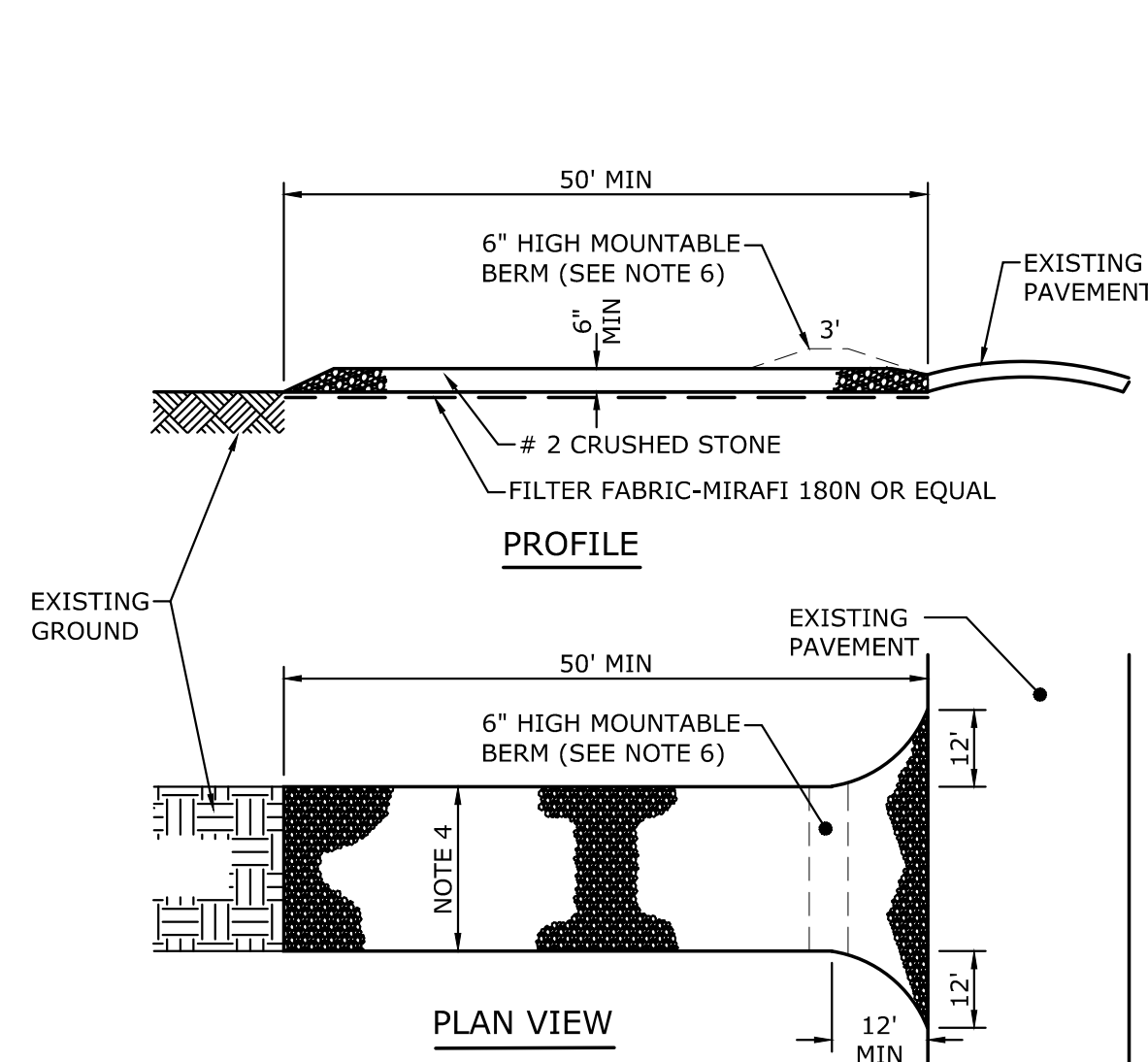


EROSION & SEDIMENT CONTROL PLAN

DATE:	REVISION:	DESCRIPTION:	INT.:
4/21/21	1	REVISED SITE LAYOUT & GRADING	O/K/S
5/27/21	2	REVISED PER PILOT REVIEW	O/K/S
6/01/21	3	REV. PER 5 ACRE WAIVER REQUEST	O/K/S
6/23/21	4	REV. PER TOWN REVIEW	O/K/S

© COPYRIGHT 2021 UNPUBLISHED
 PILOT COMPANY
 CONFIDENTIAL
 THIS DRAWING IS CONFIDENTIAL
 NO USE OR REPRODUCTION OF THIS DRAWING
 IS PERMITTED WITHOUT THE EXPRESS
 AUTHORIZATION OF PILOT COMPANY

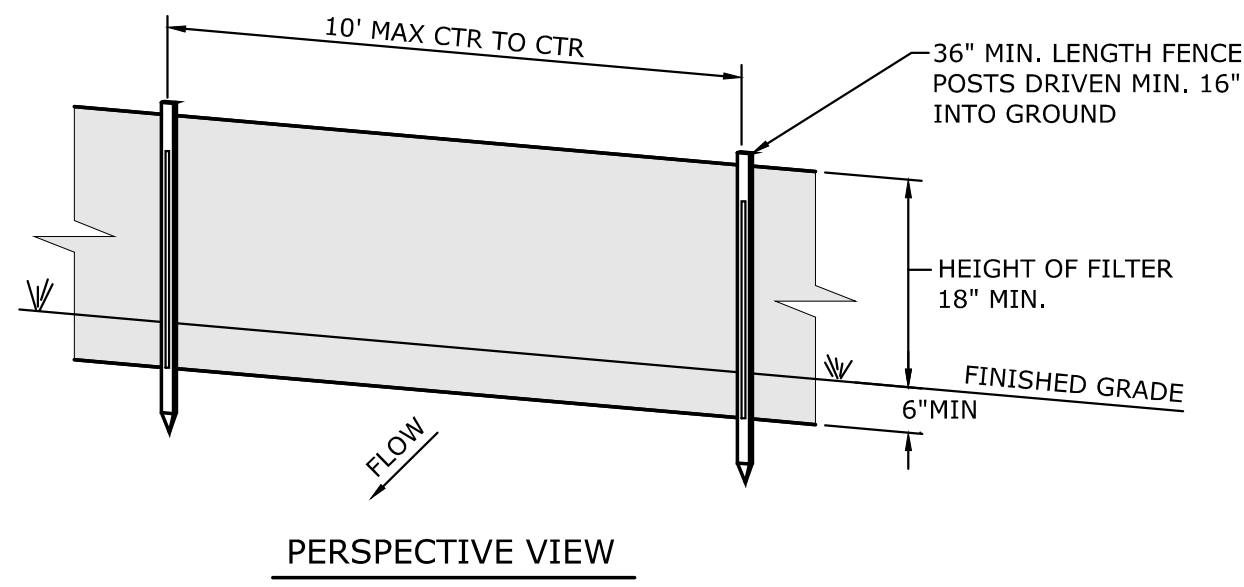
SHEET:
C7.0
 8



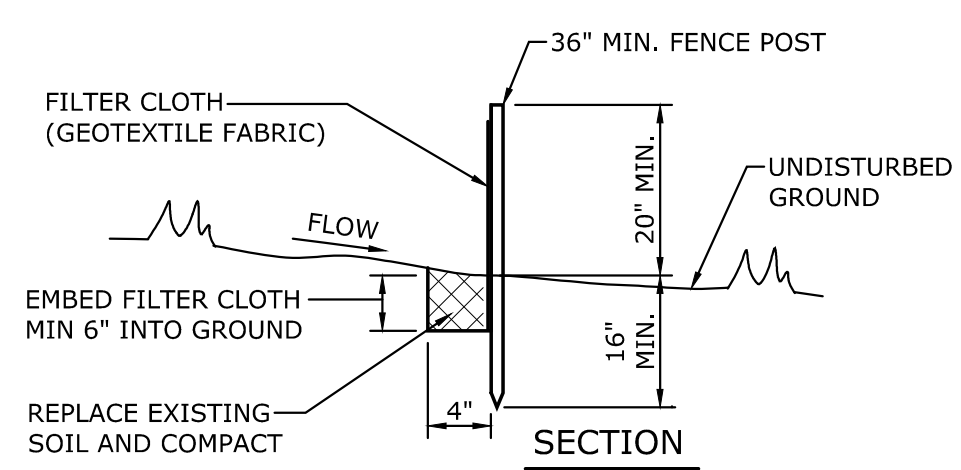
NOTES:

- USE NYS DOT #2 STONE, RECLAIMED, OR RECYCLED CONCRETE OR APPROVED EQUAL.
- THE LENGTH SHALL NOT BE LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
- CRUSHED STONE SHALL BE MAINTAINED AT A MINIMUM OF 6" IN DEPTH.
- ENTRANCE SHALL HAVE A 12 FOOT MINIMUM WIDTH, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. ENTRANCE SHALL BE AT LEAST 24 FEET WIDE IF SINGLE ENTRANCE TO SITE.
- GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO THE PLACING OF STONE.
- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS NOT PRACTICAL, A MOUNTABLE BERM WITH 1:5 SLOPES WILL BE PERMITTED.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHALL BE REMOVED IMMEDIATELY.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

01 STABILIZED CONSTRUCTION ENTRANCE DETAIL
C7.1 NONE



PERSPECTIVE VIEW

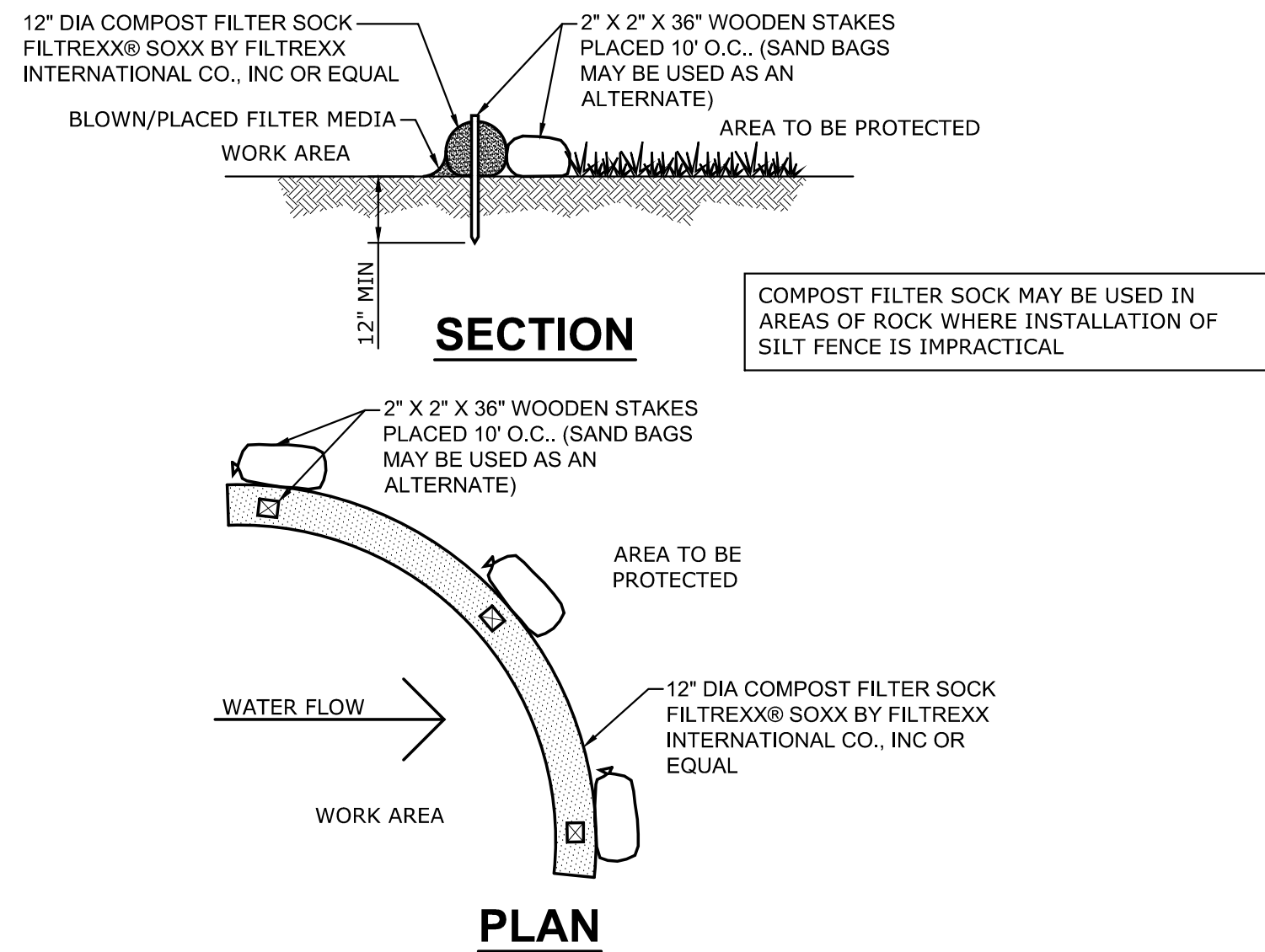


SECTION

NOTES:

- POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO POSTS.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6", FOLDED AND STAPLED.
- FILTER CLOTH SHALL BE MIRAFI 100X OR APPROVED EQUAL.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE. WHEN THE ACCUMULATED SEDIMENT REACHES 30% OF THE SILT FENCE HEIGHT, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROPRIATE UPLAND AREA.
- PREFABRICATED UNITS SHALL BE MIRAFI SILT FENCE, MIRAFI ENVIROFENCE OR APPROVED EQUIVALENT.

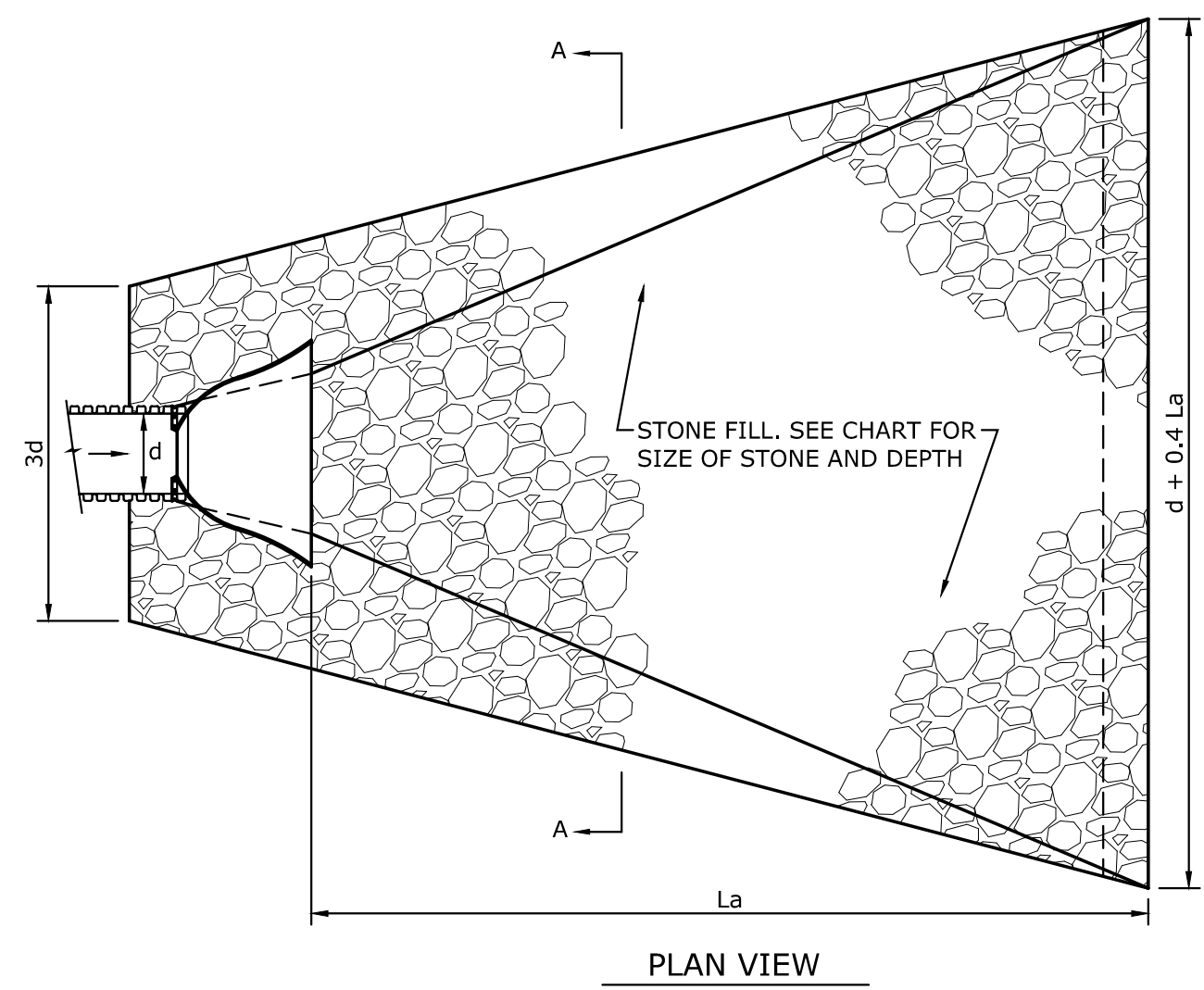
03 STANDARD SILT FENCE
C7.1 NONE



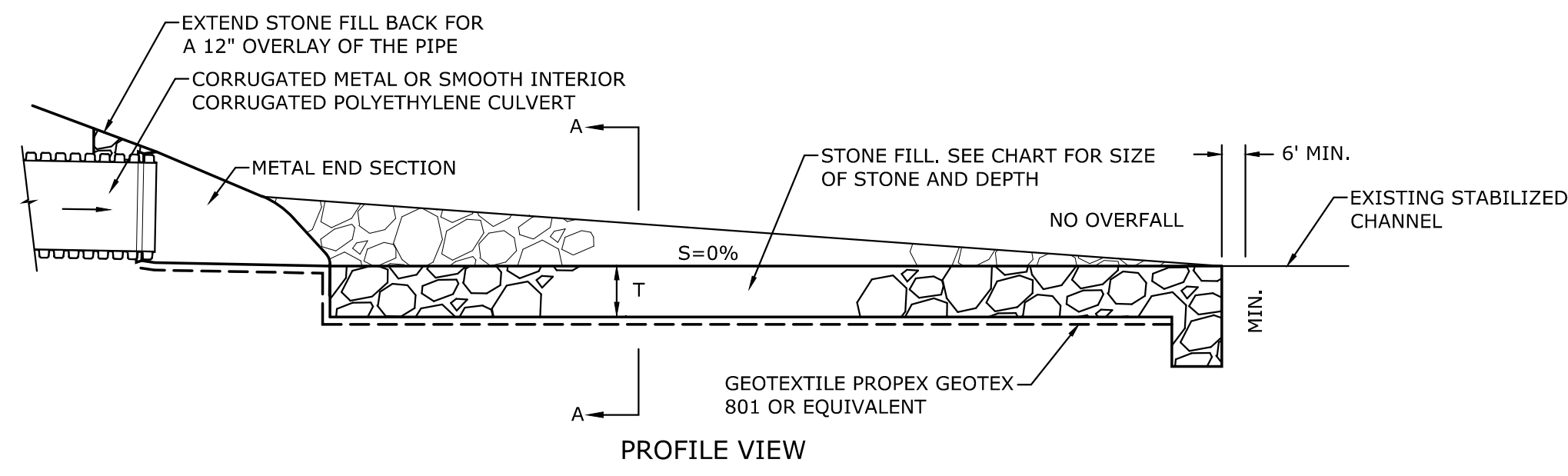
NOTE:

- FILL COMPOST FILTER SOCK WITH FILTER MEDIA APPROVED BY NYSDEC FOR THIS APPLICATION.
- WHEN USING COMPOST FILTER SOCKS ADJACENT TO SURFACE WATER, THE COMPOST SHOULD HAVE A LOW NUTRIENT VALUE

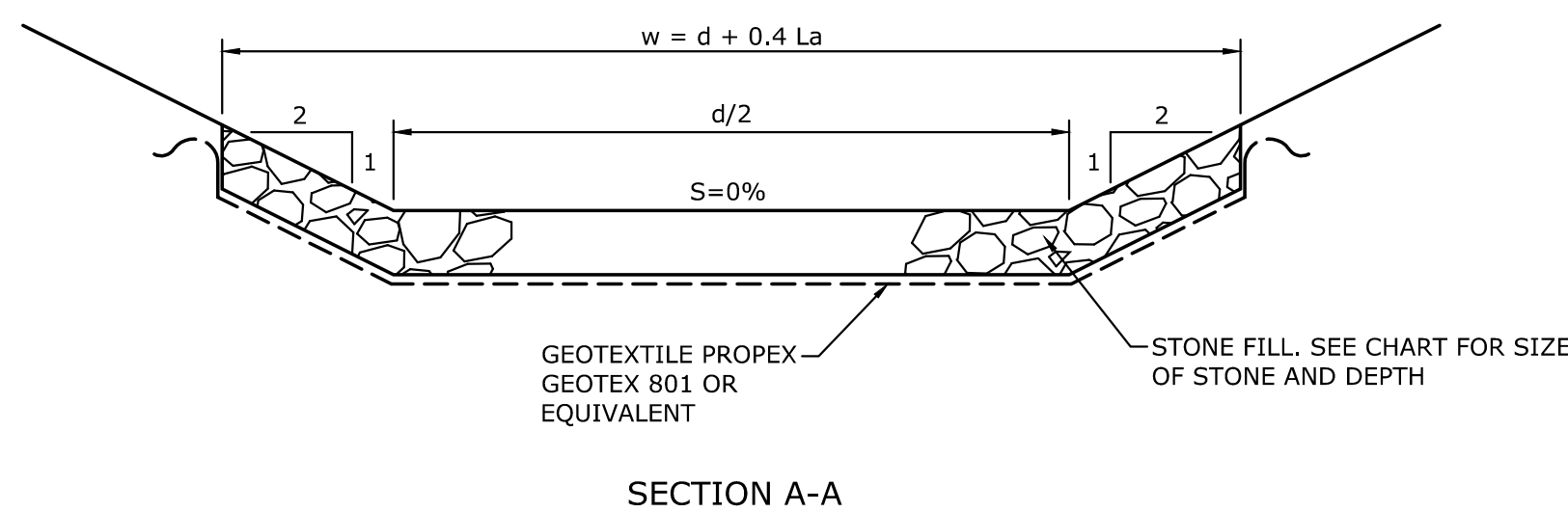
02 COMPOST FILTER SOCK
C7.1 NONE



PLAN VIEW



PROFILE VIEW



SECTION A-A

04 RIPRAP OUTLET PROTECTION
C7.1 NONE

GENERAL NOTES:

- ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL CONFORM TO THE "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL" (AUGUST 2005 ISSUE) AND ANY ADDENDA THERETO.
- THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR UNTIL THE FINAL SURFACE TREATMENT HAS BEEN INSTALLED AND VEGETATED AREAS HAVE ESTABLISHED 80% COVERAGE. AFTER THE VEGETATED AREAS HAVE BEEN STABILIZED WITH AT LEAST 80% VEGETATIVE COVER, AS DETERMINED BY THE ENGINEER, THE OWNER SHALL ASSUME RESPONSIBILITY FOR MAINTAINING THE EROSION AND SEDIMENT CONTROL SYSTEM(S).
- THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE CONTRACT DOCUMENTS WILL NEED TO BE SUPPLEMENTED WITH INTERIM MEASURES PRIOR TO ACHIEVING FINAL GRADES. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN INTERIM EROSION AND SEDIMENT CONTROL MEASURES AS NEEDED TO CONTROL EROSION AND SEDIMENTATION THROUGHOUT THE DURATION OF CONSTRUCTION. THE DETAILS AND EXTENT OF THESE MEASURES ARE HIGHLY DEPENDENT ON THE CONTRACTORS MEANS AND METHODS AND THEREFORE NOT DETAILED ON THESE PLANS. THE COSTS ASSOCIATED WITH INSTALLING AND MAINTAINING THESE INTERIM MEASURES SHALL BE INCLUDED IN THE CONTRACTORS BID.
- CONSTRUCTION ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCING NOTES.
- OUTSIDE THE GROWING SEASON, OTHER METHODS OF SOIL STABILIZATION (SUCH AS THE USE OF JUTE MESH AND EXCELSIOR MATTING) SHALL BE USED UNTIL SUCH TIME AS VEGETATIVE COVER CAN BE ESTABLISHED.
- EXISTING VEGETATION SHALL BE PRESERVED TO THE MAXIMUM EXTENT PRACTICABLE. SITE WORK ACTIVITIES SHALL BE PLANNED TO MINIMIZE THE AREA AND DURATION OF SOIL DISTURBANCE. REMOVAL OF WOODY VEGETATION SHALL BE KEPT TO THE MINIMUM EXTENT PRACTICABLE.
- INLET PROTECTION MEASURES SHALL BE INSTALLED AROUND STORM DRAIN INLETS OR WITHIN CB FRAMES TO PREVENT SEDIMENT LADEN WATER FROM ENTERING STORM SEWER SYSTEMS.

SEEDING & MULCHING NOTES:

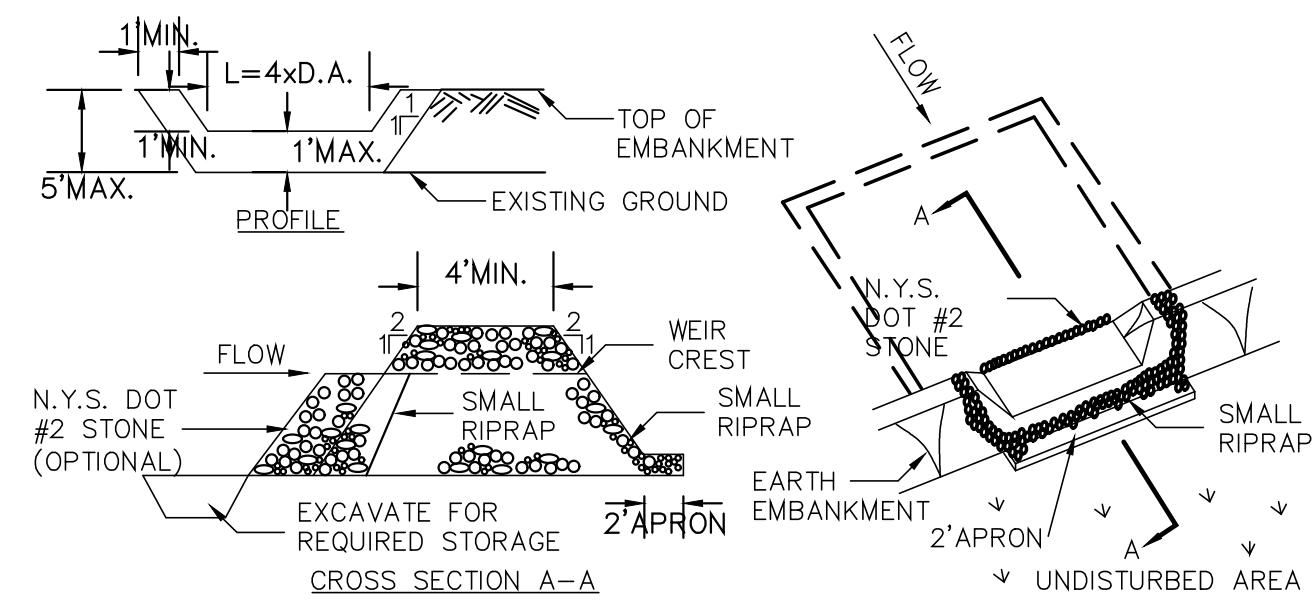
- TEMPORARY STABILIZATION MEASURES SHALL START AS SOON AS PRACTICAL ON PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT NOT MORE THAN (7) DAYS AFTER WORK HAS CEASED. ACCEPTABLE TEMPORARY STABILIZATION MEASURES INCLUDE, BUT MAY NOT BE LIMITED TO SEEDING MULCH, STRAW, EROSION CONTROL BLANKETS, SOIL STABILIZING EMULSION PRODUCTS, OR SOME FUNCTIONALLY EQUIVALENT MEASURE. TEMPORARY SEEDING SHALL BE ANNUAL RYE GRASS, APPLIED AT A RATE OF 30 LBS./ACRE.
- TEMPORARY EROSION CONTROL PROTECTION BY MULCHING SHALL BE CARRIED OUT WITHIN (7) DAYS OF THE FILL GRADE BEING FINALIZED TO AVOID POSSIBLE CONTAMINATION OF PONDS, STREAMS, OR OTHER WATERCOURSES. PLACEMENT OF JUTE MESH OR EROSION CONTROL BLANKETS OVER THE MULCH IS RECOMMENDED TO PROVIDE POSITIVE "TACKING" OF THE MULCH AND INCREASED PROTECTION AGAINST EROSION.
- PERMANENT SEEDING AND MULCH SHALL BE APPLIED AS SOON AS THE DISTURBED AREAS HAVE ACHIEVED FINAL GRADE. IF THE SPECIFIED SEEDING DATES ARE MISSED, MULCH SHALL BE APPLIED TO THE SLOPE AND SEED SHALL BE APPLIED TO THE TOP OF THE MULCH IN THE NEXT SEEDING SEASON AFTER RECONDITIONING THE TOPSOIL. WHEN THE FINAL GRADE CANNOT BE OBTAINED IN (7) DAYS, MULCH SHALL BE APPLIED FOR PURPOSES OF TEMPORARY EROSION CONTROL.
- THE UNDERLYING SOIL IN AREAS THAT WILL BE PERMANENTLY PERSISTENT (LAWN, GRASS AND LANDSCAPED AREAS) SHALL BE RESTORED IN ACCORDANCE WITH THE MEASURES IDENTIFIED IN THE JANUARY 2015, NYSDEC STORM WATER MANAGEMENT DESIGN MANUAL, SECTION 5.1.6 "SOIL RESTORATION".
- THE GRASS SEED BLEND SHALL BE AS SPECIFIED IN THE PROJECT MANUAL.
- SEEDING RATE SHALL BE 8 LBS. PER 1000 SQ.FT.

DUST CONTROL NOTES:

- DUST SHALL BE CONTROLLED ON THIS PROJECT BY USE OF A WATER TRUCK.
- THE QUALIFIED INSPECTOR WILL DETERMINE THE FREQUENCY OF WATER APPLICATION IN ORDER TO CONTROL DUST.
- CHEMICALS OR OTHER METHODS OF DUST CONTROL ARE PROHIBITED TO BE USED ON THIS PROJECT, UNLESS APPROVED BY NYSDEC REGION 4.

SILT FENCE/COMPOST FILTER SOCK NOTES:

- SILT FENCE/COMPOST FILTER SOCK SHALL BE PLACED ON THE DOWNSLOPE SIDE OF DISTURBED AREAS AND AROUND THE PERIMETER OF SOIL STOCKPILES.
- SILT FENCE/COMPOST FILTER SOCK SHALL BE PLACED AROUND THE BOUNDARY OF WETLANDS ADJACENT TO THE WORK AREA, AND AT THE EDGE OF WETLANDS AFTER CONSTRUCTION IS COMPLETED.
- SILT FENCE SHALL BE REPAIRED OR REPLACED WHEN THE ENDS ARE FRAYED OR WORN, AND WHEN THE FENCE IS NOT ANCHORED 6" INTO THE GROUND. WHEN THE ACCUMULATED SEDIMENT REACHES 30% OF THE SILT FENCE HEIGHT, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROPRIATE UPLAND AREA.



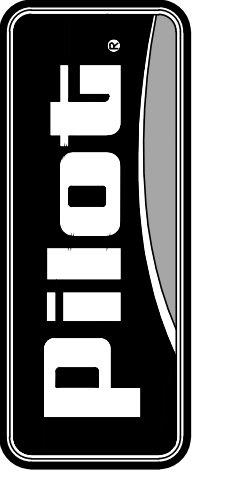
CONSTRUCTION SPECIFICATIONS

- AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
- THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS AND OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
- ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
- THE STONE USED IN THE OUTLET SHALL BE SMALL RIPRAP 4"-8" ALONG WITH A 1" THICKNESS OF 2" AGGREGATE PLACED ON THE UP-GRADE SIDE ON THE SMALL RIPRAP OR EMBEDDED FILTER CLOTH IN THE RIPRAP.
- SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP.
- THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED.
- THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED. MAXIMUM DRAINAGE AREA 5 ACRES

04 (NYSDEC STD) STONE OUTLET SEDIMENT TRAP ST-IV
C7.1 NONE

C-T. MALE ASSOCIATES
Engineering, Architecture, Landscape Architecture & Geology, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 518.786.7400
COBLESKILL, NY • GLENS FALLS, NY • POUGHKEEPSIE, NY
JOHNSTOWN, NY • RED HOOK, NY • STROUSE, NY
www.ctmale.com
CTM DWG. NO.

PILOT COMPANY
DESIGN DEPARTMENT
5508 LONAS ROAD
KNOXVILLE, TENNESSEE 37909
(865) 588-7488



EROSION & SEDIMENT CONTROL DETAILS

DATE:	DRAWN BY:	PROJECT:	INT. O/S
4/21/21	OKS	REVISION SITE LAYOUT & GRADING	OKS
5/27/21	1	REVISED PER PILOT REVIEW	OKS
6/01/21	3	REV. PER 5 ACRE WAIVER REQUEST	OKS
6/23/21	4	REV. PER TOWN REVIEW	OKS

© COPYRIGHT 2021 (UNPUBLISHED) PILOT COMPANY
CONFIDENTIAL
THIS DRAWING IS CONFIDENTIAL. NO USE OR REPRODUCTION OF THIS DRAWING IS PERMITTED WITHOUT AN EXPRESSLY AUTHORIZED PILOT COMPANY.

SHEET:

C7.1

X



May 25, 2021

***Site Construction Phasing Narrative
Pilot Travel Center #1317
164 Riverside Drive
Fultonville, New York 12072***

The high groundwater levels at this site presented significant civil design challenges. We have a design that allows us to overcome those challenges by borrowing soil from certain areas to fill in other areas across the site. In order to complete this design, we need to grade across the entire site to establish those grades. We have prepared a construction schedule to accomplish these measures.

We will begin by establishing our construction entrance and erosion control measures. After those measures are installed and approved, we will begin clearing and rough grading the site. We will focus primarily on grading the building pad area first. We expect to have the building pad graded out within 18 days of starting the project, and this will allow us to complete the building slab and begin on vertical construction.

After the first 30 days of the project, all rough grading should be complete, and the building slab should be poured in concrete. With these elements completed, we will then shift focus to site utilities, fuel storage tanks, and other site elements such as the fueling canopies. These items are estimated to occur over the next 60 days (90 days total duration.) During this time, all erosion and sediment control measures will be maintained as well.

After 90 days, we will begin the placement of site concrete and asphalt paving surfaces. These items will occur over the next 30 days, simultaneously with our vertical construction. We expect all site paving to be completed after 120 days of construction, with the travel center completing and opening shortly thereafter.

Please reference the following construction schedule for further description of tasks and specific durations.

APPENDIX G
SWPPP Inspection Forms

Field Inspection Report: SPDES GP-0-20-001

Project Name: Pilot Travel Center CTM Proj. #: 21.1029

Date: _____ Time: _____ Inspector/ Title _____

Weather During Inspection _____

Previous 24 hours: _____

Site Soil Conditions: _____

Description of Run off at Discharge Points _____

Erosion and Sediment Control Features:		(Refer to Map for Location)
	Condition	Corrective Action Required
Silt Fence		
Road Sweeping / Offsite		
Construction Entrances		
Riprap Outlet Protection		
Temporary Sediment Trap(s)		
Erosion Control Blanket		
Check Dam(s)		
Concrete Washout		
Other:		
Ramp		

Description of Disturbed Area:	None
Description of Stabilized Areas:	
Areas that Require Stabilization:	None

Permanent Stormwater Management Practices:	

Field Inspection Report: SPDES GP-0-20-001

Practices not in conformance with SWPPP:

Repairs Required: None.

Improvements Since Last Visit:

Signature of Qualified Inspector:

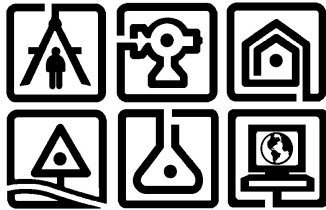
Date Inspection Mailed to Owner/Contractor

Signature of Owner (if required):

APPENDIX H

Post-Construction Operations and Maintenance Manual (O&M Manual)

May 14, 2021



Post-Construction Operations
and Maintenance Manual
(O&M Manual)
for Stormwater Management Facilities
for
PILOT TRAVEL CENTER

Town of Glen
Montgomery County, New York

Prepared for:

Pilot Travel Centers, LLC
5508 Lonas Drive
Knoxville, TN 37909

Prepared by:

C.T. MALE ASSOCIATES
ENGINEERING, SURVEYING, ARCHITECTURE,
LANDSCAPE ARCHITECTURE & GEOLOGY, D.P.C.
50 Century Hill Drive
Latham, New York 12110
(518) 786-7400
FAX (518) 786-7299

C.T. Male Associates Project No: 21.1029

Unauthorized alteration or addition to this
Document is a violation of the New
York State Education Law.

© Copyright 2021
C.T. MALE ASSOCIATES

**POST-CONSTRUCTION OPERATIONS
AND MAINTENANCE MANUAL
(O&M MANUAL)
FOR STORMWATER MANAGEMENT FACILITIES
FOR
PILOT TRAVEL CENTER
Table of Contents**

	<u>Page</u>
1.0 INTRODUCTION	- 2 -
2.0 STORMWATER MANAGEMENT SYSTEM	- 2 -
2.1 Stormwater Management System Description	- 2 -
3.0 MAINTENANCE AND INSPECTION SCHEDULE	- 2 -
3.1 Catch Basins, Hydrodynamic Separators and Outlet Control Structures	- 3 -
3.2 Storm Sewers	- 4 -
3.3 End Sections	- 4 -
3.4 Debris/Sediment Monitoring and Removal	- 4 -
3.5 Basin Slopes	- 5 -
4.0 CONTACT INFORMATION.....	- 5 -

Appendices

Appendix A1: Maintenance Inspection Form

1.0 INTRODUCTION

This Manual describes operation and maintenance procedures that should be employed to maximize the useful life and design intent of various systems and designated areas on the Pilot Travel Center site, located in the Town of Glen, Montgomery County, New York. The owner (Pilot Travel Centers, LLC) will be responsible for maintenance of these facilities once construction is completed.

2.0 STORMWATER MANAGEMENT SYSTEM

This section identifies the parts or components of the stormwater management system that need to be maintained on a regular basis to ensure proper functioning of each stormwater management practice, including non-structural practices.

2.1 Stormwater Management System Description

The stormwater management system for the Project consists of Five (5) bioretention area with an outlet structure, as well 2 detention basins. New catch basin structures and storm piping will also be incorporated and should be maintained in accordance with this manual.

3.0 MAINTENANCE AND INSPECTION SCHEDULE

Stormwater management systems need to undergo regular inspection and maintenance in order to function properly and at design capacity. Maintenance needs may include: removal of silt, litter and other debris from all catch basins and swales; grass cutting and vegetation removal; and replacement of vegetative cover.

A Maintenance Inspection Form (Form) should be completed to document inspection and maintenance performed at the Project (refer to Appendix A1). This Form provides a summary of the inspection requirements for each stormwater facility component, a frequency of inspection, and a description of the anticipated routine maintenance that is required. A new Form should be filled out during each inspection. Observations made during the inspection should be written in the "Inspection Comments" field. If it is determined that maintenance is required, a description of the maintenance conducted and the date of the maintenance should be written in the "Maintenance Comments"

field. Copies of completed Forms should be maintained in Appendix A1 of this document.

The following sections outline the procedures and schedule to be followed to perform routine inspection and maintenance activities. In general, the frequency of inspection of each stormwater facility component should be at least twice a year (spring and fall) and after a major storm event. Major storm events are considered those that result in more than 2.68 inches of rain falling within a single 24-hour period (a 1-year storm event).

3.1 Catch Basins, Hydrodynamic Separators and Outlet Control Structures

Catch basins are structures at the entrance of storm sewer pipes that are designed to “catch” sediments and other floatables from inflowing stormwater. Outlet control structures are similar to catch basins and they regulate water within a stormwater management practice(s). Hydrodynamic Separators, or Treatment Units (HTUs) help to remove settleable solids and floatables from stormwater prior to entry into a stormwater management practice or other waterbody or conveyance system.

At least twice a year and after a major storm event, catch basins, HTUs and outlet structures should be visually inspected to determine the depth of accumulated sediment and the presence of trash. If trash is observed, it should be removed and disposed of properly. Accumulated sediment should be removed when sediment is observed to be within three (3) inches of the invert of the outlet pipe. A measuring stick should be used to determine the depth of sediment.

Catch basins, HTUs and outlet control structure sumps should be cleaned using a vacuum truck or other appropriate means. The contents removed by the vacuum truck should be hauled off-site to an approved or otherwise authorized solid waste disposal facility. If contents are removed by a contractor, they should provide documentation of the location used for disposal. Sediments or sediment-laden water should not be disposed of on-site. It will be most critical to perform this cleaning operation in the spring, following the application of sand and salt on the paved surfaces during winter months. Additionally, structures should be cleaned in the fall, prior to the start of the winter season, to remove leaves and other debris.

3.2 Storm Sewers

Storm sewers are pipes that convey stormwater flows from one location to another. Storm sewers connect catch basins to one another and convey runoff to the off-site discharge point(s).

Storm sewer pipes should be inspected at least twice a year and after major storm events to determine if any debris, obstructions or floatables are present. If the flow in the storm sewer appears confined (i.e., catch basins are full of water or slow draining, or the flow from the end section is low), then a constriction may be present. If a constriction is probable or if debris or obstructions are present, they should be removed by flushing the pipes with high-pressure water.

3.3 End Sections

End sections are found at the end of pipes, and they are typically followed by rock aprons. The purpose of rock aprons is to reduce the velocity, depth and energy of the water, such that the flow will not erode downstream areas.

The end section of pipes, including rock aprons, should be visually inspected for trash and sediment at least twice a year and after major storm events. If trash is observed, it should be removed and disposed of properly. If excessive sediment deposition is observed on the rock apron, measures should be taken to remove the sediment. An “excessive sedimentation” condition exists when the rock on the bottom of the apron is no longer visible due to sediment deposition. It is recommended that accumulated sediments be removed with a hand shovel and disposed of properly.

3.4 Debris/Sediment Monitoring and Removal

Debris shall be periodically removed from the stormwater treatment areas across the site. An inspection, and possible removal of debris, should occur monthly and after major storm events. Debris can clog the outlet control structures and hinder emergency spillway performance. All debris shall be disposed of properly. The bioretention area should be visually inspected at least twice a year and after major storm events. Bioretention plantings shall be trimmed/pruned as needed to maintain shape and function.

3.5 Basin Slopes

The side slopes of the bioretention area should be visually inspected to confirm the existence of complete vegetative cover. At least 80% vegetative cover is needed to ensure the slopes are stabilized to prevent erosion and excess sedimentation build-up in the basins. If less than 80% vegetative cover is observed on the basin slopes in certain areas, these areas should be re-graded, seeded and mulched, as needed.

The bioretention area slopes should also be inspected for erosion, animal damage and undercutting of the banks of the slope. If rills or gullies greater than 4-inches in depth and 6-inches in width are observed, they should be repaired by re-grading the area and applying seed and mulch. If the basin slopes appear to be undercutting or slumping, the slopes should be re-graded to design specifications and seeded and mulched.

Animal damage, including burrowing, should be repaired and filled as necessary. If persistent animal damage is noted, it is recommended that a licensed pest control company be contacted to remove the nuisance animal.

Side slopes should be inspected at least twice per year and after significant storm events, i.e. greater than 2.68" in 24 hours

4.0 CONTACT INFORMATION

Questions about the stormwater management system should be directed to Jim Houston, P.E. at C.T. Male Associates. The main office phone number is 518.786.7400.

Appendix A1
Maintenance Inspection Form

**Pilot Travel Center Town of Glen
MAINTENANCE INSPECTION FORM**

Stormwater Facility Component	Inspection Requirement	Frequency of Inspection	O&M Manual Section No.	Inspection Comments	Maintenance Required	Maintenance Needed? (Y/N)	Maintenance Comments / Date of Maintenance
Catch Basins & Outlet Control Structures	Stick Measure for Sediment Depth	*Bi-Annual and After Major Storm Events	3.1		Remove When Sediment Within 3" of the Invert of the Outlet Pipe		
	Visual Inspection for Trash	*Bi-Annual and After Major Storm Events	3.1		Remove Trash as Needed		
Storm Sewers	Visual Inspection for Obstructions, Debris and Floatables	*Bi-Annual and After Major Storm Events	3.2	Visual Inspection of Rock Aprons for Trash and Sediment	Flush Storm Sewers as Needed		
End Sections	Visual Inspection of Rock Aprons for Trash and Sediment	*Bi-Annual and After Major Storm Events	3.3		Remove Trash and Sediment as Needed		
Debris Removal	Visual Inspection for Debris in Basins	*Monthly and After Major Storm Events	3.4		Remove Debris as Needed		
Basin Slopes	Note Percent of Vegetative Cover	*Bi-Annual and After Major Storm Events	3.5		Re-grade, Reseed and Mulch in Areas with less than 80% Vegetative Cover. Remove Woody Vegetation by Mowing		
	Visual Inspection for Gullyng, Animal Burrows and Undercutting of Banks	*Bi-Annual and After Major Storm Events	3.5		Re-grade, Reseed and Mulch as Needed		

Date of Inspection: _____
Inspector (name, title and company): _____
Inspector Signature: _____

*Bi-annual means Spring/Fall and major storm events means over 2.68" of rain in a 24 hour period.

Bioretention Operation, Maintenance and Management Inspection Checklist

Project:
 Location:
 Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
2. Vegetation (Monthly)		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)		
No evidence of sediment buildup		

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
4. Dewatering (Monthly)		
Dewaters between storms		
No evidence of standing water		
5. Sediment Deposition (Annual)		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
6. Outlet/Overflow Spillway (Annual, After Major Storms)		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
7. Integrity of Filter Bed (Annual)		
Filter bed has not been blocked or filled inappropriately		

Comments:

Actions to be Taken:

Stormwater Pond/Wetland Operation, Maintenance and Management Inspection Checklist

Project _____
 Location: _____
 Site Status: _____

 Date: _____
 Time: _____

 Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Embankment and emergency spillway (Annual, After Major Storms)		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6. Pond, toe & chimney drains clear and functioning		
7. Seeps/leaks on downstream face		
8. Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam "As-Built"		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		
2. Riser and principal spillway (Annual)		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____		
1. Low flow orifice obstructed		
2. Low flow trash rack. a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
3. Permanent Pool (Wet Ponds) (monthly)		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
4. Sediment Forebays		
1. Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
5. Dry Pond Areas		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
6. Condition of Outfalls (Annual , After Major Storms)		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4. Endwalls / Headwalls		
5. Other (specify)		
7. Other (Monthly)		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Complaints from residents		
3. Aesthetics a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
8. Wetland Vegetation (Annual)		
1. Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		
2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants "choked" with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

Comments:

Actions to be Taken:

APPENDIX I
Notice of Termination (NOT) Form

**New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505**

(NOTE: Submit completed form to address above)

**NOTICE OF TERMINATION for Storm Water Discharges Authorized
under the SPDES General Permit for Construction Activity**

Please indicate your permit identification number: NYR _____

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person:

4a. Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. *Date final stabilization completed (month/year): _____

9b. Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR _____

(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? yes no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? yes no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

**NOTICE OF TERMINATION for Storm Water Discharges Authorized under the
SPDES General Permit for Construction Activity - continued**

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? yes no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

- Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.
- Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).
- For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.
- For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____
(acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? yes
 no
(If Yes, complete section VI - "MS4 Acceptance" statement)

V. Additional Information/Explanation:
(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:

Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the
SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date: