

Revised Drainage Calculation Summary

The Pre and Post-development drainage calculations were revised in response to peer review comments and revisions to the plan. Specifically, the offsite runoff from the 18” culvert drain Mass DOT land on the opposite site of Summit Avenue was added to the model. The existing and proposed drainage conditions were evaluated at the point of discharge to the pond.

	<u>Peak Rate of Runoff for 2-Year Storm Event (3.1")</u> <u>Pre/Post</u>	<u>Peak Rate of Runoff for 10-Year Storm Event (4.6")</u> <u>Pre/Post</u>	<u>Peak Rate of Runoff for 25-Year Storm Event (5.5")</u> <u>Pre/Post</u>	<u>Peak Rate of Runoff for 100-Year Storm Event (6.7")</u> <u>Pre/Post</u>
Total	6.17/ 3.45 cfs	13.38/ 5.95 cfs	20.45/ 9.35 cfs	32.41/ 19.98 cfs
Change	-44%	-56%	-54%	-38%

	<u>Volume of Runoff for 2-Year Storm Event (3.1")</u> <u>Pre/Post</u>	<u>Volume of Runoff for 10-Year Storm Event (4.6")</u> <u>Pre/Post</u>	<u>Volume of Runoff for 25-Year Storm Event (5.5")</u> <u>Pre/Post</u>	<u>Volume of Runoff for 100-Year Storm Event (6.7")</u> <u>Pre/Post</u>
Total	0.947/ 0.330 acft	2.09/ 0.599 acft	3.03/ 1.00 acft	4.518/ 1.854 acft
Change	-65%	-71%	-67%	-59%

As shown above, the proposed drainage system has been designed to accommodate the additional offsite flow. There will be a net decrease in the rate and volume of runoff to Bailey’s Pond in the post-development condition.

Village at Bailey's Pond
 Rip Rap Outlet Protection Sizing
 Project: 12013
 Date: 6/14/2016
 By: SPM

Subcatchment	Outlet	TW	Q (25-yr) (CFS)	Do(ft)	W1 (ft)	W2 (ft)	L(ft)	D50 (in)
	FES 1-1	0.1	5.77	1.5	4.5	19.62	15.12	5
	FES 1-2*	0.1	6.6	1.5	4.5	20.28	15.78	6
	FES 1-3	0.1	4.13	1.25	3.75	16.46	12.71	4
	FES 1-4	0.1	0.82	1	3	10.98	7.98	1
	FES 1-5	0.1	5.59	1.25	3.75	17.87	14.12	6
	FES 1-6	0.1	3.82	1.25	3.75	16.17	12.42	3
	Wall							
	Penetration 1-1	0.1	1.44	0.75	2.25	9.80	7.55	2
(Not Req'd)	Wall							
	Penetration 1-2	0.1	0.1	0.75	2.25	4.41	5.41	0
	Wall							
	Penetration 1-3	0.1	1.72	0.75	2.25	10.25	8.00	2
(Not Req'd)	Wall							
	Penetration 1-4	0.1	0.1	0.75	2.25	4.41	5.41	0
(Not Req'd)	Wall							
	Penetration 1-5	0.1	0.1	0.75	2.25	4.41	5.41	0
	FES 2-1	0.1	1.36	1	3	11.63	8.63	1
	FES 2-2	0.1	4.62	1	3	15.54	12.54	5
	FES 2-3	0.1	0.85	1	3	11.02	8.02	1
(Not Req'd)	FES 2-4	0.1	0.1	1	3	5.85	7.12	0
(Not Req'd)	FES 2-5	0.1	0.49	1	3	10.59	7.59	0
(Not Req'd)	FES 2-6	0.1	0.83	1.5	4.5	15.66	11.16	0

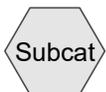
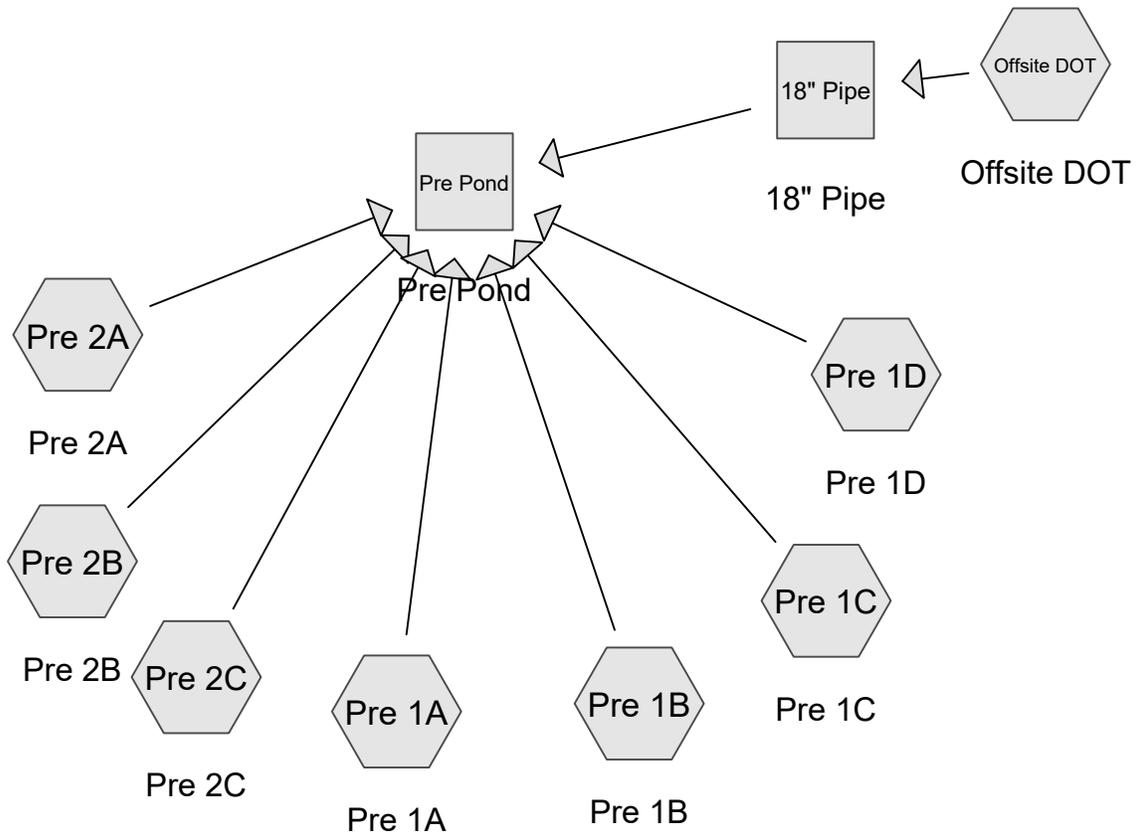
Formulas:

L $L=1.8Q/Do^{1.5} + 7Do$
 $L=3Q/Do^{1.5} + 7Do$ (when TW < Do/2)
 (when TW > Do/2)

W1 $W=3Do$

W2 $W=3Do + L$
 $W=3Do + 0.4L$ (when TW < Do/2)
 (when TW > Do/2)

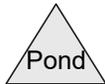
D50 $D50=(.02Q^{.1.3})/(TW*Do)$



Subcat



Reach



Pond



Link

Routing Diagram for 12013 Pre-Offsite

Prepared by {enter your company name here}, Printed 10/3/2016
 HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

12013 Pre-Offsite

Prepared by {enter your company name here}

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Printed 10/3/2016

Page 2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.329	68	<50% Grass cover, Poor, HSG A (Pre 2A)
11.865	48	Brush, Poor, HSG A (Offsite DOT, Pre 1A, Pre 1B, Pre 1C, Pre 1D, Pre 2B, Pre 2C)
2.408	98	Paved parking & roofs (Offsite DOT, Pre 1A, Pre 1B, Pre 1C, Pre 2A, Pre 2B, Pre 2C)
0.555	98	Water Surface, 0% imp (Pre 2C)
9.569	36	Woods, Fair, HSG A (Pre 1D, Pre 2B, Pre 2C)
6.580	57	Woods/grass comb., Poor, HSG A (Offsite DOT, Pre 1A, Pre 1B, Pre 1C)
31.306	51	TOTAL AREA

12013 Pre-Offsite

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 3

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
28.343	HSG A	Offsite DOT, Pre 1A, Pre 1B, Pre 1C, Pre 1D, Pre 2A, Pre 2B, Pre 2C
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
2.964	Other	Offsite DOT, Pre 1A, Pre 1B, Pre 1C, Pre 2A, Pre 2B, Pre 2C
31.306		TOTAL AREA

12013 Pre-Offsite

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 4

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.329	0.000	0.000	0.000	0.000	0.329	<50% Grass cover, Poor	Pre 2A
11.865	0.000	0.000	0.000	0.000	11.865	Brush, Poor	Offsite DOT, Pre 1A, Pre 1B, Pre 1C, Pre 1D, Pre 2B, Pre 2C
0.000	0.000	0.000	0.000	2.408	2.408	Paved parking & roofs	Offsite DOT, Pre 1A, Pre 1B, Pre 1C, Pre 2A, Pre 2B, Pre 2C
0.000	0.000	0.000	0.000	0.555	0.555	Water Surface, 0% imp	Pre 2C
9.569	0.000	0.000	0.000	0.000	9.569	Woods, Fair	Pre 1D, Pre 2B, Pre 2C
6.580	0.000	0.000	0.000	0.000	6.580	Woods/grass comb., Poor	Offsite DOT, Pre 1A, Pre 1B, Pre 1C
28.343	0.000	0.000	0.000	2.964	31.306	TOTAL AREA	

12013 Pre-Offsite

Type III 24-hr 2 year Rainfall=3.10"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 5

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentOffsite DOT: Offsite DOT Runoff Area=159,601 sf 37.96% Impervious Runoff Depth>1.21"
 Flow Length=1,589' Slope=0.0750 '/' Tc=21.8 min CN=71 Runoff=2.82 cfs 0.370 af

SubcatchmentPre 1A: Pre 1A Runoff Area=205,388 sf 2.71% Impervious Runoff Depth>0.19"
 Flow Length=511' Tc=19.8 min CN=51 Runoff=0.33 cfs 0.076 af

SubcatchmentPre 1B: Pre 1B Runoff Area=211,854 sf 6.45% Impervious Runoff Depth>0.31"
 Flow Length=666' Tc=22.5 min CN=54 Runoff=0.70 cfs 0.128 af

SubcatchmentPre 1C: Pre 1C Runoff Area=157,286 sf 1.51% Impervious Runoff Depth>0.26"
 Flow Length=642' Tc=28.1 min CN=55 Runoff=0.31 cfs 0.077 af

SubcatchmentPre 1D: Pre 1D Runoff Area=136,654 sf 0.00% Impervious Runoff Depth>0.02"
 Flow Length=390' Tc=19.2 min CN=39 Runoff=0.01 cfs 0.005 af

SubcatchmentPre 2A: Pre 2A Runoff Area=21,228 sf 32.49% Impervious Runoff Depth>1.39"
 Flow Length=745' Slope=0.0500 '/' Tc=6.0 min CN=78 Runoff=0.68 cfs 0.056 af

SubcatchmentPre 2B: Pre 2B Runoff Area=277,757 sf 1.93% Impervious Runoff Depth>0.08"
 Flow Length=569' Tc=18.2 min CN=42 Runoff=0.26 cfs 0.044 af

SubcatchmentPre 2C: Pre 2C Runoff Area=193,937 sf 5.39% Impervious Runoff Depth>0.52"
 Flow Length=514' Tc=19.0 min CN=48 Runoff=1.66 cfs 0.192 af

Reach 18" Pipe: 18" Pipe Avg. Flow Depth=0.53' Max Vel=5.04 fps Inflow=2.82 cfs 0.370 af
 18.0" Round Pipe n=0.013 L=120.0' S=0.0100 '/' Capacity=10.50 cfs Outflow=2.81 cfs 0.370 af

Reach Pre Pond: Pre Pond Inflow=6.17 cfs 0.947 af
 Outflow=6.17 cfs 0.947 af

Total Runoff Area = 31.306 ac Runoff Volume = 0.947 af Average Runoff Depth = 0.36"
92.31% Pervious = 28.898 ac 7.69% Impervious = 2.408 ac

12013 Pre-Offsite

Type III 24-hr 2 year Rainfall=3.10"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 6

Summary for Subcatchment Offsite DOT: Offsite DOT

Runoff = 2.82 cfs @ 12.29 hrs, Volume= 0.370 af, Depth> 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.10"

Area (sf)	CN	Description
35,109	48	Brush, Poor, HSG A
63,906	57	Woods/grass comb., Poor, HSG A
60,586	98	Paved parking & roofs
159,601	71	Weighted Average
99,015	54	62.04% Pervious Area
60,586	98	37.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	1,589	0.0750	1.21		Lag/CN Method, Offsite DOT

Summary for Subcatchment Pre 1A: Pre 1A

Runoff = 0.33 cfs @ 12.32 hrs, Volume= 0.076 af, Depth> 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.10"

Area (sf)	CN	Description
154,026	48	Brush, Poor, HSG A
45,802	57	Woods/grass comb., Poor, HSG A
5,560	98	Paved parking & roofs
205,388	51	Weighted Average
199,828	50	97.29% Pervious Area
5,560	98	2.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	150	0.0600	0.13		Sheet Flow, AB
					Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	361	0.0200	8.05	418.35	Trap/Vee/Rect Channel Flow, BC
					Bot.W=10.00' D=2.00' Z= 8.0 '/' Top.W=42.00'
					n= 0.030 Earth, grassed & winding
19.8	511	Total			

Summary for Subcatchment Pre 1B: Pre 1B

Runoff = 0.70 cfs @ 12.34 hrs, Volume= 0.128 af, Depth> 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.10"

12013 Pre-Offsite

Type III 24-hr 2 year Rainfall=3.10"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 7

Area (sf)	CN	Description
132,992	48	Brush, Poor, HSG A
65,190	57	Woods/grass comb., Poor, HSG A
13,672	98	Paved parking & roofs
211,854	54	Weighted Average
198,182	51	93.55% Pervious Area
13,672	98	6.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	150	0.1200	0.17		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
1.2	137	0.1400	1.87		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
5.9	292	0.0270	0.82		Shallow Concentrated Flow, CD Woodland Kv= 5.0 fps
0.9	87	0.1100	1.66		Shallow Concentrated Flow, DE Woodland Kv= 5.0 fps
22.5	666	Total			

Summary for Subcatchment Pre 1C: Pre 1C

Runoff = 0.31 cfs @ 12.58 hrs, Volume= 0.077 af, Depth> 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.10"

Area (sf)	CN	Description
43,172	48	Brush, Poor, HSG A
111,739	57	Woods/grass comb., Poor, HSG A
2,375	98	Paved parking & roofs
157,286	55	Weighted Average
154,911	54	98.49% Pervious Area
2,375	98	1.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	150	0.0500	0.12		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
1.0	156	0.2600	2.55		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
6.5	336	0.0300	0.87		Shallow Concentrated Flow, CD Woodland Kv= 5.0 fps
28.1	642	Total			

12013 Pre-Offsite

Type III 24-hr 2 year Rainfall=3.10"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 8

Summary for Subcatchment Pre 1D: Pre 1D

Runoff = 0.01 cfs @ 14.94 hrs, Volume= 0.005 af, Depth> 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.10"

Area (sf)	CN	Description
33,479	48	Brush, Poor, HSG A
103,175	36	Woods, Fair, HSG A
136,654	39	Weighted Average
136,654	39	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4	133	0.0600	0.13		Sheet Flow, AB
					Woods: Light underbrush n= 0.400 P2= 3.20"
1.8	257	0.2200	2.35		Shallow Concentrated Flow, BC
					Woodland Kv= 5.0 fps
19.2	390	Total			

Summary for Subcatchment Pre 2A: Pre 2A

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 0.056 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.10"

Area (sf)	CN	Description
0	48	Brush, Poor, HSG A
0	36	Woods, Fair, HSG A
6,898	98	Paved parking & roofs
14,330	68	<50% Grass cover, Poor, HSG A
21,228	78	Weighted Average
14,330	68	67.51% Pervious Area
6,898	98	32.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0500	1.44		Sheet Flow, AB
					Smooth surfaces n= 0.011 P2= 3.20"
2.7	725	0.0500	4.54		Shallow Concentrated Flow,
					Paved Kv= 20.3 fps
2.9	745	Total, Increased to minimum Tc = 6.0 min			

12013 Pre-Offsite

Type III 24-hr 2 year Rainfall=3.10"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 9

Summary for Subcatchment Pre 2B: Pre 2B

Runoff = 0.26 cfs @ 12.24 hrs, Volume= 0.044 af, Depth> 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.10"

Area (sf)	CN	Description
103,591	48	Brush, Poor, HSG A
168,808	36	Woods, Fair, HSG A
5,358	98	Paved parking & roofs
277,757	42	Weighted Average
272,399	41	98.07% Pervious Area
5,358	98	1.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	150	0.1800	0.20		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.7	341	0.0400	1.00		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
0.2	78	0.0200	8.05	418.35	Trap/Vee/Rect Channel Flow, CD Bot.W=10.00' D=2.00' Z= 8.0 '/' Top.W=42.00' n= 0.030 Earth, grassed & winding
18.2	569	Total			

Summary for Subcatchment Pre 2C: Pre 2C

Runoff = 1.66 cfs @ 12.25 hrs, Volume= 0.192 af, Depth> 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.10"

Area (sf)	CN	Description
144,839	36	Woods, Fair, HSG A
10,452	98	Paved parking & roofs
24,197	98	Water Surface, 0% imp
14,449	48	Brush, Poor, HSG A
193,937	48	Weighted Average
183,485	45	94.61% Pervious Area
10,452	98	5.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	150	0.1300	0.18		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.0	364	0.0600	1.22		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
19.0	514	Total			

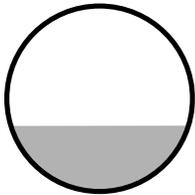
Summary for Reach 18" Pipe: 18" Pipe

Inflow Area = 3.664 ac, 37.96% Impervious, Inflow Depth > 1.21" for 2 year event
Inflow = 2.82 cfs @ 12.29 hrs, Volume= 0.370 af
Outflow = 2.81 cfs @ 12.31 hrs, Volume= 0.370 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.04 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.97 fps, Avg. Travel Time= 1.0 min

Peak Storage= 67 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.53'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.50 cfs

18.0" Round Pipe
n= 0.013
Length= 120.0' Slope= 0.0100 '/'
Inlet Invert= 48.91', Outlet Invert= 47.71'



Summary for Reach Pre Pond: Pre Pond

Inflow Area = 31.306 ac, 7.69% Impervious, Inflow Depth > 0.36" for 2 year event
Inflow = 6.17 cfs @ 12.29 hrs, Volume= 0.947 af
Outflow = 6.17 cfs @ 12.29 hrs, Volume= 0.947 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

12013 Pre-Offsite

Type III 24-hr 10 year Rainfall=4.60"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 11

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentOffsite DOT: Offsite DOT Runoff Area=159,601 sf 37.96% Impervious Runoff Depth>2.11"
 Flow Length=1,589' Slope=0.0750 '/' Tc=21.8 min CN=71 Runoff=4.94 cfs 0.643 af

SubcatchmentPre 1A: Pre 1A Runoff Area=205,388 sf 2.71% Impervious Runoff Depth>0.65"
 Flow Length=511' Tc=19.8 min CN=51 Runoff=1.50 cfs 0.255 af

SubcatchmentPre 1B: Pre 1B Runoff Area=211,854 sf 6.45% Impervious Runoff Depth>0.83"
 Flow Length=666' Tc=22.5 min CN=54 Runoff=2.10 cfs 0.338 af

SubcatchmentPre 1C: Pre 1C Runoff Area=157,286 sf 1.51% Impervious Runoff Depth>0.82"
 Flow Length=642' Tc=28.1 min CN=55 Runoff=1.55 cfs 0.246 af

SubcatchmentPre 1D: Pre 1D Runoff Area=136,654 sf 0.00% Impervious Runoff Depth>0.15"
 Flow Length=390' Tc=19.2 min CN=39 Runoff=0.14 cfs 0.040 af

SubcatchmentPre 2A: Pre 2A Runoff Area=21,228 sf 32.49% Impervious Runoff Depth>2.50"
 Flow Length=745' Slope=0.0500 '/' Tc=6.0 min CN=78 Runoff=1.28 cfs 0.101 af

SubcatchmentPre 2B: Pre 2B Runoff Area=277,757 sf 1.93% Impervious Runoff Depth>0.28"
 Flow Length=569' Tc=18.2 min CN=42 Runoff=0.73 cfs 0.151 af

SubcatchmentPre 2C: Pre 2C Runoff Area=193,937 sf 5.39% Impervious Runoff Depth>0.85"
 Flow Length=514' Tc=19.0 min CN=48 Runoff=2.52 cfs 0.317 af

Reach 18" Pipe: 18" Pipe Avg. Flow Depth=0.72' Max Vel=5.85 fps Inflow=4.94 cfs 0.643 af
 18.0" Round Pipe n=0.013 L=120.0' S=0.0100 '/' Capacity=10.50 cfs Outflow=4.93 cfs 0.643 af

Reach Pre Pond: Pre Pond Inflow=13.38 cfs 2.090 af
 Outflow=13.38 cfs 2.090 af

Total Runoff Area = 31.306 ac Runoff Volume = 2.090 af Average Runoff Depth = 0.80"
92.31% Pervious = 28.898 ac 7.69% Impervious = 2.408 ac

12013 Pre-Offsite

Type III 24-hr 10 year Rainfall=4.60"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 12

Summary for Subcatchment Offsite DOT: Offsite DOT

Runoff = 4.94 cfs @ 12.30 hrs, Volume= 0.643 af, Depth> 2.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 year Rainfall=4.60"

Area (sf)	CN	Description
35,109	48	Brush, Poor, HSG A
63,906	57	Woods/grass comb., Poor, HSG A
60,586	98	Paved parking & roofs
159,601	71	Weighted Average
99,015	54	62.04% Pervious Area
60,586	98	37.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	1,589	0.0750	1.21		Lag/CN Method, Offsite DOT

Summary for Subcatchment Pre 1A: Pre 1A

Runoff = 1.50 cfs @ 12.38 hrs, Volume= 0.255 af, Depth> 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 year Rainfall=4.60"

Area (sf)	CN	Description
154,026	48	Brush, Poor, HSG A
45,802	57	Woods/grass comb., Poor, HSG A
5,560	98	Paved parking & roofs
205,388	51	Weighted Average
199,828	50	97.29% Pervious Area
5,560	98	2.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	150	0.0600	0.13		Sheet Flow, AB
					Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	361	0.0200	8.05	418.35	Trap/Vee/Rect Channel Flow, BC
					Bot.W=10.00' D=2.00' Z= 8.0 '/' Top.W=42.00'
					n= 0.030 Earth, grassed & winding
19.8	511	Total			

Summary for Subcatchment Pre 1B: Pre 1B

Runoff = 2.10 cfs @ 12.38 hrs, Volume= 0.338 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 year Rainfall=4.60"

12013 Pre-Offsite

Type III 24-hr 10 year Rainfall=4.60"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 13

Area (sf)	CN	Description
132,992	48	Brush, Poor, HSG A
65,190	57	Woods/grass comb., Poor, HSG A
13,672	98	Paved parking & roofs
211,854	54	Weighted Average
198,182	51	93.55% Pervious Area
13,672	98	6.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	150	0.1200	0.17		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
1.2	137	0.1400	1.87		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
5.9	292	0.0270	0.82		Shallow Concentrated Flow, CD Woodland Kv= 5.0 fps
0.9	87	0.1100	1.66		Shallow Concentrated Flow, DE Woodland Kv= 5.0 fps
22.5	666	Total			

Summary for Subcatchment Pre 1C: Pre 1C

Runoff = 1.55 cfs @ 12.49 hrs, Volume= 0.246 af, Depth> 0.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 year Rainfall=4.60"

Area (sf)	CN	Description
43,172	48	Brush, Poor, HSG A
111,739	57	Woods/grass comb., Poor, HSG A
2,375	98	Paved parking & roofs
157,286	55	Weighted Average
154,911	54	98.49% Pervious Area
2,375	98	1.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	150	0.0500	0.12		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
1.0	156	0.2600	2.55		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
6.5	336	0.0300	0.87		Shallow Concentrated Flow, CD Woodland Kv= 5.0 fps
28.1	642	Total			

12013 Pre-Offsite

Type III 24-hr 10 year Rainfall=4.60"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 14

Summary for Subcatchment Pre 1D: Pre 1D

Runoff = 0.14 cfs @ 12.49 hrs, Volume= 0.040 af, Depth> 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 year Rainfall=4.60"

Area (sf)	CN	Description
33,479	48	Brush, Poor, HSG A
103,175	36	Woods, Fair, HSG A
136,654	39	Weighted Average
136,654	39	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4	133	0.0600	0.13		Sheet Flow, AB
					Woods: Light underbrush n= 0.400 P2= 3.20"
1.8	257	0.2200	2.35		Shallow Concentrated Flow, BC
					Woodland Kv= 5.0 fps
19.2	390	Total			

Summary for Subcatchment Pre 2A: Pre 2A

Runoff = 1.28 cfs @ 12.09 hrs, Volume= 0.101 af, Depth> 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 year Rainfall=4.60"

Area (sf)	CN	Description
0	48	Brush, Poor, HSG A
0	36	Woods, Fair, HSG A
6,898	98	Paved parking & roofs
14,330	68	<50% Grass cover, Poor, HSG A
21,228	78	Weighted Average
14,330	68	67.51% Pervious Area
6,898	98	32.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0500	1.44		Sheet Flow, AB
					Smooth surfaces n= 0.011 P2= 3.20"
2.7	725	0.0500	4.54		Shallow Concentrated Flow,
					Paved Kv= 20.3 fps
2.9	745	Total, Increased to minimum Tc = 6.0 min			

12013 Pre-Offsite

Type III 24-hr 10 year Rainfall=4.60"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 15

Summary for Subcatchment Pre 2B: Pre 2B

Runoff = 0.73 cfs @ 12.36 hrs, Volume= 0.151 af, Depth> 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 year Rainfall=4.60"

Area (sf)	CN	Description
103,591	48	Brush, Poor, HSG A
168,808	36	Woods, Fair, HSG A
5,358	98	Paved parking & roofs
277,757	42	Weighted Average
272,399	41	98.07% Pervious Area
5,358	98	1.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	150	0.1800	0.20		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.7	341	0.0400	1.00		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
0.2	78	0.0200	8.05	418.35	Trap/Vee/Rect Channel Flow, CD Bot.W=10.00' D=2.00' Z= 8.0 '/' Top.W=42.00' n= 0.030 Earth, grassed & winding
18.2	569	Total			

Summary for Subcatchment Pre 2C: Pre 2C

Runoff = 2.52 cfs @ 12.25 hrs, Volume= 0.317 af, Depth> 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 year Rainfall=4.60"

Area (sf)	CN	Description
144,839	36	Woods, Fair, HSG A
10,452	98	Paved parking & roofs
24,197	98	Water Surface, 0% imp
14,449	48	Brush, Poor, HSG A
193,937	48	Weighted Average
183,485	45	94.61% Pervious Area
10,452	98	5.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	150	0.1300	0.18		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.0	364	0.0600	1.22		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
19.0	514	Total			

12013 Pre-Offsite

Type III 24-hr 10 year Rainfall=4.60"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 16

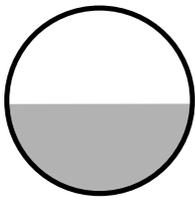
Summary for Reach 18" Pipe: 18" Pipe

Inflow Area = 3.664 ac, 37.96% Impervious, Inflow Depth > 2.11" for 10 year event
Inflow = 4.94 cfs @ 12.30 hrs, Volume= 0.643 af
Outflow = 4.93 cfs @ 12.31 hrs, Volume= 0.643 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.85 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.30 fps, Avg. Travel Time= 0.9 min

Peak Storage= 101 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.72'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.50 cfs

18.0" Round Pipe
n= 0.013
Length= 120.0' Slope= 0.0100 '/'
Inlet Invert= 48.91', Outlet Invert= 47.71'



Summary for Reach Pre Pond: Pre Pond

Inflow Area = 31.306 ac, 7.69% Impervious, Inflow Depth > 0.80" for 10 year event
Inflow = 13.38 cfs @ 12.33 hrs, Volume= 2.090 af
Outflow = 13.38 cfs @ 12.33 hrs, Volume= 2.090 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

12013 Pre-Offsite

Type III 24-hr 25 year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 17

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentOffsite DOT: Offsite DOT Runoff Area=159,601 sf 37.96% Impervious Runoff Depth>2.71"
 Flow Length=1,589' Slope=0.0750 '/' Tc=21.8 min CN=71 Runoff=6.51 cfs 0.828 af

SubcatchmentPre 1A: Pre 1A Runoff Area=205,388 sf 2.71% Impervious Runoff Depth>1.03"
 Flow Length=511' Tc=19.8 min CN=51 Runoff=2.86 cfs 0.406 af

SubcatchmentPre 1B: Pre 1B Runoff Area=211,854 sf 6.45% Impervious Runoff Depth>1.25"
 Flow Length=666' Tc=22.5 min CN=54 Runoff=3.57 cfs 0.506 af

SubcatchmentPre 1C: Pre 1C Runoff Area=157,286 sf 1.51% Impervious Runoff Depth>1.27"
 Flow Length=642' Tc=28.1 min CN=55 Runoff=2.66 cfs 0.381 af

SubcatchmentPre 1D: Pre 1D Runoff Area=136,654 sf 0.00% Impervious Runoff Depth>0.33"
 Flow Length=390' Tc=19.2 min CN=39 Runoff=0.32 cfs 0.087 af

SubcatchmentPre 2A: Pre 2A Runoff Area=21,228 sf 32.49% Impervious Runoff Depth>3.22"
 Flow Length=745' Slope=0.0500 '/' Tc=6.0 min CN=78 Runoff=1.67 cfs 0.131 af

SubcatchmentPre 2B: Pre 2B Runoff Area=277,757 sf 1.93% Impervious Runoff Depth>0.51"
 Flow Length=569' Tc=18.2 min CN=42 Runoff=1.42 cfs 0.269 af

SubcatchmentPre 2C: Pre 2C Runoff Area=193,937 sf 5.39% Impervious Runoff Depth>1.14"
 Flow Length=514' Tc=19.0 min CN=48 Runoff=3.09 cfs 0.422 af

Reach 18" Pipe: 18" Pipe Avg. Flow Depth=0.85' Max Vel=6.26 fps Inflow=6.51 cfs 0.828 af
 18.0" Round Pipe n=0.013 L=120.0' S=0.0100 '/' Capacity=10.50 cfs Outflow=6.49 cfs 0.828 af

Reach Pre Pond: Pre Pond Inflow=20.45 cfs 3.030 af
 Outflow=20.45 cfs 3.030 af

Total Runoff Area = 31.306 ac Runoff Volume = 3.030 af Average Runoff Depth = 1.16"
92.31% Pervious = 28.898 ac 7.69% Impervious = 2.408 ac

12013 Pre-Offsite

Type III 24-hr 25 year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 18

Summary for Subcatchment Offsite DOT: Offsite DOT

Runoff = 6.51 cfs @ 12.30 hrs, Volume= 0.828 af, Depth> 2.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
35,109	48	Brush, Poor, HSG A
63,906	57	Woods/grass comb., Poor, HSG A
60,586	98	Paved parking & roofs
159,601	71	Weighted Average
99,015	54	62.04% Pervious Area
60,586	98	37.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	1,589	0.0750	1.21		Lag/CN Method, Offsite DOT

Summary for Subcatchment Pre 1A: Pre 1A

Runoff = 2.86 cfs @ 12.34 hrs, Volume= 0.406 af, Depth> 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
154,026	48	Brush, Poor, HSG A
45,802	57	Woods/grass comb., Poor, HSG A
5,560	98	Paved parking & roofs
205,388	51	Weighted Average
199,828	50	97.29% Pervious Area
5,560	98	2.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	150	0.0600	0.13		Sheet Flow, AB
					Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	361	0.0200	8.05	418.35	Trap/Vee/Rect Channel Flow, BC
					Bot.W=10.00' D=2.00' Z= 8.0 '/' Top.W=42.00'
					n= 0.030 Earth, grassed & winding
19.8	511	Total			

Summary for Subcatchment Pre 1B: Pre 1B

Runoff = 3.57 cfs @ 12.37 hrs, Volume= 0.506 af, Depth> 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=5.50"

12013 Pre-Offsite

Type III 24-hr 25 year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 19

Area (sf)	CN	Description
132,992	48	Brush, Poor, HSG A
65,190	57	Woods/grass comb., Poor, HSG A
13,672	98	Paved parking & roofs
211,854	54	Weighted Average
198,182	51	93.55% Pervious Area
13,672	98	6.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	150	0.1200	0.17		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
1.2	137	0.1400	1.87		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
5.9	292	0.0270	0.82		Shallow Concentrated Flow, CD Woodland Kv= 5.0 fps
0.9	87	0.1100	1.66		Shallow Concentrated Flow, DE Woodland Kv= 5.0 fps
22.5	666	Total			

Summary for Subcatchment Pre 1C: Pre 1C

Runoff = 2.66 cfs @ 12.46 hrs, Volume= 0.381 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
43,172	48	Brush, Poor, HSG A
111,739	57	Woods/grass comb., Poor, HSG A
2,375	98	Paved parking & roofs
157,286	55	Weighted Average
154,911	54	98.49% Pervious Area
2,375	98	1.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	150	0.0500	0.12		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
1.0	156	0.2600	2.55		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
6.5	336	0.0300	0.87		Shallow Concentrated Flow, CD Woodland Kv= 5.0 fps
28.1	642	Total			

12013 Pre-Offsite

Type III 24-hr 25 year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 20

Summary for Subcatchment Pre 1D: Pre 1D

Runoff = 0.32 cfs @ 12.40 hrs, Volume= 0.087 af, Depth> 0.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
33,479	48	Brush, Poor, HSG A
103,175	36	Woods, Fair, HSG A
136,654	39	Weighted Average
136,654	39	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4	133	0.0600	0.13		Sheet Flow, AB
					Woods: Light underbrush n= 0.400 P2= 3.20"
1.8	257	0.2200	2.35		Shallow Concentrated Flow, BC
					Woodland Kv= 5.0 fps
19.2	390	Total			

Summary for Subcatchment Pre 2A: Pre 2A

Runoff = 1.67 cfs @ 12.09 hrs, Volume= 0.131 af, Depth> 3.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
0	48	Brush, Poor, HSG A
0	36	Woods, Fair, HSG A
6,898	98	Paved parking & roofs
14,330	68	<50% Grass cover, Poor, HSG A
21,228	78	Weighted Average
14,330	68	67.51% Pervious Area
6,898	98	32.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0500	1.44		Sheet Flow, AB
					Smooth surfaces n= 0.011 P2= 3.20"
2.7	725	0.0500	4.54		Shallow Concentrated Flow,
					Paved Kv= 20.3 fps
2.9	745	Total, Increased to minimum Tc = 6.0 min			

12013 Pre-Offsite

Type III 24-hr 25 year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 21

Summary for Subcatchment Pre 2B: Pre 2B

Runoff = 1.42 cfs @ 12.32 hrs, Volume= 0.269 af, Depth> 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
103,591	48	Brush, Poor, HSG A
168,808	36	Woods, Fair, HSG A
5,358	98	Paved parking & roofs
277,757	42	Weighted Average
272,399	41	98.07% Pervious Area
5,358	98	1.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	150	0.1800	0.20		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.7	341	0.0400	1.00		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
0.2	78	0.0200	8.05	418.35	Trap/Vee/Rect Channel Flow, CD Bot.W=10.00' D=2.00' Z= 8.0 '/' Top.W=42.00' n= 0.030 Earth, grassed & winding
18.2	569	Total			

Summary for Subcatchment Pre 2C: Pre 2C

Runoff = 3.09 cfs @ 12.25 hrs, Volume= 0.422 af, Depth> 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=5.50"

Area (sf)	CN	Description
144,839	36	Woods, Fair, HSG A
10,452	98	Paved parking & roofs
24,197	98	Water Surface, 0% imp
14,449	48	Brush, Poor, HSG A
193,937	48	Weighted Average
183,485	45	94.61% Pervious Area
10,452	98	5.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	150	0.1300	0.18		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.0	364	0.0600	1.22		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
19.0	514	Total			

12013 Pre-Offsite

Type III 24-hr 25 year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 22

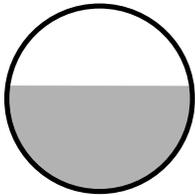
Summary for Reach 18" Pipe: 18" Pipe

Inflow Area = 3.664 ac, 37.96% Impervious, Inflow Depth > 2.71" for 25 year event
Inflow = 6.51 cfs @ 12.30 hrs, Volume= 0.828 af
Outflow = 6.49 cfs @ 12.31 hrs, Volume= 0.828 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.26 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.47 fps, Avg. Travel Time= 0.8 min

Peak Storage= 125 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.85'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.50 cfs

18.0" Round Pipe
n= 0.013
Length= 120.0' Slope= 0.0100 '/'
Inlet Invert= 48.91', Outlet Invert= 47.71'



Summary for Reach Pre Pond: Pre Pond

Inflow Area = 31.306 ac, 7.69% Impervious, Inflow Depth > 1.16" for 25 year event
Inflow = 20.45 cfs @ 12.33 hrs, Volume= 3.030 af
Outflow = 20.45 cfs @ 12.33 hrs, Volume= 3.030 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

12013 Pre-Offsite

Type III 24-hr 100 year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 23

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentOffsite DOT: Offsite DOT Runoff Area=159,601 sf 37.96% Impervious Runoff Depth>3.58"
 Flow Length=1,589' Slope=0.0750 '/' Tc=21.8 min CN=71 Runoff=8.81 cfs 1.093 af

SubcatchmentPre 1A: Pre 1A Runoff Area=205,388 sf 2.71% Impervious Runoff Depth>1.64"
 Flow Length=511' Tc=19.8 min CN=51 Runoff=5.19 cfs 0.645 af

SubcatchmentPre 1B: Pre 1B Runoff Area=211,854 sf 6.45% Impervious Runoff Depth>1.90"
 Flow Length=666' Tc=22.5 min CN=54 Runoff=5.97 cfs 0.769 af

SubcatchmentPre 1C: Pre 1C Runoff Area=157,286 sf 1.51% Impervious Runoff Depth>1.95"
 Flow Length=642' Tc=28.1 min CN=55 Runoff=4.41 cfs 0.588 af

SubcatchmentPre 1D: Pre 1D Runoff Area=136,654 sf 0.00% Impervious Runoff Depth>0.68"
 Flow Length=390' Tc=19.2 min CN=39 Runoff=0.92 cfs 0.178 af

SubcatchmentPre 2A: Pre 2A Runoff Area=21,228 sf 32.49% Impervious Runoff Depth>4.24"
 Flow Length=745' Slope=0.0500 '/' Tc=6.0 min CN=78 Runoff=2.21 cfs 0.172 af

SubcatchmentPre 2B: Pre 2B Runoff Area=277,757 sf 1.93% Impervious Runoff Depth>0.91"
 Flow Length=569' Tc=18.2 min CN=42 Runoff=2.91 cfs 0.481 af

SubcatchmentPre 2C: Pre 2C Runoff Area=193,937 sf 5.39% Impervious Runoff Depth>1.60"
 Flow Length=514' Tc=19.0 min CN=48 Runoff=4.05 cfs 0.594 af

Reach 18" Pipe: 18" Pipe Avg. Flow Depth=1.05' Max Vel=6.66 fps Inflow=8.81 cfs 1.093 af
 18.0" Round Pipe n=0.013 L=120.0' S=0.0100 '/' Capacity=10.50 cfs Outflow=8.78 cfs 1.093 af

Reach Pre Pond: Pre Pond Inflow=32.41 cfs 4.518 af
 Outflow=32.41 cfs 4.518 af

Total Runoff Area = 31.306 ac Runoff Volume = 4.519 af Average Runoff Depth = 1.73"
92.31% Pervious = 28.898 ac 7.69% Impervious = 2.408 ac

12013 Pre-Offsite

Type III 24-hr 100 year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 24

Summary for Subcatchment Offsite DOT: Offsite DOT

Runoff = 8.81 cfs @ 12.30 hrs, Volume= 1.093 af, Depth> 3.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=6.70"

Area (sf)	CN	Description
35,109	48	Brush, Poor, HSG A
63,906	57	Woods/grass comb., Poor, HSG A
60,586	98	Paved parking & roofs
159,601	71	Weighted Average
99,015	54	62.04% Pervious Area
60,586	98	37.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	1,589	0.0750	1.21		Lag/CN Method, Offsite DOT

Summary for Subcatchment Pre 1A: Pre 1A

Runoff = 5.19 cfs @ 12.32 hrs, Volume= 0.645 af, Depth> 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=6.70"

Area (sf)	CN	Description
154,026	48	Brush, Poor, HSG A
45,802	57	Woods/grass comb., Poor, HSG A
5,560	98	Paved parking & roofs
205,388	51	Weighted Average
199,828	50	97.29% Pervious Area
5,560	98	2.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	150	0.0600	0.13		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	361	0.0200	8.05	418.35	Trap/Vee/Rect Channel Flow, BC Bot.W=10.00' D=2.00' Z= 8.0 '/' Top.W=42.00' n= 0.030 Earth, grassed & winding
19.8	511	Total			

Summary for Subcatchment Pre 1B: Pre 1B

Runoff = 5.97 cfs @ 12.35 hrs, Volume= 0.769 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=6.70"

12013 Pre-Offsite

Type III 24-hr 100 year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 25

Area (sf)	CN	Description
132,992	48	Brush, Poor, HSG A
65,190	57	Woods/grass comb., Poor, HSG A
13,672	98	Paved parking & roofs
211,854	54	Weighted Average
198,182	51	93.55% Pervious Area
13,672	98	6.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	150	0.1200	0.17		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
1.2	137	0.1400	1.87		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
5.9	292	0.0270	0.82		Shallow Concentrated Flow, CD Woodland Kv= 5.0 fps
0.9	87	0.1100	1.66		Shallow Concentrated Flow, DE Woodland Kv= 5.0 fps
22.5	666	Total			

Summary for Subcatchment Pre 1C: Pre 1C

Runoff = 4.41 cfs @ 12.43 hrs, Volume= 0.588 af, Depth> 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=6.70"

Area (sf)	CN	Description
43,172	48	Brush, Poor, HSG A
111,739	57	Woods/grass comb., Poor, HSG A
2,375	98	Paved parking & roofs
157,286	55	Weighted Average
154,911	54	98.49% Pervious Area
2,375	98	1.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.6	150	0.0500	0.12		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
1.0	156	0.2600	2.55		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
6.5	336	0.0300	0.87		Shallow Concentrated Flow, CD Woodland Kv= 5.0 fps
28.1	642	Total			

12013 Pre-Offsite

Type III 24-hr 100 year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 26

Summary for Subcatchment Pre 1D: Pre 1D

Runoff = 0.92 cfs @ 12.45 hrs, Volume= 0.178 af, Depth> 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=6.70"

Area (sf)	CN	Description
33,479	48	Brush, Poor, HSG A
103,175	36	Woods, Fair, HSG A
136,654	39	Weighted Average
136,654	39	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.4	133	0.0600	0.13		Sheet Flow, AB
					Woods: Light underbrush n= 0.400 P2= 3.20"
1.8	257	0.2200	2.35		Shallow Concentrated Flow, BC
					Woodland Kv= 5.0 fps
19.2	390	Total			

Summary for Subcatchment Pre 2A: Pre 2A

Runoff = 2.21 cfs @ 12.09 hrs, Volume= 0.172 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=6.70"

Area (sf)	CN	Description
0	48	Brush, Poor, HSG A
0	36	Woods, Fair, HSG A
6,898	98	Paved parking & roofs
14,330	68	<50% Grass cover, Poor, HSG A
21,228	78	Weighted Average
14,330	68	67.51% Pervious Area
6,898	98	32.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0500	1.44		Sheet Flow, AB
					Smooth surfaces n= 0.011 P2= 3.20"
2.7	725	0.0500	4.54		Shallow Concentrated Flow,
					Paved Kv= 20.3 fps
2.9	745	Total, Increased to minimum Tc = 6.0 min			

12013 Pre-Offsite

Type III 24-hr 100 year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 27

Summary for Subcatchment Pre 2B: Pre 2B

Runoff = 2.91 cfs @ 12.33 hrs, Volume= 0.481 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=6.70"

Area (sf)	CN	Description
103,591	48	Brush, Poor, HSG A
168,808	36	Woods, Fair, HSG A
5,358	98	Paved parking & roofs
277,757	42	Weighted Average
272,399	41	98.07% Pervious Area
5,358	98	1.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	150	0.1800	0.20		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.7	341	0.0400	1.00		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
0.2	78	0.0200	8.05	418.35	Trap/Vee/Rect Channel Flow, CD Bot.W=10.00' D=2.00' Z= 8.0 '/' Top.W=42.00' n= 0.030 Earth, grassed & winding
18.2	569	Total			

Summary for Subcatchment Pre 2C: Pre 2C

Runoff = 4.05 cfs @ 12.27 hrs, Volume= 0.594 af, Depth> 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=6.70"

Area (sf)	CN	Description
144,839	36	Woods, Fair, HSG A
10,452	98	Paved parking & roofs
24,197	98	Water Surface, 0% imp
14,449	48	Brush, Poor, HSG A
193,937	48	Weighted Average
183,485	45	94.61% Pervious Area
10,452	98	5.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	150	0.1300	0.18		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
5.0	364	0.0600	1.22		Shallow Concentrated Flow, BC Woodland Kv= 5.0 fps
19.0	514	Total			

12013 Pre-Offsite

Type III 24-hr 100 year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 10/3/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 28

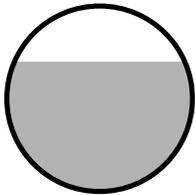
Summary for Reach 18" Pipe: 18" Pipe

Inflow Area = 3.664 ac, 37.96% Impervious, Inflow Depth > 3.58" for 100 year event
Inflow = 8.81 cfs @ 12.30 hrs, Volume= 1.093 af
Outflow = 8.78 cfs @ 12.31 hrs, Volume= 1.093 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.66 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.66 fps, Avg. Travel Time= 0.8 min

Peak Storage= 159 cf @ 12.31 hrs
Average Depth at Peak Storage= 1.05'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.50 cfs

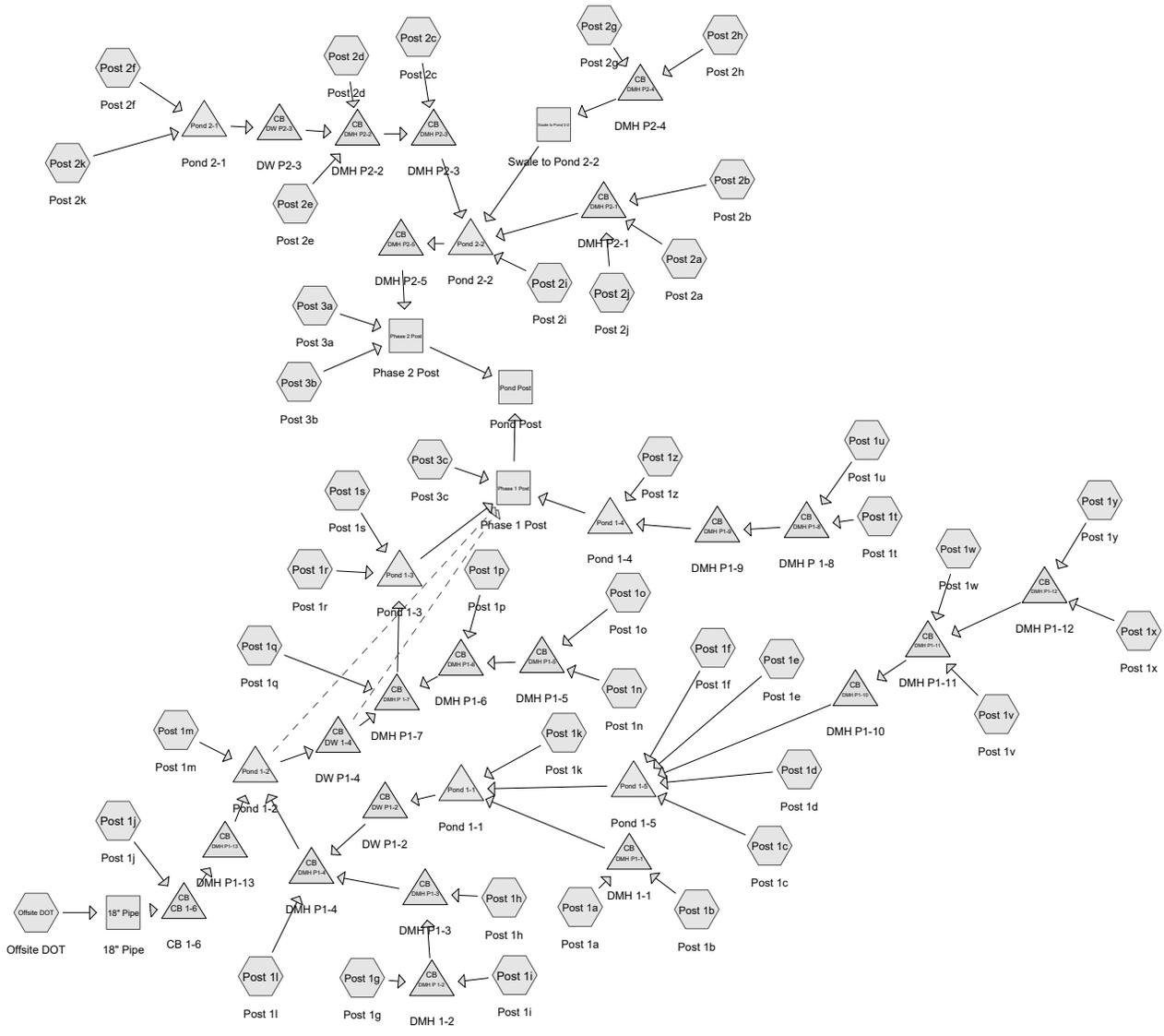
18.0" Round Pipe
n= 0.013
Length= 120.0' Slope= 0.0100 '/'
Inlet Invert= 48.91', Outlet Invert= 47.71'



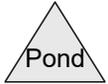
Summary for Reach Pre Pond: Pre Pond

Inflow Area = 31.306 ac, 7.69% Impervious, Inflow Depth > 1.73" for 100 year event
Inflow = 32.41 cfs @ 12.33 hrs, Volume= 4.518 af
Outflow = 32.41 cfs @ 12.33 hrs, Volume= 4.518 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



Reach



Routing Diagram for 2013 Post - Offsite
 Prepared by {enter your company name here}, Printed 8/23/2016
 HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

12013 Post - Offsite

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.037	39	>75% Grass cover, Good, HSG A (Post 1a, Post 1b, Post 1c, Post 1d, Post 1e, Post 1f, Post 1g, Post 1h, Post 1j, Post 1k, Post 1l, Post 1m, Post 1n, Post 1o, Post 1p, Post 1q, Post 1r, Post 1s, Post 1t, Post 1u, Post 1v, Post 1w, Post 1x, Post 1y, Post 1z, Post 2a, Post 2c, Post 2d, Post 2e, Post 2f, Post 2g, Post 2h, Post 2i, Post 2j, Post 2k, Post 3a, Post 3b, Post 3c)
0.806	48	Brush, Poor, HSG A (Offsite DOT)
1.391	98	Paved parking & roofs (Offsite DOT)
3.462	98	Paved parking, HSG A (Post 1a, Post 1b, Post 1c, Post 1d, Post 1f, Post 1g, Post 1h, Post 1i, Post 1j, Post 1l, Post 1m, Post 1n, Post 1o, Post 1p, Post 1q, Post 1r, Post 1s, Post 1t, Post 1u, Post 1v, Post 1w, Post 1x, Post 1y, Post 1z, Post 2a, Post 2b, Post 2c, Post 2d, Post 2e, Post 2f, Post 2g, Post 2h, Post 2i, Post 2j, Post 3b, Post 3c)
3.635	98	Roofs, HSG A (Post 1a, Post 1c, Post 1d, Post 1f, Post 1g, Post 1h, Post 1j, Post 1k, Post 1l, Post 1m, Post 1n, Post 1o, Post 1p, Post 1q, Post 1r, Post 1s, Post 1t, Post 1u, Post 1v, Post 1w, Post 1y, Post 1z, Post 2a, Post 2c, Post 2d, Post 2e, Post 2f, Post 2g, Post 2h, Post 2i, Post 2j, Post 2k, Post 3b, Post 3c)
0.784	98	Unconnected pavement, HSG A (Post 1a, Post 1b, Post 1c, Post 1d, Post 1h, Post 1j, Post 1m, Post 2a, Post 2b, Post 2f, Post 2g, Post 3a, Post 3b)
0.555	98	Water Surface, HSG A (Post 3b)
7.169	36	Woods, Fair, HSG A (Post 1c, Post 1d, Post 1e, Post 1h, Post 1j, Post 1m, Post 1x, Post 2f, Post 2g, Post 2j, Post 3a, Post 3b, Post 3c)
1.467	57	Woods/grass comb., Poor, HSG A (Offsite DOT)
31.306	58	TOTAL AREA

12013 Post - Offsite

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 3

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
29.915	HSG A	Offsite DOT, Post 1a, Post 1b, Post 1c, Post 1d, Post 1e, Post 1f, Post 1g, Post 1h, Post 1i, Post 1j, Post 1k, Post 1l, Post 1m, Post 1n, Post 1o, Post 1p, Post 1q, Post 1r, Post 1s, Post 1t, Post 1u, Post 1v, Post 1w, Post 1x, Post 1y, Post 1z, Post 2a, Post 2b, Post 2c, Post 2d, Post 2e, Post 2f, Post 2g, Post 2h, Post 2i, Post 2j, Post 2k, Post 3a, Post 3b, Post 3c
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
1.391	Other	Offsite DOT
31.306		TOTAL AREA

12013 Post - Offsite

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 4

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
12.037	0.000	0.000	0.000	0.000	12.037	>75% Grass cover, Good	Post 1a, Post 1b, Post 1c, Post 1d, Post 1e, Post 1f, Post 1g, Post 1h, Post 1j, Post 1k, Post 1l, Post 1m, Post 1n, Post 1o, Post 1p, Post 1q, Post 1r, Post 1s, Post 1t, Post 1u, Post 1v, Post 1w, Post 1x, Post 1y, Post 1z, Post

12013 Post - Offsite

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 5

Ground Covers (selected nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.806	0.000	0.000	0.000	0.000	0.806	Brush, Poor	Offsite DOT
3.462	0.000	0.000	0.000	0.000	3.462	Paved parking	Post 1a, Post 1b, Post 1c, Post 1d, Post 1f, Post 1g, Post 1h, Post 1i, Post 1j, Post 1l, Post 1m, Post 1n, Post 1o, Post 1p, Post 1q, Post 1r, Post 1s, Post 1t, Post 1u, Post 1v, Post 1w, Post 1x, Post 1y, Post 1z, Post 2a,

12013 Post - Offsite

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 6

Ground Covers (selected nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	1.391	1.391	Paved parking & roofs	Offsite DOT
3.635	0.000	0.000	0.000	0.000	3.635	Roofs	Post 1a, Post 1c, Post 1d, Post 1f, Post 1g, Post 1h, Post 1j, Post 1k, Post 1l, Post 1m, Post 1n, Post 1o, Post 1p, Post 1q, Post 1r, Post 1s, Post 1t, Post 1u, Post 1v, Post 1w, Post 1y, Post 1z, Post 2a, Post 2c, Post

12013 Post - Offsite

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 7

Ground Covers (selected nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.784	0.000	0.000	0.000	0.000	0.784	Unconnected pavement	Post 1a, Post 1b, Post 1c, Post 1d, Post 1h, Post 1j, Post 1m, Post 2a, Post 2b, Post 2f, Post 2g, Post 3a, Post 3b
0.555	0.000	0.000	0.000	0.000	0.555	Water Surface	Post 3b
7.169	0.000	0.000	0.000	0.000	7.169	Woods, Fair	Post 1c, Post 1d, Post 1e, Post 1h, Post 1j, Post 1m, Post 1x, Post 2f, Post 2g, Post 2j, Post 3a, Post 3b, Post 3c

12013 Post - Offsite

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 8

Ground Covers (selected nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.467	0.000	0.000	0.000	0.000	1.467	Woods/grass comb., Poor	Offsite
29.915	0.000	0.000	0.000	1.391	31.306	TOTAL AREA	DOT

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 9

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentOffsite DOT: Offsite DOT	Runoff Area=159,601 sf 37.96% Impervious Runoff Depth>1.21" Flow Length=1,589' Slope=0.0750 '/' Tc=21.8 min CN=71 Runoff=2.82 cfs 0.370 af
SubcatchmentPost 1a: Post 1a	Runoff Area=6,252 sf 95.59% Impervious Runoff Depth>2.74" Flow Length=239' Tc=1.0 min CN=95 Runoff=0.46 cfs 0.033 af
SubcatchmentPost 1b: Post 1b	Runoff Area=4,636 sf 97.76% Impervious Runoff Depth>2.80" Flow Length=290' Tc=1.3 min CN=97 Runoff=0.34 cfs 0.025 af
SubcatchmentPost 1c: Post 1c	Runoff Area=29,936 sf 42.27% Impervious Runoff Depth>1.21" Flow Length=239' Tc=1.3 min CN=63 Runoff=0.96 cfs 0.069 af
SubcatchmentPost 1d: Post 1d	Runoff Area=20,256 sf 10.24% Impervious Runoff Depth>0.29" Flow Length=200' Tc=18.1 min UI Adjusted CN=41 Runoff=0.10 cfs 0.011 af
SubcatchmentPost 1e: Post 1e	Runoff Area=23,349 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=89' Tc=10.2 min CN=38 Runoff=0.00 cfs 0.000 af
SubcatchmentPost 1f: Post 1f	Runoff Area=82,367 sf 25.75% Impervious Runoff Depth>0.74" Flow Length=478' Tc=9.5 min CN=54 Runoff=1.28 cfs 0.116 af
SubcatchmentPost 1g: Post 1g	Runoff Area=15,897 sf 69.30% Impervious Runoff Depth>1.99" Flow Length=300' Tc=1.0 min CN=80 Runoff=0.85 cfs 0.060 af
SubcatchmentPost 1h: Post 1h	Runoff Area=83,632 sf 27.38% Impervious Runoff Depth>0.78" Flow Length=523' Tc=5.8 min UI Adjusted CN=51 Runoff=1.55 cfs 0.126 af
SubcatchmentPost 1i: Post 1i	Runoff Area=3,042 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=266' Tc=1.0 min CN=98 Runoff=0.23 cfs 0.017 af
SubcatchmentPost 1j: Post 1j	Runoff Area=8,891 sf 22.49% Impervious Runoff Depth>0.65" Flow Length=124' Tc=0.9 min UI Adjusted CN=51 Runoff=0.15 cfs 0.011 af
SubcatchmentPost 1k: Post 1k	Runoff Area=31,689 sf 22.34% Impervious Runoff Depth>0.64" Flow Length=200' Tc=3.0 min CN=52 Runoff=0.53 cfs 0.039 af
SubcatchmentPost 1l: Post 1l	Runoff Area=14,607 sf 84.31% Impervious Runoff Depth>2.42" Flow Length=271' Tc=5.5 min CN=89 Runoff=0.84 cfs 0.068 af
SubcatchmentPost 1m: Post 1m	Runoff Area=54,912 sf 21.57% Impervious Runoff Depth>0.62" Flow Length=249' Tc=2.6 min UI Adjusted CN=50 Runoff=0.89 cfs 0.065 af
SubcatchmentPost 1n: Post 1n	Runoff Area=16,566 sf 42.96% Impervious Runoff Depth>1.23" Flow Length=236' Tc=1.2 min CN=64 Runoff=0.54 cfs 0.039 af
SubcatchmentPost 1o: Post 1o	Runoff Area=14,474 sf 77.53% Impervious Runoff Depth>2.22" Flow Length=191' Slope=0.0150 '/' Tc=1.8 min CN=85 Runoff=0.84 cfs 0.062 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 10

SubcatchmentPost 1p: Post 1p	Runoff Area=6,584 sf 80.95% Impervious Runoff Depth>2.32" Flow Length=127' Tc=0.7 min CN=87 Runoff=0.42 cfs 0.029 af
SubcatchmentPost 1q: Post 1q	Runoff Area=4,608 sf 77.43% Impervious Runoff Depth>2.22" Flow Length=75' Tc=0.4 min CN=85 Runoff=0.28 cfs 0.020 af
SubcatchmentPost 1r: Post 1r	Runoff Area=6,804 sf 88.18% Impervious Runoff Depth>2.53" Flow Length=169' Tc=1.1 min CN=91 Runoff=0.46 cfs 0.033 af
SubcatchmentPost 1s: Post 1s	Runoff Area=12,365 sf 18.27% Impervious Runoff Depth>0.52" Flow Length=118' Tc=0.5 min CN=50 Runoff=0.18 cfs 0.012 af
SubcatchmentPost 1t: Post 1t	Runoff Area=24,013 sf 83.39% Impervious Runoff Depth>2.39" Flow Length=304' Tc=1.5 min CN=88 Runoff=1.51 cfs 0.110 af
SubcatchmentPost 1u: Post 1u	Runoff Area=27,102 sf 80.43% Impervious Runoff Depth>2.31" Flow Length=358' Tc=2.0 min CN=86 Runoff=1.63 cfs 0.120 af
SubcatchmentPost 1v: Post 1v	Runoff Area=10,841 sf 92.44% Impervious Runoff Depth>2.65" Flow Length=244' Tc=0.8 min CN=94 Runoff=0.78 cfs 0.055 af
SubcatchmentPost 1w: Post 1w	Runoff Area=12,069 sf 85.92% Impervious Runoff Depth>2.46" Flow Length=250' Tc=1.0 min CN=90 Runoff=0.80 cfs 0.057 af
SubcatchmentPost 1x: Post 1x	Runoff Area=28,013 sf 11.12% Impervious Runoff Depth>0.32" Flow Length=281' Tc=5.9 min CN=45 Runoff=0.21 cfs 0.017 af
SubcatchmentPost 1y: Post 1y	Runoff Area=5,336 sf 98.84% Impervious Runoff Depth>2.83" Flow Length=269' Tc=1.0 min CN=97 Runoff=0.41 cfs 0.029 af
SubcatchmentPost 1z: Post 1z	Runoff Area=25,257 sf 31.61% Impervious Runoff Depth>0.91" Flow Length=97' Tc=1.1 min CN=58 Runoff=0.61 cfs 0.044 af
SubcatchmentPost 2a: Post 2a	Runoff Area=5,548 sf 96.88% Impervious Runoff Depth>2.78" Flow Length=242' Slope=0.0800 '/' Tc=0.8 min CN=96 Runoff=0.42 cfs 0.029 af
SubcatchmentPost 2b: Post 2b	Runoff Area=3,935 sf 100.00% Impervious Runoff Depth>2.87" Flow Length=259' Slope=0.0800 '/' Tc=0.9 min CN=98 Runoff=0.30 cfs 0.022 af
SubcatchmentPost 2c: Post 2c	Runoff Area=20,579 sf 83.57% Impervious Runoff Depth>2.40" Flow Length=228' Slope=0.0200 '/' Tc=1.5 min CN=88 Runoff=1.29 cfs 0.094 af
SubcatchmentPost 2d: Post 2d	Runoff Area=19,582 sf 78.76% Impervious Runoff Depth>2.26" Flow Length=252' Tc=1.2 min CN=85 Runoff=1.18 cfs 0.085 af
SubcatchmentPost 2e: Post 2e	Runoff Area=8,242 sf 45.00% Impervious Runoff Depth>1.29" Flow Length=416' Tc=13.6 min CN=66 Runoff=0.20 cfs 0.020 af
SubcatchmentPost 2f: Post 2f	Runoff Area=87,061 sf 9.23% Impervious Runoff Depth>0.26" Flow Length=256' Tc=2.3 min UI Adjusted CN=42 Runoff=0.60 cfs 0.044 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 11

Subcatchment Post 2g: Post 2g	Runoff Area=26,366 sf 6.30% Impervious Runoff Depth>0.18" Flow Length=296' Tc=2.5 min CN=41 Runoff=0.12 cfs 0.009 af
Subcatchment Post 2h: Post 2h	Runoff Area=6,563 sf 71.02% Impervious Runoff Depth>2.04" Flow Length=117' Slope=0.0600 '/' Tc=0.8 min CN=81 Runoff=0.36 cfs 0.026 af
Subcatchment Post 2i: Post 2i	Runoff Area=52,643 sf 23.27% Impervious Runoff Depth>0.67" Flow Length=424' Tc=9.2 min CN=53 Runoff=0.75 cfs 0.067 af
Subcatchment Post 2j: Post 2j	Runoff Area=12,114 sf 4.53% Impervious Runoff Depth>0.13" Flow Length=151' Slope=0.3300 '/' Tc=1.8 min CN=41 Runoff=0.04 cfs 0.003 af
Subcatchment Post 2k: Post 2k	Runoff Area=12,346 sf 30.07% Impervious Runoff Depth>0.86" Flow Length=227' Tc=3.6 min CN=57 Runoff=0.27 cfs 0.020 af
Subcatchment Post 3a: Post 3a	Runoff Area=21,228 sf 33.88% Impervious Runoff Depth>0.97" Flow Length=745' Slope=0.0500 '/' Tc=2.9 min CN=59 Runoff=0.54 cfs 0.039 af
Subcatchment Post 3b: Post 3b	Runoff Area=345,589 sf 14.36% Impervious Runoff Depth>0.41" Flow Length=601' Tc=9.9 min CN=46 Runoff=2.97 cfs 0.272 af
Subcatchment Post 3c: Post 3c	Runoff Area=8,810 sf 39.01% Impervious Runoff Depth>1.12" Flow Length=132' Tc=2.1 min CN=62 Runoff=0.26 cfs 0.019 af
Reach 18" Pipe: 18" Pipe	Avg. Flow Depth=0.53' Max Vel=5.04 fps Inflow=2.82 cfs 0.370 af 18.0" Round Pipe n=0.013 L=120.0' S=0.0100 '/' Capacity=10.50 cfs Outflow=2.82 cfs 0.370 af
Reach Phase 1 Post: Phase 1 Post	Inflow=0.26 cfs 0.019 af Outflow=0.26 cfs 0.019 af
Reach Phase 2 Post: Phase 2 Post	Inflow=3.30 cfs 0.311 af Outflow=3.30 cfs 0.311 af
Reach Pond Post: Pond Post	Inflow=3.45 cfs 0.330 af Outflow=3.45 cfs 0.330 af
Reach Swale to Pond 2-2: Swale to	Avg. Flow Depth=0.11' Max Vel=1.97 fps Inflow=0.48 cfs 0.035 af n=0.035 L=165.0' S=0.0727 '/' Capacity=57.26 cfs Outflow=0.46 cfs 0.035 af
Pond CB 1-6: CB 1-6	Peak Elev=40.91' Inflow=2.87 cfs 0.381 af 18.0" Round Culvert n=0.012 L=60.0' S=0.0050 '/' Outflow=2.87 cfs 0.381 af
Pond DMH P 1-2: DMH 1-2	Peak Elev=45.64' Inflow=1.08 cfs 0.077 af 12.0" Round Culvert n=0.012 L=60.0' S=0.0433 '/' Outflow=1.08 cfs 0.077 af
Pond DMH P 1-7: DMH P1-7	Peak Elev=34.95' Inflow=2.06 cfs 0.149 af 24.0" Round Culvert n=0.012 L=84.0' S=0.0068 '/' Outflow=2.06 cfs 0.149 af
Pond DMH P1-1: DMH 1-1	Peak Elev=58.81' Inflow=0.80 cfs 0.058 af 12.0" Round Culvert n=0.012 L=30.0' S=0.0283 '/' Outflow=0.80 cfs 0.058 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 12

Pond DMH P1-10: DMH P1-10	Peak Elev=41.42'	Inflow=2.13 cfs	0.158 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0245 '/'	Outflow=2.13 cfs	0.158 af	
Pond DMH P1-11: DMH P1-11	Peak Elev=43.72'	Inflow=2.13 cfs	0.158 af
12.0" Round Culvert n=0.012 L=52.0' S=0.0404 '/'	Outflow=2.13 cfs	0.158 af	
Pond DMH P1-12: DMH P1-12	Peak Elev=55.38'	Inflow=0.56 cfs	0.046 af
12.0" Round Culvert n=0.012 L=225.0' S=0.0533 '/'	Outflow=0.56 cfs	0.046 af	
Pond DMH P1-13: DMH P1-13	Peak Elev=38.96'	Inflow=2.87 cfs	0.381 af
18.0" Round Culvert n=0.012 L=130.0' S=0.0054 '/'	Outflow=2.87 cfs	0.381 af	
Pond DMH P1-3: DMH P1-3	Peak Elev=43.18'	Inflow=2.40 cfs	0.203 af
15.0" Round Culvert n=0.012 L=142.0' S=0.0408 '/'	Outflow=2.40 cfs	0.203 af	
Pond DMH P1-4: DMH P1-4	Peak Elev=37.82'	Inflow=3.22 cfs	0.270 af
18.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/'	Outflow=3.22 cfs	0.270 af	
Pond DMH P1-5: DMH P1-5	Peak Elev=36.13'	Inflow=1.37 cfs	0.101 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0050 '/'	Outflow=1.37 cfs	0.101 af	
Pond DMH P1-6: DMH P1-6	Peak Elev=35.83'	Inflow=1.78 cfs	0.130 af
12.0" Round Culvert n=0.012 L=116.0' S=0.0050 '/'	Outflow=1.78 cfs	0.130 af	
Pond DMH P1-8: DMH P 1-8	Peak Elev=36.69'	Inflow=3.12 cfs	0.229 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0050 '/'	Outflow=3.12 cfs	0.229 af	
Pond DMH P1-9: DMH P1-9	Peak Elev=36.69'	Inflow=3.12 cfs	0.229 af
15.0" Round Culvert n=0.012 L=144.0' S=0.0049 '/'	Outflow=3.12 cfs	0.229 af	
Pond DMH P2-1: DMH P2-1	Peak Elev=47.93'	Inflow=0.76 cfs	0.054 af
12.0" Round Culvert n=0.012 L=70.0' S=0.0493 '/'	Outflow=0.76 cfs	0.054 af	
Pond DMH P2-2: DMH P2-2	Peak Elev=48.27'	Inflow=1.29 cfs	0.105 af
12.0" Round Culvert n=0.012 L=64.0' S=0.0055 '/'	Outflow=1.29 cfs	0.105 af	
Pond DMH P2-3: DMH P2-3	Peak Elev=46.14'	Inflow=2.58 cfs	0.199 af
12.0" Round Culvert n=0.012 L=110.0' S=0.0290 '/'	Outflow=2.58 cfs	0.199 af	
Pond DMH P2-4: DMH P2-4	Peak Elev=53.54'	Inflow=0.48 cfs	0.035 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0200 '/'	Outflow=0.48 cfs	0.035 af	
Pond DMH P2-5: DMH P2-5	Peak Elev=36.00'	Inflow=0.00 cfs	0.000 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0100 '/'	Outflow=0.00 cfs	0.000 af	
Pond DW 1-4: DW P1-4	Peak Elev=35.50'	Inflow=0.00 cfs	0.000 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af	Outflow=0.00 cfs	0.000 af	
Pond DW P1-2: DW P1-2	Peak Elev=37.45'	Inflow=0.00 cfs	0.000 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/'	Outflow=0.00 cfs	0.000 af	

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 13

Pond DW P2-3: DW P2-3

Peak Elev=48.30' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0050 '/ Outflow=0.00 cfs 0.000 af

Pond Pond 1-1: Pond 1-1

Peak Elev=36.45' Storage=934 cf Inflow=1.29 cfs 0.108 af
Discarded=0.44 cfs 0.109 af Primary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.109 af

Pond Pond 1-2: Pond 1-2

Peak Elev=37.82' Storage=9,207 cf Inflow=5.66 cfs 0.716 af
Discarded=1.33 cfs 0.716 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=1.33 cfs 0.716 af

Pond Pond 1-3: Pond 1-3

Peak Elev=33.47' Storage=1,549 cf Inflow=2.69 cfs 0.195 af
Discarded=0.67 cfs 0.195 af Primary=0.00 cfs 0.000 af Outflow=0.67 cfs 0.195 af

Pond Pond 1-4: Pond 1-4

Peak Elev=36.68' Storage=4,144 cf Inflow=3.71 cfs 0.273 af
Discarded=0.60 cfs 0.273 af Primary=0.00 cfs 0.000 af Outflow=0.60 cfs 0.273 af

Pond Pond 1-5: Pond 1-5

Peak Elev=39.08' Storage=3,768 cf Inflow=3.90 cfs 0.355 af
Discarded=0.89 cfs 0.343 af Primary=0.55 cfs 0.012 af Outflow=1.44 cfs 0.355 af

Pond Pond 2-1: Pond 2-1

Peak Elev=50.15' Storage=269 cf Inflow=0.87 cfs 0.064 af
Discarded=0.35 cfs 0.065 af Primary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.065 af

Pond Pond 2-2: Pond 2-2

Peak Elev=38.56' Storage=3,050 cf Inflow=4.22 cfs 0.355 af
Discarded=1.13 cfs 0.356 af Primary=0.00 cfs 0.000 af Outflow=1.13 cfs 0.356 af

**Total Runoff Area = 31.306 ac Runoff Volume = 2.385 af Average Runoff Depth = 0.91"
68.61% Pervious = 21.479 ac 31.39% Impervious = 9.827 ac**

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 14

Summary for Subcatchment Offsite DOT: Offsite DOT

Runoff = 2.82 cfs @ 12.29 hrs, Volume= 0.370 af, Depth> 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
35,109	48	Brush, Poor, HSG A
63,906	57	Woods/grass comb., Poor, HSG A
60,586	98	Paved parking & roofs
159,601	71	Weighted Average
99,015	54	62.04% Pervious Area
60,586	98	37.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	1,589	0.0750	1.21		Lag/CN Method, Offsite DOT

Summary for Subcatchment Post 1a: Post 1a

Runoff = 0.46 cfs @ 12.01 hrs, Volume= 0.033 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,040	98	Roofs, HSG A
4,198	98	Paved parking, HSG A
738	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
276	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,252	95	Weighted Average
276	39	4.41% Pervious Area
5,976	98	95.59% Impervious Area
738		12.35% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.03		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.6	214	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	239	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 15

Summary for Subcatchment Post 1b: Post 1b

Runoff = 0.34 cfs @ 12.02 hrs, Volume= 0.025 af, Depth> 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,621	98	Paved parking, HSG A
911	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
104	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
4,636	97	Weighted Average
104	39	2.24% Pervious Area
4,532	98	97.76% Impervious Area
911		20.10% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.13		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	250	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	290	Total			

Summary for Subcatchment Post 1c: Post 1c

Runoff = 0.96 cfs @ 12.02 hrs, Volume= 0.069 af, Depth> 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
2,478	98	Roofs, HSG A
7,246	98	Paved parking, HSG A
2,929	98	Unconnected pavement, HSG A
6,383	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
10,900	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
29,936	63	Weighted Average
17,283	38	57.73% Pervious Area
12,653	98	42.27% Impervious Area
2,929		23.15% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 16

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.4	58	0.2500	2.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	161	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	239	Total			

Summary for Subcatchment Post 1d: Post 1d

Runoff = 0.10 cfs @ 12.24 hrs, Volume= 0.011 af, Depth> 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Adj	Description
464	98	98	Roofs, HSG A
103	98	98	Paved parking, HSG A
1,507	98	98	Unconnected pavement, HSG A
9,452	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
8,730	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
20,256	44	41	Weighted Average, UI Adjusted
18,182	37	37	89.76% Pervious Area
2,074	98	98	10.24% Impervious Area
1,507			72.66% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0400	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	30	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	70	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.1	200	Total			

Summary for Subcatchment Post 1e: Post 1e

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 17

Area (sf)	CN	Description
0	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
11,230	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
12,119	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
23,349	38	Weighted Average
23,349	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	66	0.0600	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.1	23	0.3000	3.83		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	89	Total			

Summary for Subcatchment Post 1f: Post 1f

Runoff = 1.28 cfs @ 12.13 hrs, Volume= 0.116 af, Depth> 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
20,047	98	Roofs, HSG A
1,165	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
61,155	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
82,367	54	Weighted Average
61,155	39	74.25% Pervious Area
21,212	98	25.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	85	0.3300	0.34		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
5.4	393	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	478	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 18

Summary for Subcatchment Post 1g: Post 1g

Runoff = 0.85 cfs @ 12.01 hrs, Volume= 0.060 af, Depth> 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
3,873	98	Roofs, HSG A
7,143	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,881	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
15,897	80	Weighted Average
4,881	39	30.70% Pervious Area
11,016	98	69.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	50	0.2500	3.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	250	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	300	Total			

Summary for Subcatchment Post 1h: Post 1h

Runoff = 1.55 cfs @ 12.08 hrs, Volume= 0.126 af, Depth> 0.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Adj	Description
10,621	98	98	Roofs, HSG A
853	98	98	Paved parking, HSG A
11,421	98	98	Unconnected pavement, HSG A
12,848	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
47,889	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
83,632	55	51	Weighted Average, UI Adjusted
60,737	38	38	72.62% Pervious Area
22,895	98	98	27.38% Impervious Area
11,421			49.88% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 19

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0400	1.29		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.2	60	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	443	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	523	Total			

Summary for Subcatchment Post 1i: Post 1i

Runoff = 0.23 cfs @ 12.01 hrs, Volume= 0.017 af, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,042	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
0	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
3,042	98	Weighted Average
3,042	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	246	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	266	Total			

Summary for Subcatchment Post 1j: Post 1j

Runoff = 0.15 cfs @ 12.01 hrs, Volume= 0.011 af, Depth> 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 20

Area (sf)	CN	Adj	Description
1,317	98	98	Roofs, HSG A
308	98	98	Paved parking, HSG A
375	98	98	Unconnected pavement, HSG A
243	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
6,648	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
8,891	52	51	Weighted Average, UI Adjusted
6,891	39	39	77.51% Pervious Area
2,000	98	98	22.49% Impervious Area
375			18.75% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.85		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.5	90	0.2000	3.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	24	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.9	124	Total			

Summary for Subcatchment Post 1k: Post 1k

Runoff = 0.53 cfs @ 12.05 hrs, Volume= 0.039 af, Depth> 0.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
7,078	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
24,611	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
31,689	52	Weighted Average
24,611	39	77.66% Pervious Area
7,078	98	22.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	35	0.4000	3.64		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.8	165	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	200	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 21

Summary for Subcatchment Post 1l: Post 1l

Runoff = 0.84 cfs @ 12.08 hrs, Volume= 0.068 af, Depth> 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
4,807	98	Roofs, HSG A
7,508	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
2,292	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
14,607	89	Weighted Average
2,292	39	15.69% Pervious Area
12,315	98	84.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	60	0.0500	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.9	211	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.5	271	Total			

Summary for Subcatchment Post 1m: Post 1m

Runoff = 0.89 cfs @ 12.04 hrs, Volume= 0.065 af, Depth> 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Adj	Description
8,658	98	98	Roofs, HSG A
256	98	98	Paved parking, HSG A
2,928	98	98	Unconnected pavement, HSG A
11,179	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
31,891	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
54,912	51	50	Weighted Average, UI Adjusted
43,070	38	38	78.43% Pervious Area
11,842	98	98	21.57% Impervious Area
2,928			24.73% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 22

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.85		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.9	130	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	109	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.6	249	Total			

Summary for Subcatchment Post 1n: Post 1n

Runoff = 0.54 cfs @ 12.02 hrs, Volume= 0.039 af, Depth> 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
3,763	98	Roofs, HSG A
3,354	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
9,449	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
16,566	64	Weighted Average
9,449	39	57.04% Pervious Area
7,117	98	42.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	216	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.2	236	Total			

Summary for Subcatchment Post 1o: Post 1o

Runoff = 0.84 cfs @ 12.03 hrs, Volume= 0.062 af, Depth> 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 23

Area (sf)	CN	Description
3,247	98	Roofs, HSG A
7,974	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,253	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
14,474	85	Weighted Average
3,253	39	22.47% Pervious Area
11,221	98	77.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	60	0.0150	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	131	0.0150	2.49		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	191	Total			

Summary for Subcatchment Post 1p: Post 1p

Runoff = 0.42 cfs @ 12.01 hrs, Volume= 0.029 af, Depth> 2.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,438	98	Roofs, HSG A
3,892	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,254	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,584	87	Weighted Average
1,254	39	19.05% Pervious Area
5,330	98	80.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.4	107	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.7	127	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 24

Summary for Subcatchment Post 1q: Post 1q

Runoff = 0.28 cfs @ 12.00 hrs, Volume= 0.020 af, Depth> 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,363	98	Roofs, HSG A
2,205	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,040	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
4,608	85	Weighted Average
1,040	39	22.57% Pervious Area
3,568	98	77.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	55	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.4	75	Total			

Summary for Subcatchment Post 1r: Post 1r

Runoff = 0.46 cfs @ 12.01 hrs, Volume= 0.033 af, Depth> 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
520	98	Roofs, HSG A
5,480	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
804	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,804	91	Weighted Average
804	39	11.82% Pervious Area
6,000	98	88.18% Impervious Area

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 25

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.0	149	0.0150	2.49		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.1	169	Total			

Summary for Subcatchment Post 1s: Post 1s

Runoff = 0.18 cfs @ 12.01 hrs, Volume= 0.012 af, Depth> 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,915	98	Roofs, HSG A
344	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
10,106	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,365	50	Weighted Average
10,106	39	81.73% Pervious Area
2,259	98	18.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	40	0.4000	3.74		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	78	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	118	Total			

Summary for Subcatchment Post 1t: Post 1t

Runoff = 1.51 cfs @ 12.02 hrs, Volume= 0.110 af, Depth> 2.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 26

Area (sf)	CN	Description
5,398	98	Roofs, HSG A
14,627	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,988	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
24,013	88	Weighted Average
3,988	39	16.61% Pervious Area
20,025	98	83.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.2	284	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.5	304	Total			

Summary for Subcatchment Post 1u: Post 1u

Runoff = 1.63 cfs @ 12.03 hrs, Volume= 0.120 af, Depth> 2.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
8,747	98	Roofs, HSG A
13,050	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
5,305	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
27,102	86	Weighted Average
5,305	39	19.57% Pervious Area
21,797	98	80.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.1	30	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	308	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.0	358	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 27

Summary for Subcatchment Post 1v: Post 1v

Runoff = 0.78 cfs @ 12.01 hrs, Volume= 0.055 af, Depth> 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
3,517	98	Roofs, HSG A
6,504	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
820	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
10,841	94	Weighted Average
820	39	7.56% Pervious Area
10,021	98	92.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	30	0.4000	3.53		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.1	30	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	184	0.0600	4.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	244	Total			

Summary for Subcatchment Post 1w: Post 1w

Runoff = 0.80 cfs @ 12.01 hrs, Volume= 0.057 af, Depth> 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
3,296	98	Roofs, HSG A
7,074	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,699	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,069	90	Weighted Average
1,699	39	14.08% Pervious Area
10,370	98	85.92% Impervious Area

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 28

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	230	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	250	Total			

Summary for Subcatchment Post 1x: Post 1x

Runoff = 0.21 cfs @ 12.09 hrs, Volume= 0.017 af, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,116	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
8,382	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
16,515	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
28,013	45	Weighted Average
24,897	38	88.88% Pervious Area
3,116	98	11.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	60	0.2500	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	221	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.9	281	Total			

Summary for Subcatchment Post 1y: Post 1y

Runoff = 0.41 cfs @ 12.01 hrs, Volume= 0.029 af, Depth> 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 29

Area (sf)	CN	Description
1,040	98	Roofs, HSG A
4,234	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
62	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
5,336	97	Weighted Average
62	39	1.16% Pervious Area
5,274	98	98.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	249	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	269	Total			

Summary for Subcatchment Post 1z: Post 1z

Runoff = 0.61 cfs @ 12.01 hrs, Volume= 0.044 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
7,216	98	Roofs, HSG A
768	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
17,273	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
25,257	58	Weighted Average
17,273	39	68.39% Pervious Area
7,984	98	31.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.2	27	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.1	97	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 30

Summary for Subcatchment Post 2a: Post 2a

Runoff = 0.42 cfs @ 12.01 hrs, Volume= 0.029 af, Depth> 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,014	98	Roofs, HSG A
4,022	98	Paved parking, HSG A
339	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
173	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
5,548	96	Weighted Average
173	39	3.12% Pervious Area
5,375	98	96.88% Impervious Area
339		6.31% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0800	1.71		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.6	222	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	242	Total			

Summary for Subcatchment Post 2b: Post 2b

Runoff = 0.30 cfs @ 12.01 hrs, Volume= 0.022 af, Depth> 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,880	98	Paved parking, HSG A
55	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
0	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
3,935	98	Weighted Average
3,935	98	100.00% Impervious Area
55		1.40% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 31

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0800	1.71		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	239	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.9	259	Total			

Summary for Subcatchment Post 2c: Post 2c

Runoff = 1.29 cfs @ 12.02 hrs, Volume= 0.094 af, Depth> 2.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
5,680	98	Roofs, HSG A
11,517	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,382	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
20,579	88	Weighted Average
3,382	39	16.43% Pervious Area
17,197	98	83.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.2	208	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.5	228	Total			

Summary for Subcatchment Post 2d: Post 2d

Runoff = 1.18 cfs @ 12.02 hrs, Volume= 0.085 af, Depth> 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 32

Area (sf)	CN	Description
4,913	98	Roofs, HSG A
10,510	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,159	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
19,582	85	Weighted Average
4,159	39	21.24% Pervious Area
15,423	98	78.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0600	1.52		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.0	232	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.2	252	Total			

Summary for Subcatchment Post 2e: Post 2e

Runoff = 0.20 cfs @ 12.18 hrs, Volume= 0.020 af, Depth> 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,444	98	Roofs, HSG A
2,265	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,533	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
8,242	66	Weighted Average
4,533	39	55.00% Pervious Area
3,709	98	45.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	80	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.2	36	0.2500	3.50		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.1	300	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.6	416	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 33

Summary for Subcatchment Post 2f: Post 2f

Runoff = 0.60 cfs @ 12.04 hrs, Volume= 0.044 af, Depth> 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Adj	Description
6,321	98	98	Roofs, HSG A
27	98	98	Paved parking, HSG A
1,685	98	98	Unconnected pavement, HSG A
47,632	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
31,396	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
87,061	43	42	Weighted Average, UI Adjusted
79,028	37	37	90.77% Pervious Area
8,033	98	98	9.23% Impervious Area
1,685			20.98% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	32	0.0200	1.08		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	59	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.9	165	0.4000	3.16		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.3	256	Total			

Summary for Subcatchment Post 2g: Post 2g

Runoff = 0.12 cfs @ 12.04 hrs, Volume= 0.009 af, Depth> 0.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,182	98	Roofs, HSG A
357	98	Paved parking, HSG A
121	98	Unconnected pavement, HSG A
13,159	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
11,547	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
26,366	41	Weighted Average
24,706	37	93.70% Pervious Area
1,660	98	6.30% Impervious Area
121		7.29% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 34

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	41	0.0800	1.97		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.2	255	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.5	296	Total			

Summary for Subcatchment Post 2h: Post 2h

Runoff = 0.36 cfs @ 12.01 hrs, Volume= 0.026 af, Depth> 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
1,807	98	Roofs, HSG A
2,854	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,902	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,563	81	Weighted Average
1,902	39	28.98% Pervious Area
4,661	98	71.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0600	1.83		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	67	0.0600	3.94		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.8	117	Total			

Summary for Subcatchment Post 2i: Post 2i

Runoff = 0.75 cfs @ 12.12 hrs, Volume= 0.067 af, Depth> 0.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 35

Area (sf)	CN	Description
11,373	98	Roofs, HSG A
877	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
40,393	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
52,643	53	Weighted Average
40,393	39	76.73% Pervious Area
12,250	98	23.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.4000	0.25		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.1	28	0.4000	4.43		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.5	296	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	424	Total			

Summary for Subcatchment Post 2j: Post 2j

Runoff = 0.04 cfs @ 12.03 hrs, Volume= 0.003 af, Depth> 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
459	98	Roofs, HSG A
90	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
4,518	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
7,047	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,114	41	Weighted Average
11,565	38	95.47% Pervious Area
549	98	4.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	20	0.3300	0.26		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
0.5	131	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.8	151	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 36

Summary for Subcatchment Post 2k: Post 2k

Runoff = 0.27 cfs @ 12.05 hrs, Volume= 0.020 af, Depth> 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
3,713	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
8,633	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,346	57	Weighted Average
8,633	39	69.93% Pervious Area
3,713	98	30.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
3.5	207	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.6	227	Total			

Summary for Subcatchment Post 3a: Post 3a

Runoff = 0.54 cfs @ 12.05 hrs, Volume= 0.039 af, Depth> 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
0	98	Roofs, HSG A
0	98	Paved parking, HSG A
7,192	98	Unconnected pavement, HSG A
769	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
13,267	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
21,228	59	Weighted Average
14,036	39	66.12% Pervious Area
7,192	98	33.88% Impervious Area
7,192		100.00% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 37

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0500	1.42		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.7	725	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	745	Total			

Summary for Subcatchment Post 3b: Post 3b

Runoff = 2.97 cfs @ 12.14 hrs, Volume= 0.272 af, Depth> 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
16,932	98	Roofs, HSG A
4,544	98	Paved parking, HSG A
3,956	98	Unconnected pavement, HSG A
185,603	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
110,357	39	>75% Grass cover, Good, HSG A
24,197	98	Water Surface, HSG A
345,589	46	Weighted Average
295,960	37	85.64% Pervious Area
49,629	98	14.36% Impervious Area
3,956		7.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	20	0.3300	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
1.7	165	0.1000	1.58		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	416	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
9.9	601	Total			

Summary for Subcatchment Post 3c: Post 3c

Runoff = 0.26 cfs @ 12.03 hrs, Volume= 0.019 af, Depth> 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.10"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 38

Area (sf)	CN	Description
1,640	98	Roofs, HSG A
1,797	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
886	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,487	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
8,810	62	Weighted Average
5,373	39	60.99% Pervious Area
3,437	98	39.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0400	1.40		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.7	102	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.1	132	Total			

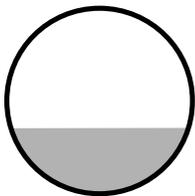
Summary for Reach 18" Pipe: 18" Pipe

Inflow Area = 3.664 ac, 37.96% Impervious, Inflow Depth > 1.21" for 2-Year event
 Inflow = 2.82 cfs @ 12.29 hrs, Volume= 0.370 af
 Outflow = 2.82 cfs @ 12.30 hrs, Volume= 0.370 af, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 5.04 fps, Min. Travel Time= 0.4 min
 Avg. Velocity = 1.97 fps, Avg. Travel Time= 1.0 min

Peak Storage= 67 cf @ 12.30 hrs
 Average Depth at Peak Storage= 0.53'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.50 cfs

18.0" Round Pipe
 n= 0.013
 Length= 120.0' Slope= 0.0100 '/'
 Inlet Invert= 48.91', Outlet Invert= 47.71'



12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 39

Summary for Reach Phase 1 Post: Phase 1 Post

Inflow Area = 17.032 ac, 39.73% Impervious, Inflow Depth > 0.01" for 2-Year event
Inflow = 0.26 cfs @ 12.03 hrs, Volume= 0.019 af
Outflow = 0.26 cfs @ 12.03 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Phase 2 Post: Phase 2 Post

Inflow Area = 14.274 ac, 21.44% Impervious, Inflow Depth > 0.26" for 2-Year event
Inflow = 3.30 cfs @ 12.12 hrs, Volume= 0.311 af
Outflow = 3.30 cfs @ 12.12 hrs, Volume= 0.311 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Pond Post: Pond Post

Inflow Area = 31.306 ac, 31.39% Impervious, Inflow Depth > 0.13" for 2-Year event
Inflow = 3.45 cfs @ 12.12 hrs, Volume= 0.330 af
Outflow = 3.45 cfs @ 12.12 hrs, Volume= 0.330 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Swale to Pond 2-2: Swale to Pond 2-2

Inflow Area = 0.756 ac, 19.20% Impervious, Inflow Depth > 0.55" for 2-Year event
Inflow = 0.48 cfs @ 12.02 hrs, Volume= 0.035 af
Outflow = 0.46 cfs @ 12.04 hrs, Volume= 0.035 af, Atten= 3%, Lag= 1.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Max. Velocity= 1.97 fps, Min. Travel Time= 1.4 min
Avg. Velocity = 0.64 fps, Avg. Travel Time= 4.3 min

Peak Storage= 39 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 1.00' Flow Area= 6.7 sf, Capacity= 57.26 cfs

10.00' x 1.00' deep Parabolic Channel, n= 0.035 High grass
Length= 165.0' Slope= 0.0727 '
Inlet Invert= 50.00', Outlet Invert= 38.00'



12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 40

Summary for Pond CB 1-6: CB 1-6

Inflow Area = 3.868 ac, 37.14% Impervious, Inflow Depth > 1.18" for 2-Year event
 Inflow = 2.87 cfs @ 12.30 hrs, Volume= 0.381 af
 Outflow = 2.87 cfs @ 12.30 hrs, Volume= 0.381 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.87 cfs @ 12.30 hrs, Volume= 0.381 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 40.91' @ 12.30 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	40.00'	18.0" Round 18" Culvert L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.00' / 39.70' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.86 cfs @ 12.30 hrs HW=40.91' TW=38.96' (Dynamic Tailwater)
 ↑1=18" Culvert (Barrel Controls 2.86 cfs @ 3.67 fps)

Summary for Pond DMH P 1-2: DMH 1-2

Inflow Area = 0.435 ac, 74.23% Impervious, Inflow Depth > 2.13" for 2-Year event
 Inflow = 1.08 cfs @ 12.01 hrs, Volume= 0.077 af
 Outflow = 1.08 cfs @ 12.01 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.08 cfs @ 12.01 hrs, Volume= 0.077 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 45.64' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round 12" Culvert L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 42.50' S= 0.0433 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.04 cfs @ 12.01 hrs HW=45.63' TW=43.13' (Dynamic Tailwater)
 ↑1=12" Culvert (Inlet Controls 1.04 cfs @ 2.47 fps)

Summary for Pond DMH P 1-7: DMH P1-7

Inflow Area = 14.636 ac, 36.58% Impervious, Inflow Depth > 0.12" for 2-Year event
 Inflow = 2.06 cfs @ 12.02 hrs, Volume= 0.149 af
 Outflow = 2.06 cfs @ 12.02 hrs, Volume= 0.149 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.06 cfs @ 12.02 hrs, Volume= 0.149 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 34.95' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.32'	24.0" Round Culvert L= 84.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 41

Inlet / Outlet Invert= 34.32' / 33.75' S= 0.0068 '/' Cc= 0.900
 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=1.97 cfs @ 12.02 hrs HW=34.93' TW=33.25' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 1.97 cfs @ 3.64 fps)

Summary for Pond DMH P1-1: DMH 1-1

Inflow Area = 0.250 ac, 96.51% Impervious, Inflow Depth > 2.77" for 2-Year event
 Inflow = 0.80 cfs @ 12.01 hrs, Volume= 0.058 af
 Outflow = 0.80 cfs @ 12.01 hrs, Volume= 0.058 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.80 cfs @ 12.01 hrs, Volume= 0.058 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 58.81' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	58.35'	12.0" Round 12" Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.35' / 57.50' S= 0.0283 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.77 cfs @ 12.01 hrs HW=58.80' TW=36.14' (Dynamic Tailwater)

↑1=12" Culvert (Inlet Controls 0.77 cfs @ 2.27 fps)

Summary for Pond DMH P1-10: DMH P1-10

Inflow Area = 1.292 ac, 51.16% Impervious, Inflow Depth > 1.47" for 2-Year event
 Inflow = 2.13 cfs @ 12.01 hrs, Volume= 0.158 af
 Outflow = 2.13 cfs @ 12.01 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.13 cfs @ 12.01 hrs, Volume= 0.158 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 41.42' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	40.70'	15.0" Round Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.70' / 38.00' S= 0.0245 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.04 cfs @ 12.01 hrs HW=41.41' TW=38.61' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 2.04 cfs @ 2.86 fps)

Summary for Pond DMH P1-11: DMH P1-11

Inflow Area = 1.292 ac, 51.16% Impervious, Inflow Depth > 1.47" for 2-Year event
 Inflow = 2.13 cfs @ 12.01 hrs, Volume= 0.158 af
 Outflow = 2.13 cfs @ 12.01 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.13 cfs @ 12.01 hrs, Volume= 0.158 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 42

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 43.72' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.90'	12.0" Round Culvert L= 52.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.90' / 40.80' S= 0.0404 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.05 cfs @ 12.01 hrs HW=43.70' TW=41.41' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 2.05 cfs @ 3.04 fps)

Summary for Pond DMH P1-12: DMH P1-12

Inflow Area =	0.766 ac, 25.16% Impervious, Inflow Depth > 0.72" for 2-Year event
Inflow =	0.56 cfs @ 12.03 hrs, Volume= 0.046 af
Outflow =	0.56 cfs @ 12.03 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min
Primary =	0.56 cfs @ 12.03 hrs, Volume= 0.046 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 55.38' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	55.00'	12.0" Round Culvert L= 225.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 55.00' / 43.00' S= 0.0533 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.55 cfs @ 12.03 hrs HW=55.37' TW=43.68' (Dynamic Tailwater)

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

Summary for Pond DMH P1-13: DMH P1-13

Inflow Area =	3.868 ac, 37.14% Impervious, Inflow Depth > 1.18" for 2-Year event
Inflow =	2.87 cfs @ 12.30 hrs, Volume= 0.381 af
Outflow =	2.87 cfs @ 12.30 hrs, Volume= 0.381 af, Atten= 0%, Lag= 0.0 min
Primary =	2.87 cfs @ 12.30 hrs, Volume= 0.381 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 38.96' @ 12.30 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.10'	18.0" Round Culvert L= 130.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.10' / 37.40' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.86 cfs @ 12.30 hrs HW=38.96' TW=37.43' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 2.86 cfs @ 3.93 fps)

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 43

Summary for Pond DMH P1-3: DMH P1-3

Inflow Area = 2.355 ac, 36.03% Impervious, Inflow Depth > 1.03" for 2-Year event
Inflow = 2.40 cfs @ 12.05 hrs, Volume= 0.203 af
Outflow = 2.40 cfs @ 12.05 hrs, Volume= 0.203 af, Atten= 0%, Lag= 0.0 min
Primary = 2.40 cfs @ 12.05 hrs, Volume= 0.203 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 43.18' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.40'	15.0" Round Culvert L= 142.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.40' / 36.60' S= 0.0408 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.40 cfs @ 12.05 hrs HW=43.18' TW=37.45' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 2.40 cfs @ 3.00 fps)

Summary for Pond DMH P1-4: DMH P1-4

Inflow Area = 8.538 ac, 35.38% Impervious, Inflow Depth > 0.38" for 2-Year event
Inflow = 3.22 cfs @ 12.06 hrs, Volume= 0.270 af
Outflow = 3.22 cfs @ 12.06 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min
Primary = 3.22 cfs @ 12.06 hrs, Volume= 0.270 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.82' @ 12.86 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	18.0" Round Culvert L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.00' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.89 cfs @ 12.06 hrs HW=37.45' TW=36.85' (Dynamic Tailwater)
↑1=Culvert (Outlet Controls 2.89 cfs @ 3.51 fps)

Summary for Pond DMH P1-5: DMH P1-5

Inflow Area = 0.713 ac, 59.08% Impervious, Inflow Depth > 1.69" for 2-Year event
Inflow = 1.37 cfs @ 12.02 hrs, Volume= 0.101 af
Outflow = 1.37 cfs @ 12.02 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.37 cfs @ 12.02 hrs, Volume= 0.101 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.13' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.35'	12.0" Round 12" Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 44

Inlet / Outlet Invert= 35.35' / 35.10' S= 0.0050 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.16 cfs @ 12.02 hrs HW=36.09' TW=35.80' (Dynamic Tailwater)

↑1=12" Culvert (Outlet Controls 1.16 cfs @ 2.61 fps)

Summary for Pond DMH P1-6: DMH P1-6

Inflow Area = 0.864 ac, 62.91% Impervious, Inflow Depth > 1.80" for 2-Year event
Inflow = 1.78 cfs @ 12.02 hrs, Volume= 0.130 af
Outflow = 1.78 cfs @ 12.02 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min
Primary = 1.78 cfs @ 12.02 hrs, Volume= 0.130 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 35.83' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	12.0" Round 12" Culvert L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 34.42' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.70 cfs @ 12.02 hrs HW=35.80' TW=34.93' (Dynamic Tailwater)

↑1=12" Culvert (Barrel Controls 1.70 cfs @ 3.46 fps)

Summary for Pond DMH P1-8: DMH P 1-8

Inflow Area = 1.173 ac, 81.82% Impervious, Inflow Depth > 2.35" for 2-Year event
Inflow = 3.12 cfs @ 12.03 hrs, Volume= 0.229 af
Outflow = 3.12 cfs @ 12.03 hrs, Volume= 0.229 af, Atten= 0%, Lag= 0.0 min
Primary = 3.12 cfs @ 12.03 hrs, Volume= 0.229 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.69' @ 12.52 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.35'	15.0" Round 15" Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.35' / 34.80' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.26 cfs @ 12.03 hrs HW=36.48' TW=36.15' (Dynamic Tailwater)

↑1=15" Culvert (Outlet Controls 2.26 cfs @ 2.55 fps)

Summary for Pond DMH P1-9: DMH P1-9

Inflow Area = 1.173 ac, 81.82% Impervious, Inflow Depth > 2.35" for 2-Year event
Inflow = 3.12 cfs @ 12.03 hrs, Volume= 0.229 af
Outflow = 3.12 cfs @ 12.03 hrs, Volume= 0.229 af, Atten= 0%, Lag= 0.0 min
Primary = 3.12 cfs @ 12.03 hrs, Volume= 0.229 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 45

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.69' @ 12.49 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	15.0" Round Culvert L= 144.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.70' / 34.00' S= 0.0049 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.57 cfs @ 12.03 hrs HW=36.15' TW=36.04' (Dynamic Tailwater)
↑1=Culvert (Outlet Controls 1.57 cfs @ 1.38 fps)

Summary for Pond DMH P2-1: DMH P2-1

Inflow Area = 0.496 ac, 45.65% Impervious, Inflow Depth > 1.31" for 2-Year event
Inflow = 0.76 cfs @ 12.01 hrs, Volume= 0.054 af
Outflow = 0.76 cfs @ 12.01 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.76 cfs @ 12.01 hrs, Volume= 0.054 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 47.93' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	47.45'	12.0" Round 12" Culvert L= 70.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 47.45' / 44.00' S= 0.0493 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.73 cfs @ 12.01 hrs HW=47.91' TW=38.24' (Dynamic Tailwater)
↑1=12" Culvert (Inlet Controls 0.73 cfs @ 2.05 fps)

Summary for Pond DMH P2-2: DMH P2-2

Inflow Area = 2.921 ac, 24.27% Impervious, Inflow Depth > 0.43" for 2-Year event
Inflow = 1.29 cfs @ 12.02 hrs, Volume= 0.105 af
Outflow = 1.29 cfs @ 12.02 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min
Primary = 1.29 cfs @ 12.02 hrs, Volume= 0.105 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 48.27' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	47.60'	12.0" Round 12" Culvert L= 64.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.60' / 47.25' S= 0.0055 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.23 cfs @ 12.02 hrs HW=48.26' TW=46.11' (Dynamic Tailwater)
↑1=12" Culvert (Barrel Controls 1.23 cfs @ 3.20 fps)

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 46

Summary for Pond DMH P2-3: DMH P2-3

Inflow Area = 3.393 ac, 32.52% Impervious, Inflow Depth > 0.70" for 2-Year event
Inflow = 2.58 cfs @ 12.02 hrs, Volume= 0.199 af
Outflow = 2.58 cfs @ 12.02 hrs, Volume= 0.199 af, Atten= 0%, Lag= 0.0 min
Primary = 2.58 cfs @ 12.02 hrs, Volume= 0.199 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 46.14' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.19'	12.0" Round 12" Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.19' / 42.00' S= 0.0290 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.47 cfs @ 12.02 hrs HW=46.11' TW=38.26' (Dynamic Tailwater)
↑**1=12" Culvert** (Inlet Controls 2.47 cfs @ 3.27 fps)

Summary for Pond DMH P2-4: DMH P2-4

Inflow Area = 0.756 ac, 19.20% Impervious, Inflow Depth > 0.55" for 2-Year event
Inflow = 0.48 cfs @ 12.02 hrs, Volume= 0.035 af
Outflow = 0.48 cfs @ 12.02 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.48 cfs @ 12.02 hrs, Volume= 0.035 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 53.54' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	53.20'	12.0" Round 12" Culvert L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.20' / 51.20' S= 0.0200 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.46 cfs @ 12.02 hrs HW=53.54' TW=50.10' (Dynamic Tailwater)
↑**1=12" Culvert** (Inlet Controls 0.46 cfs @ 1.97 fps)

Summary for Pond DMH P2-5: DMH P2-5

Inflow Area = 5.854 ac, 30.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.00' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.00'	12.0" Round 12" Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 47

Inlet / Outlet Invert= 36.00' / 35.60' S= 0.0100 '/ Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=0.00' (Dynamic Tailwater)

↑1=12" Culvert (Controls 0.00 cfs)

Summary for Pond DW 1-4: DW P1-4

Inflow Area = 13.667 ac, 34.60% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 35.50' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.50'	12.0" Round Culvert L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.50' / 34.42' S= 0.0093 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	38.25'	20.0' long x 2.0' 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.50' TW=34.32' (Dynamic Tailwater)

↑1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.50' TW=0.00' (Dynamic Tailwater)

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

Summary for Pond DW P1-2: DW P1-2

Inflow Area = 5.848 ac, 32.31% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.45' @ 14.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	15.0" Round 12" Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.50' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 48

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.70' TW=36.50' (Dynamic Tailwater)

↑1=12" Culvert (Controls 0.00 cfs)

Summary for Pond DW P2-3: DW P2-3

Inflow Area = 2.282 ac, 11.82% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.30' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	48.30'	12.0" Round 12" Culvert L= 120.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.30' / 47.70' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=48.30' TW=47.60' (Dynamic Tailwater)

↑1=12" Culvert (Controls 0.00 cfs)

Summary for Pond Pond 1-1: Pond 1-1

Inflow Area = 5.848 ac, 32.31% Impervious, Inflow Depth > 0.22" for 2-Year event
 Inflow = 1.29 cfs @ 12.03 hrs, Volume= 0.108 af
 Outflow = 0.44 cfs @ 12.52 hrs, Volume= 0.109 af, Atten= 66%, Lag= 29.8 min
 Discarded = 0.44 cfs @ 12.52 hrs, Volume= 0.109 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 36.45' @ 12.52 hrs Surf.Area= 2,276 sf Storage= 934 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 10.7 min (762.9 - 752.2)

Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	10,322 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	1,891	0	0
38.00	3,608	5,499	5,499
39.00	6,038	4,823	10,322

Device	Routing	Invert	Outlet Devices
#1	Discarded	36.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	38.50'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 49

Discarded OutFlow Max=0.44 cfs @ 12.52 hrs HW=36.45' (Free Discharge)

↳1=Exfiltration (Exfiltration Controls 0.44 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=36.70' (Dynamic Tailwater)

↳2=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond Pond 1-2: Pond 1-2

Inflow Area = 13.667 ac, 34.60% Impervious, Inflow Depth > 0.63" for 2-Year event
 Inflow = 5.66 cfs @ 12.06 hrs, Volume= 0.716 af
 Outflow = 1.33 cfs @ 12.82 hrs, Volume= 0.716 af, Atten= 76%, Lag= 45.3 min
 Discarded = 1.33 cfs @ 12.82 hrs, Volume= 0.716 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 37.82' @ 12.82 hrs Surf.Area= 6,949 sf Storage= 9,207 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 52.3 min (825.9 - 773.6)

Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	16,448 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	3,158	0	0
38.00	7,320	10,478	10,478
38.75	8,599	5,970	16,448

Device	Routing	Invert	Outlet Devices
#1	Discarded	36.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	38.00'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	38.25'	20.0' long x 2.0' 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Discarded OutFlow Max=1.33 cfs @ 12.82 hrs HW=37.82' (Free Discharge)

↳1=Exfiltration (Exfiltration Controls 1.33 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=35.50' (Dynamic Tailwater)

↳2=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=0.00' (Dynamic Tailwater)

↳3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 50

Summary for Pond Pond 1-3: Pond 1-3

Inflow Area = 15.076 ac, 36.77% Impervious, Inflow Depth > 0.15" for 2-Year event
 Inflow = 2.69 cfs @ 12.02 hrs, Volume= 0.195 af
 Outflow = 0.67 cfs @ 12.35 hrs, Volume= 0.195 af, Atten= 75%, Lag= 20.3 min
 Discarded = 0.67 cfs @ 12.35 hrs, Volume= 0.195 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 33.47' @ 12.35 hrs Surf.Area= 3,484 sf Storage= 1,549 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 10.7 min (763.2 - 752.6)

Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	12,888 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,114	0	0
36.00	5,478	12,888	12,888

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	35.25'	10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.67 cfs @ 12.35 hrs HW=33.47' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.67 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.00' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond Pond 1-4: Pond 1-4

Inflow Area = 1.753 ac, 65.22% Impervious, Inflow Depth > 1.87" for 2-Year event
 Inflow = 3.71 cfs @ 12.03 hrs, Volume= 0.273 af
 Outflow = 0.60 cfs @ 12.47 hrs, Volume= 0.273 af, Atten= 84%, Lag= 26.6 min
 Discarded = 0.60 cfs @ 12.47 hrs, Volume= 0.273 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 36.68' @ 12.47 hrs Surf.Area= 3,137 sf Storage= 4,144 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 70.9 min (823.9 - 753.0)

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 52

Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88
2.85 3.07 3.20 3.32

Discarded OutFlow Max=0.89 cfs @ 12.36 hrs HW=39.08' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.89 cfs)

Primary OutFlow Max=0.54 cfs @ 12.36 hrs HW=39.08' TW=36.38' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Weir Controls 0.54 cfs @ 0.71 fps)

Summary for Pond Pond 2-1: Pond 2-1

Inflow Area = 2.282 ac, 11.82% Impervious, Inflow Depth > 0.34" for 2-Year event
 Inflow = 0.87 cfs @ 12.04 hrs, Volume= 0.064 af
 Outflow = 0.35 cfs @ 12.21 hrs, Volume= 0.065 af, Atten= 60%, Lag= 10.1 min
 Discarded = 0.35 cfs @ 12.21 hrs, Volume= 0.065 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.15' @ 12.21 hrs Surf.Area= 1,824 sf Storage= 269 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 3.2 min (757.1 - 753.9)

Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	9,380 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
50.00	1,727	0	0
52.00	3,014	4,741	4,741
53.00	6,264	4,639	9,380

Device	Routing	Invert	Outlet Devices
#1	Primary	51.50'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	50.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.35 cfs @ 12.21 hrs HW=50.15' (Free Discharge)

↑2=Exfiltration (Exfiltration Controls 0.35 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.00' TW=48.30' (Dynamic Tailwater)

↑1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond Pond 2-2: Pond 2-2

Inflow Area = 5.854 ac, 30.00% Impervious, Inflow Depth > 0.73" for 2-Year event
 Inflow = 4.22 cfs @ 12.03 hrs, Volume= 0.355 af
 Outflow = 1.13 cfs @ 12.42 hrs, Volume= 0.356 af, Atten= 73%, Lag= 23.4 min
 Discarded = 1.13 cfs @ 12.42 hrs, Volume= 0.356 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 53

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 38.56' @ 12.42 hrs Surf.Area= 5,900 sf Storage= 3,050 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 13.3 min (768.0 - 754.7)

Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	13,302 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	4,933	0	0
40.00	8,369	13,302	13,302

Device	Routing	Invert	Outlet Devices
#1	Primary	39.50'	10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	38.00'	8.270 in/hr Exfiltration over Surface area
#3	Primary	39.25'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=1.13 cfs @ 12.42 hrs HW=38.56' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 1.13 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=36.00' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
 ↳ **3=Orifice/Grate** (Controls 0.00 cfs)

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 54

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentOffsite DOT: Offsite DOT	Runoff Area=159,601 sf 37.96% Impervious Runoff Depth>2.11" Flow Length=1,589' Slope=0.0750 '/' Tc=21.8 min CN=71 Runoff=4.94 cfs 0.643 af
SubcatchmentPost 1a: Post 1a	Runoff Area=6,252 sf 95.59% Impervious Runoff Depth>4.18" Flow Length=239' Tc=1.0 min CN=95 Runoff=0.69 cfs 0.050 af
SubcatchmentPost 1b: Post 1b	Runoff Area=4,636 sf 97.76% Impervious Runoff Depth>4.27" Flow Length=290' Tc=1.3 min CN=97 Runoff=0.51 cfs 0.038 af
SubcatchmentPost 1c: Post 1c	Runoff Area=29,936 sf 42.27% Impervious Runoff Depth>1.90" Flow Length=239' Tc=1.3 min CN=63 Runoff=1.44 cfs 0.109 af
SubcatchmentPost 1d: Post 1d	Runoff Area=20,256 sf 10.24% Impervious Runoff Depth>0.53" Flow Length=200' Tc=18.1 min UI Adjusted CN=41 Runoff=0.15 cfs 0.020 af
SubcatchmentPost 1e: Post 1e	Runoff Area=23,349 sf 0.00% Impervious Runoff Depth>0.09" Flow Length=89' Tc=10.2 min CN=38 Runoff=0.01 cfs 0.004 af
SubcatchmentPost 1f: Post 1f	Runoff Area=82,367 sf 25.75% Impervious Runoff Depth>1.22" Flow Length=478' Tc=9.5 min CN=54 Runoff=1.92 cfs 0.192 af
SubcatchmentPost 1g: Post 1g	Runoff Area=15,897 sf 69.30% Impervious Runoff Depth>3.06" Flow Length=300' Tc=1.0 min CN=80 Runoff=1.27 cfs 0.093 af
SubcatchmentPost 1h: Post 1h	Runoff Area=83,632 sf 27.38% Impervious Runoff Depth>1.28" Flow Length=523' Tc=5.8 min UI Adjusted CN=51 Runoff=2.32 cfs 0.204 af
SubcatchmentPost 1i: Post 1i	Runoff Area=3,042 sf 100.00% Impervious Runoff Depth>4.36" Flow Length=266' Tc=1.0 min CN=98 Runoff=0.35 cfs 0.025 af
SubcatchmentPost 1j: Post 1j	Runoff Area=8,891 sf 22.49% Impervious Runoff Depth>1.08" Flow Length=124' Tc=0.9 min UI Adjusted CN=51 Runoff=0.23 cfs 0.018 af
SubcatchmentPost 1k: Post 1k	Runoff Area=31,689 sf 22.34% Impervious Runoff Depth>1.07" Flow Length=200' Tc=3.0 min CN=52 Runoff=0.79 cfs 0.065 af
SubcatchmentPost 1l: Post 1l	Runoff Area=14,607 sf 84.31% Impervious Runoff Depth>3.70" Flow Length=271' Tc=5.5 min CN=89 Runoff=1.25 cfs 0.103 af
SubcatchmentPost 1m: Post 1m	Runoff Area=54,912 sf 21.57% Impervious Runoff Depth>1.03" Flow Length=249' Tc=2.6 min UI Adjusted CN=50 Runoff=1.33 cfs 0.108 af
SubcatchmentPost 1n: Post 1n	Runoff Area=16,566 sf 42.96% Impervious Runoff Depth>1.95" Flow Length=236' Tc=1.2 min CN=64 Runoff=0.81 cfs 0.062 af
SubcatchmentPost 1o: Post 1o	Runoff Area=14,474 sf 77.53% Impervious Runoff Depth>3.41" Flow Length=191' Slope=0.0150 '/' Tc=1.8 min CN=85 Runoff=1.26 cfs 0.094 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 55

SubcatchmentPost 1p: Post 1p	Runoff Area=6,584 sf 80.95% Impervious Runoff Depth>3.56" Flow Length=127' Tc=0.7 min CN=87 Runoff=0.62 cfs 0.045 af
SubcatchmentPost 1q: Post 1q	Runoff Area=4,608 sf 77.43% Impervious Runoff Depth>3.41" Flow Length=75' Tc=0.4 min CN=85 Runoff=0.42 cfs 0.030 af
SubcatchmentPost 1r: Post 1r	Runoff Area=6,804 sf 88.18% Impervious Runoff Depth>3.86" Flow Length=169' Tc=1.1 min CN=91 Runoff=0.69 cfs 0.050 af
SubcatchmentPost 1s: Post 1s	Runoff Area=12,365 sf 18.27% Impervious Runoff Depth>0.90" Flow Length=118' Tc=0.5 min CN=50 Runoff=0.26 cfs 0.021 af
SubcatchmentPost 1t: Post 1t	Runoff Area=24,013 sf 83.39% Impervious Runoff Depth>3.66" Flow Length=304' Tc=1.5 min CN=88 Runoff=2.25 cfs 0.168 af
SubcatchmentPost 1u: Post 1u	Runoff Area=27,102 sf 80.43% Impervious Runoff Depth>3.53" Flow Length=358' Tc=2.0 min CN=86 Runoff=2.44 cfs 0.183 af
SubcatchmentPost 1v: Post 1v	Runoff Area=10,841 sf 92.44% Impervious Runoff Depth>4.04" Flow Length=244' Tc=0.8 min CN=94 Runoff=1.16 cfs 0.084 af
SubcatchmentPost 1w: Post 1w	Runoff Area=12,069 sf 85.92% Impervious Runoff Depth>3.77" Flow Length=250' Tc=1.0 min CN=90 Runoff=1.19 cfs 0.087 af
SubcatchmentPost 1x: Post 1x	Runoff Area=28,013 sf 11.12% Impervious Runoff Depth>0.58" Flow Length=281' Tc=5.9 min CN=45 Runoff=0.31 cfs 0.031 af
SubcatchmentPost 1y: Post 1y	Runoff Area=5,336 sf 98.84% Impervious Runoff Depth>4.31" Flow Length=269' Tc=1.0 min CN=97 Runoff=0.61 cfs 0.044 af
SubcatchmentPost 1z: Post 1z	Runoff Area=25,257 sf 31.61% Impervious Runoff Depth>1.47" Flow Length=97' Tc=1.1 min CN=58 Runoff=0.91 cfs 0.071 af
SubcatchmentPost 2a: Post 2a	Runoff Area=5,548 sf 96.88% Impervious Runoff Depth>4.23" Flow Length=242' Slope=0.0800 '/' Tc=0.8 min CN=96 Runoff=0.62 cfs 0.045 af
SubcatchmentPost 2b: Post 2b	Runoff Area=3,935 sf 100.00% Impervious Runoff Depth>4.36" Flow Length=259' Slope=0.0800 '/' Tc=0.9 min CN=98 Runoff=0.45 cfs 0.033 af
SubcatchmentPost 2c: Post 2c	Runoff Area=20,579 sf 83.57% Impervious Runoff Depth>3.67" Flow Length=228' Slope=0.0200 '/' Tc=1.5 min CN=88 Runoff=1.93 cfs 0.144 af
SubcatchmentPost 2d: Post 2d	Runoff Area=19,582 sf 78.76% Impervious Runoff Depth>3.46" Flow Length=252' Tc=1.2 min CN=85 Runoff=1.76 cfs 0.130 af
SubcatchmentPost 2e: Post 2e	Runoff Area=8,242 sf 45.00% Impervious Runoff Depth>2.03" Flow Length=416' Tc=13.6 min CN=66 Runoff=0.30 cfs 0.032 af
SubcatchmentPost 2f: Post 2f	Runoff Area=87,061 sf 9.23% Impervious Runoff Depth>0.48" Flow Length=256' Tc=2.3 min UI Adjusted CN=42 Runoff=0.90 cfs 0.080 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 56

Subcatchment Post 2g: Post 2g	Runoff Area=26,366 sf 6.30% Impervious Runoff Depth>0.36" Flow Length=296' Tc=2.5 min CN=41 Runoff=0.19 cfs 0.018 af
Subcatchment Post 2h: Post 2h	Runoff Area=6,563 sf 71.02% Impervious Runoff Depth>3.14" Flow Length=117' Slope=0.0600 '/' Tc=0.8 min CN=81 Runoff=0.54 cfs 0.039 af
Subcatchment Post 2i: Post 2i	Runoff Area=52,643 sf 23.27% Impervious Runoff Depth>1.11" Flow Length=424' Tc=9.2 min CN=53 Runoff=1.12 cfs 0.112 af
Subcatchment Post 2j: Post 2j	Runoff Area=12,114 sf 4.53% Impervious Runoff Depth>0.29" Flow Length=151' Slope=0.3300 '/' Tc=1.8 min CN=41 Runoff=0.06 cfs 0.007 af
Subcatchment Post 2k: Post 2k	Runoff Area=12,346 sf 30.07% Impervious Runoff Depth>1.40" Flow Length=227' Tc=3.6 min CN=57 Runoff=0.41 cfs 0.033 af
Subcatchment Post 3a: Post 3a	Runoff Area=21,228 sf 33.88% Impervious Runoff Depth>1.56" Flow Length=745' Slope=0.0500 '/' Tc=2.9 min CN=59 Runoff=0.80 cfs 0.063 af
Subcatchment Post 3b: Post 3b	Runoff Area=345,589 sf 14.36% Impervious Runoff Depth>0.70" Flow Length=601' Tc=9.9 min CN=46 Runoff=4.44 cfs 0.461 af
Subcatchment Post 3c: Post 3c	Runoff Area=8,810 sf 39.01% Impervious Runoff Depth>1.77" Flow Length=132' Tc=2.1 min CN=62 Runoff=0.39 cfs 0.030 af
Reach 18" Pipe: 18" Pipe	Avg. Flow Depth=0.72' Max Vel=5.85 fps Inflow=4.94 cfs 0.643 af 18.0" Round Pipe n=0.013 L=120.0' S=0.0100 '/' Capacity=10.50 cfs Outflow=4.94 cfs 0.643 af
Reach Phase 1 Post: Phase 1 Post	Inflow=1.52 cfs 0.075 af Outflow=1.52 cfs 0.075 af
Reach Phase 2 Post: Phase 2 Post	Inflow=4.93 cfs 0.524 af Outflow=4.93 cfs 0.524 af
Reach Pond Post: Pond Post	Inflow=5.95 cfs 0.599 af Outflow=5.95 cfs 0.599 af
Reach Swale to Pond 2-2: Swale to	Avg. Flow Depth=0.13' Max Vel=2.22 fps Inflow=0.71 cfs 0.057 af n=0.035 L=165.0' S=0.0727 '/' Capacity=57.26 cfs Outflow=0.69 cfs 0.057 af
Pond CB 1-6: CB 1-6	Peak Elev=41.28' Inflow=5.01 cfs 0.661 af 18.0" Round Culvert n=0.012 L=60.0' S=0.0050 '/' Outflow=5.01 cfs 0.661 af
Pond DMH P 1-2: DMH 1-2	Peak Elev=45.79' Inflow=1.62 cfs 0.119 af 12.0" Round Culvert n=0.012 L=60.0' S=0.0433 '/' Outflow=1.62 cfs 0.119 af
Pond DMH P 1-7: DMH P1-7	Peak Elev=35.22' Inflow=3.95 cfs 0.384 af 24.0" Round Culvert n=0.012 L=84.0' S=0.0068 '/' Outflow=3.95 cfs 0.384 af
Pond DMH P1-1: DMH 1-1	Peak Elev=58.92' Inflow=1.20 cfs 0.088 af 12.0" Round Culvert n=0.012 L=30.0' S=0.0283 '/' Outflow=1.20 cfs 0.088 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 57

Pond DMH P1-10: DMH P1-10Peak Elev=41.63' Inflow=3.19 cfs 0.246 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0245 '/ Outflow=3.19 cfs 0.246 af**Pond DMH P1-11: DMH P1-11**Peak Elev=44.10' Inflow=3.19 cfs 0.246 af
12.0" Round Culvert n=0.012 L=52.0' S=0.0404 '/ Outflow=3.19 cfs 0.246 af**Pond DMH P1-12: DMH P1-12**Peak Elev=55.47' Inflow=0.84 cfs 0.075 af
12.0" Round Culvert n=0.012 L=225.0' S=0.0533 '/ Outflow=0.84 cfs 0.075 af**Pond DMH P1-13: DMH P1-13**Peak Elev=39.31' Inflow=5.01 cfs 0.661 af
18.0" Round Culvert n=0.012 L=130.0' S=0.0054 '/ Outflow=5.01 cfs 0.661 af**Pond DMH P1-3: DMH P1-3**Peak Elev=43.40' Inflow=3.59 cfs 0.323 af
15.0" Round Culvert n=0.012 L=142.0' S=0.0408 '/ Outflow=3.59 cfs 0.323 af**Pond DMH P1-4: DMH P1-4**Peak Elev=38.33' Inflow=4.81 cfs 0.426 af
18.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/ Outflow=4.81 cfs 0.426 af**Pond DMH P1-5: DMH P1-5**Peak Elev=36.42' Inflow=2.05 cfs 0.156 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0050 '/ Outflow=2.05 cfs 0.156 af**Pond DMH P1-6: DMH P1-6**Peak Elev=36.12' Inflow=2.67 cfs 0.201 af
12.0" Round Culvert n=0.012 L=116.0' S=0.0050 '/ Outflow=2.67 cfs 0.201 af**Pond DMH P1-8: DMH P 1-8**Peak Elev=38.06' Inflow=4.67 cfs 0.351 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0050 '/ Outflow=4.67 cfs 0.351 af**Pond DMH P1-9: DMH P1-9**Peak Elev=37.52' Inflow=4.67 cfs 0.351 af
15.0" Round Culvert n=0.012 L=144.0' S=0.0049 '/ Outflow=4.67 cfs 0.351 af**Pond DMH P2-1: DMH P2-1**Peak Elev=48.05' Inflow=1.14 cfs 0.085 af
12.0" Round Culvert n=0.012 L=70.0' S=0.0493 '/ Outflow=1.14 cfs 0.085 af**Pond DMH P2-2: DMH P2-2**Peak Elev=48.47' Inflow=1.92 cfs 0.162 af
12.0" Round Culvert n=0.012 L=64.0' S=0.0055 '/ Outflow=1.92 cfs 0.162 af**Pond DMH P2-3: DMH P2-3**Peak Elev=46.72' Inflow=3.86 cfs 0.306 af
12.0" Round Culvert n=0.012 L=110.0' S=0.0290 '/ Outflow=3.86 cfs 0.306 af**Pond DMH P2-4: DMH P2-4**Peak Elev=53.63' Inflow=0.71 cfs 0.057 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0200 '/ Outflow=0.71 cfs 0.057 af**Pond DMH P2-5: DMH P2-5**Peak Elev=36.00' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0100 '/ Outflow=0.00 cfs 0.000 af**Pond DW 1-4: DW P1-4**Peak Elev=36.81' Inflow=3.41 cfs 0.153 af
Primary=3.41 cfs 0.153 af Secondary=0.00 cfs 0.000 af Outflow=3.41 cfs 0.153 af**Pond DW P1-2: DW P1-2**Peak Elev=37.71' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/ Outflow=0.00 cfs 0.000 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 58

Pond DW P2-3: DW P2-3 Peak Elev=48.32' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond Pond 1-1: Pond 1-1 Peak Elev=37.73' Storage=4,550 cf Inflow=3.75 cfs 0.240 af
Discarded=0.65 cfs 0.241 af Primary=0.00 cfs 0.000 af Outflow=0.65 cfs 0.241 af

Pond Pond 1-2: Pond 1-2 Peak Elev=38.31' Storage=12,841 cf Inflow=8.62 cfs 1.195 af
Discarded=1.50 cfs 1.030 af Primary=3.41 cfs 0.153 af Secondary=0.77 cfs 0.011 af Outflow=5.69 cfs 1.195 af

Pond Pond 1-3: Pond 1-3 Peak Elev=35.08' Storage=8,188 cf Inflow=4.15 cfs 0.456 af
Discarded=0.91 cfs 0.456 af Primary=0.00 cfs 0.000 af Outflow=0.91 cfs 0.456 af

Pond Pond 1-4: Pond 1-4 Peak Elev=37.14' Storage=5,788 cf Inflow=5.56 cfs 0.422 af
Discarded=0.78 cfs 0.389 af Primary=1.24 cfs 0.033 af Outflow=2.01 cfs 0.422 af

Pond Pond 1-5: Pond 1-5 Peak Elev=39.24' Storage=4,531 cf Inflow=5.83 cfs 0.571 af
Discarded=0.96 cfs 0.484 af Primary=2.93 cfs 0.088 af Outflow=3.88 cfs 0.571 af

Pond Pond 2-1: Pond 2-1 Peak Elev=50.36' Storage=670 cf Inflow=1.30 cfs 0.113 af
Discarded=0.38 cfs 0.113 af Primary=0.00 cfs 0.000 af Outflow=0.38 cfs 0.113 af

Pond Pond 2-2: Pond 2-2 Peak Elev=39.01' Storage=5,886 cf Inflow=6.32 cfs 0.560 af
Discarded=1.28 cfs 0.561 af Primary=0.00 cfs 0.000 af Outflow=1.28 cfs 0.561 af

Total Runoff Area = 31.306 ac Runoff Volume = 3.871 af Average Runoff Depth = 1.48"
68.61% Pervious = 21.479 ac 31.39% Impervious = 9.827 ac

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 59

Summary for Subcatchment Offsite DOT: Offsite DOT

Runoff = 4.94 cfs @ 12.30 hrs, Volume= 0.643 af, Depth> 2.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
35,109	48	Brush, Poor, HSG A
63,906	57	Woods/grass comb., Poor, HSG A
60,586	98	Paved parking & roofs
159,601	71	Weighted Average
99,015	54	62.04% Pervious Area
60,586	98	37.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	1,589	0.0750	1.21		Lag/CN Method, Offsite DOT

Summary for Subcatchment Post 1a: Post 1a

Runoff = 0.69 cfs @ 12.01 hrs, Volume= 0.050 af, Depth> 4.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
1,040	98	Roofs, HSG A
4,198	98	Paved parking, HSG A
738	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
276	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,252	95	Weighted Average
276	39	4.41% Pervious Area
5,976	98	95.59% Impervious Area
738		12.35% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.03		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.6	214	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	239	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 60

Summary for Subcatchment Post 1b: Post 1b

Runoff = 0.51 cfs @ 12.02 hrs, Volume= 0.038 af, Depth> 4.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,621	98	Paved parking, HSG A
911	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
104	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
4,636	97	Weighted Average
104	39	2.24% Pervious Area
4,532	98	97.76% Impervious Area
911		20.10% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.13		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	250	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	290	Total			

Summary for Subcatchment Post 1c: Post 1c

Runoff = 1.44 cfs @ 12.02 hrs, Volume= 0.109 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
2,478	98	Roofs, HSG A
7,246	98	Paved parking, HSG A
2,929	98	Unconnected pavement, HSG A
6,383	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
10,900	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
29,936	63	Weighted Average
17,283	38	57.73% Pervious Area
12,653	98	42.27% Impervious Area
2,929		23.15% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 61

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.4	58	0.2500	2.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	161	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	239	Total			

Summary for Subcatchment Post 1d: Post 1d

Runoff = 0.15 cfs @ 12.24 hrs, Volume= 0.020 af, Depth> 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Adj	Description
464	98	98	Roofs, HSG A
103	98	98	Paved parking, HSG A
1,507	98	98	Unconnected pavement, HSG A
9,452	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
8,730	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
20,256	44	41	Weighted Average, UI Adjusted
18,182	37	37	89.76% Pervious Area
2,074	98	98	10.24% Impervious Area
1,507			72.66% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0400	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	30	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	70	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.1	200	Total			

Summary for Subcatchment Post 1e: Post 1e

Runoff = 0.01 cfs @ 15.02 hrs, Volume= 0.004 af, Depth> 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 62

Area (sf)	CN	Description
0	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
11,230	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
12,119	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
23,349	38	Weighted Average
23,349	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	66	0.0600	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.1	23	0.3000	3.83		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	89	Total			

Summary for Subcatchment Post 1f: Post 1f

Runoff = 1.92 cfs @ 12.13 hrs, Volume= 0.192 af, Depth> 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
20,047	98	Roofs, HSG A
1,165	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
61,155	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
82,367	54	Weighted Average
61,155	39	74.25% Pervious Area
21,212	98	25.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	85	0.3300	0.34		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
5.4	393	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	478	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 63

Summary for Subcatchment Post 1g: Post 1g

Runoff = 1.27 cfs @ 12.01 hrs, Volume= 0.093 af, Depth> 3.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
3,873	98	Roofs, HSG A
7,143	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,881	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
15,897	80	Weighted Average
4,881	39	30.70% Pervious Area
11,016	98	69.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	50	0.2500	3.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	250	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	300	Total			

Summary for Subcatchment Post 1h: Post 1h

Runoff = 2.32 cfs @ 12.08 hrs, Volume= 0.204 af, Depth> 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Adj	Description
10,621	98	98	Roofs, HSG A
853	98	98	Paved parking, HSG A
11,421	98	98	Unconnected pavement, HSG A
12,848	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
47,889	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
83,632	55	51	Weighted Average, UI Adjusted
60,737	38	38	72.62% Pervious Area
22,895	98	98	27.38% Impervious Area
11,421			49.88% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 64

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0400	1.29		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.2	60	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	443	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	523	Total			

Summary for Subcatchment Post 1i: Post 1i

Runoff = 0.35 cfs @ 12.01 hrs, Volume= 0.025 af, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,042	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
0	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
3,042	98	Weighted Average
3,042	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	246	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	266	Total			

Summary for Subcatchment Post 1j: Post 1j

Runoff = 0.23 cfs @ 12.01 hrs, Volume= 0.018 af, Depth> 1.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 65

Area (sf)	CN	Adj	Description
1,317	98	98	Roofs, HSG A
308	98	98	Paved parking, HSG A
375	98	98	Unconnected pavement, HSG A
243	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
6,648	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
8,891	52	51	Weighted Average, UI Adjusted
6,891	39	39	77.51% Pervious Area
2,000	98	98	22.49% Impervious Area
375			18.75% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.85		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.5	90	0.2000	3.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	24	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.9	124	Total			

Summary for Subcatchment Post 1k: Post 1k

Runoff = 0.79 cfs @ 12.05 hrs, Volume= 0.065 af, Depth> 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
7,078	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
24,611	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
31,689	52	Weighted Average
24,611	39	77.66% Pervious Area
7,078	98	22.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	35	0.4000	3.64		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.8	165	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	200	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 66

Summary for Subcatchment Post 1l: Post 1l

Runoff = 1.25 cfs @ 12.08 hrs, Volume= 0.103 af, Depth> 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
4,807	98	Roofs, HSG A
7,508	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
2,292	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
14,607	89	Weighted Average
2,292	39	15.69% Pervious Area
12,315	98	84.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	60	0.0500	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.9	211	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.5	271	Total			

Summary for Subcatchment Post 1m: Post 1m

Runoff = 1.33 cfs @ 12.04 hrs, Volume= 0.108 af, Depth> 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Adj	Description
8,658	98	98	Roofs, HSG A
256	98	98	Paved parking, HSG A
2,928	98	98	Unconnected pavement, HSG A
11,179	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
31,891	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
54,912	51	50	Weighted Average, UI Adjusted
43,070	38	38	78.43% Pervious Area
11,842	98	98	21.57% Impervious Area
2,928			24.73% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 67

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.85		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.9	130	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	109	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.6	249	Total			

Summary for Subcatchment Post 1n: Post 1n

Runoff = 0.81 cfs @ 12.02 hrs, Volume= 0.062 af, Depth> 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
3,763	98	Roofs, HSG A
3,354	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
9,449	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
16,566	64	Weighted Average
9,449	39	57.04% Pervious Area
7,117	98	42.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	216	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.2	236	Total			

Summary for Subcatchment Post 1o: Post 1o

Runoff = 1.26 cfs @ 12.03 hrs, Volume= 0.094 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 68

Area (sf)	CN	Description
3,247	98	Roofs, HSG A
7,974	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,253	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
14,474	85	Weighted Average
3,253	39	22.47% Pervious Area
11,221	98	77.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	60	0.0150	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	131	0.0150	2.49		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	191	Total			

Summary for Subcatchment Post 1p: Post 1p

Runoff = 0.62 cfs @ 12.01 hrs, Volume= 0.045 af, Depth> 3.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
1,438	98	Roofs, HSG A
3,892	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,254	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,584	87	Weighted Average
1,254	39	19.05% Pervious Area
5,330	98	80.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.4	107	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.7	127	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 69

Summary for Subcatchment Post 1q: Post 1q

Runoff = 0.42 cfs @ 12.00 hrs, Volume= 0.030 af, Depth> 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
1,363	98	Roofs, HSG A
2,205	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,040	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
4,608	85	Weighted Average
1,040	39	22.57% Pervious Area
3,568	98	77.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	55	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.4	75	Total			

Summary for Subcatchment Post 1r: Post 1r

Runoff = 0.69 cfs @ 12.01 hrs, Volume= 0.050 af, Depth> 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
520	98	Roofs, HSG A
5,480	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
804	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,804	91	Weighted Average
804	39	11.82% Pervious Area
6,000	98	88.18% Impervious Area

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 70

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.0	149	0.0150	2.49		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.1	169	Total			

Summary for Subcatchment Post 1s: Post 1s

Runoff = 0.26 cfs @ 12.01 hrs, Volume= 0.021 af, Depth> 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
1,915	98	Roofs, HSG A
344	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
10,106	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,365	50	Weighted Average
10,106	39	81.73% Pervious Area
2,259	98	18.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	40	0.4000	3.74		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	78	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	118	Total			

Summary for Subcatchment Post 1t: Post 1t

Runoff = 2.25 cfs @ 12.02 hrs, Volume= 0.168 af, Depth> 3.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 71

Area (sf)	CN	Description
5,398	98	Roofs, HSG A
14,627	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,988	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
24,013	88	Weighted Average
3,988	39	16.61% Pervious Area
20,025	98	83.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.2	284	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.5	304	Total			

Summary for Subcatchment Post 1u: Post 1u

Runoff = 2.44 cfs @ 12.03 hrs, Volume= 0.183 af, Depth> 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
8,747	98	Roofs, HSG A
13,050	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
5,305	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
27,102	86	Weighted Average
5,305	39	19.57% Pervious Area
21,797	98	80.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.1	30	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	308	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.0	358	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 72

Summary for Subcatchment Post 1v: Post 1v

Runoff = 1.16 cfs @ 12.01 hrs, Volume= 0.084 af, Depth> 4.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
3,517	98	Roofs, HSG A
6,504	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
820	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
10,841	94	Weighted Average
820	39	7.56% Pervious Area
10,021	98	92.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	30	0.4000	3.53		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.1	30	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	184	0.0600	4.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	244	Total			

Summary for Subcatchment Post 1w: Post 1w

Runoff = 1.19 cfs @ 12.01 hrs, Volume= 0.087 af, Depth> 3.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
3,296	98	Roofs, HSG A
7,074	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,699	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,069	90	Weighted Average
1,699	39	14.08% Pervious Area
10,370	98	85.92% Impervious Area

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 73

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	230	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	250	Total			

Summary for Subcatchment Post 1x: Post 1x

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.031 af, Depth> 0.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,116	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
8,382	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
16,515	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
28,013	45	Weighted Average
24,897	38	88.88% Pervious Area
3,116	98	11.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	60	0.2500	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	221	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.9	281	Total			

Summary for Subcatchment Post 1y: Post 1y

Runoff = 0.61 cfs @ 12.01 hrs, Volume= 0.044 af, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 74

Area (sf)	CN	Description
1,040	98	Roofs, HSG A
4,234	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
62	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
5,336	97	Weighted Average
62	39	1.16% Pervious Area
5,274	98	98.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	249	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	269	Total			

Summary for Subcatchment Post 1z: Post 1z

Runoff = 0.91 cfs @ 12.01 hrs, Volume= 0.071 af, Depth> 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
7,216	98	Roofs, HSG A
768	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
17,273	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
25,257	58	Weighted Average
17,273	39	68.39% Pervious Area
7,984	98	31.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.2	27	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.1	97	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 75

Summary for Subcatchment Post 2a: Post 2a

Runoff = 0.62 cfs @ 12.01 hrs, Volume= 0.045 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
1,014	98	Roofs, HSG A
4,022	98	Paved parking, HSG A
339	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
173	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
5,548	96	Weighted Average
173	39	3.12% Pervious Area
5,375	98	96.88% Impervious Area
339		6.31% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0800	1.71		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.6	222	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	242	Total			

Summary for Subcatchment Post 2b: Post 2b

Runoff = 0.45 cfs @ 12.01 hrs, Volume= 0.033 af, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,880	98	Paved parking, HSG A
55	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
0	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
3,935	98	Weighted Average
3,935	98	100.00% Impervious Area
55		1.40% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 76

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0800	1.71		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	239	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.9	259	Total			

Summary for Subcatchment Post 2c: Post 2c

Runoff = 1.93 cfs @ 12.02 hrs, Volume= 0.144 af, Depth> 3.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
5,680	98	Roofs, HSG A
11,517	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,382	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
20,579	88	Weighted Average
3,382	39	16.43% Pervious Area
17,197	98	83.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.2	208	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.5	228	Total			

Summary for Subcatchment Post 2d: Post 2d

Runoff = 1.76 cfs @ 12.02 hrs, Volume= 0.130 af, Depth> 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 77

Area (sf)	CN	Description
4,913	98	Roofs, HSG A
10,510	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,159	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
19,582	85	Weighted Average
4,159	39	21.24% Pervious Area
15,423	98	78.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0600	1.52		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.0	232	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.2	252	Total			

Summary for Subcatchment Post 2e: Post 2e

Runoff = 0.30 cfs @ 12.18 hrs, Volume= 0.032 af, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
1,444	98	Roofs, HSG A
2,265	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,533	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
8,242	66	Weighted Average
4,533	39	55.00% Pervious Area
3,709	98	45.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	80	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.2	36	0.2500	3.50		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.1	300	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.6	416	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 78

Summary for Subcatchment Post 2f: Post 2f

Runoff = 0.90 cfs @ 12.04 hrs, Volume= 0.080 af, Depth> 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Adj	Description
6,321	98	98	Roofs, HSG A
27	98	98	Paved parking, HSG A
1,685	98	98	Unconnected pavement, HSG A
47,632	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
31,396	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
87,061	43	42	Weighted Average, UI Adjusted
79,028	37	37	90.77% Pervious Area
8,033	98	98	9.23% Impervious Area
1,685			20.98% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	32	0.0200	1.08		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	59	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.9	165	0.4000	3.16		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.3	256	Total			

Summary for Subcatchment Post 2g: Post 2g

Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.018 af, Depth> 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
1,182	98	Roofs, HSG A
357	98	Paved parking, HSG A
121	98	Unconnected pavement, HSG A
13,159	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
11,547	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
26,366	41	Weighted Average
24,706	37	93.70% Pervious Area
1,660	98	6.30% Impervious Area
121		7.29% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 79

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	41	0.0800	1.97		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.2	255	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.5	296	Total			

Summary for Subcatchment Post 2h: Post 2h

Runoff = 0.54 cfs @ 12.01 hrs, Volume= 0.039 af, Depth> 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
1,807	98	Roofs, HSG A
2,854	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,902	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,563	81	Weighted Average
1,902	39	28.98% Pervious Area
4,661	98	71.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0600	1.83		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	67	0.0600	3.94		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.8	117	Total			

Summary for Subcatchment Post 2i: Post 2i

Runoff = 1.12 cfs @ 12.12 hrs, Volume= 0.112 af, Depth> 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 80

Area (sf)	CN	Description
11,373	98	Roofs, HSG A
877	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
40,393	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
52,643	53	Weighted Average
40,393	39	76.73% Pervious Area
12,250	98	23.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.4000	0.25		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.1	28	0.4000	4.43		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.5	296	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	424	Total			

Summary for Subcatchment Post 2j: Post 2j

Runoff = 0.06 cfs @ 12.03 hrs, Volume= 0.007 af, Depth> 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
459	98	Roofs, HSG A
90	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
4,518	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
7,047	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,114	41	Weighted Average
11,565	38	95.47% Pervious Area
549	98	4.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	20	0.3300	0.26		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
0.5	131	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.8	151	Total			

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 81

Summary for Subcatchment Post 2k: Post 2k

Runoff = 0.41 cfs @ 12.05 hrs, Volume= 0.033 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
3,713	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
8,633	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,346	57	Weighted Average
8,633	39	69.93% Pervious Area
3,713	98	30.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
3.5	207	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.6	227	Total			

Summary for Subcatchment Post 3a: Post 3a

Runoff = 0.80 cfs @ 12.05 hrs, Volume= 0.063 af, Depth> 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
0	98	Roofs, HSG A
0	98	Paved parking, HSG A
7,192	98	Unconnected pavement, HSG A
769	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
13,267	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
21,228	59	Weighted Average
14,036	39	66.12% Pervious Area
7,192	98	33.88% Impervious Area
7,192		100.00% Unconnected

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 82

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0500	1.42		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.7	725	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	745	Total			

Summary for Subcatchment Post 3b: Post 3b

Runoff = 4.44 cfs @ 12.13 hrs, Volume= 0.461 af, Depth> 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
16,932	98	Roofs, HSG A
4,544	98	Paved parking, HSG A
3,956	98	Unconnected pavement, HSG A
185,603	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
110,357	39	>75% Grass cover, Good, HSG A
24,197	98	Water Surface, HSG A
345,589	46	Weighted Average
295,960	37	85.64% Pervious Area
49,629	98	14.36% Impervious Area
3,956		7.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	20	0.3300	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
1.7	165	0.1000	1.58		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	416	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
9.9	601	Total			

Summary for Subcatchment Post 3c: Post 3c

Runoff = 0.39 cfs @ 12.03 hrs, Volume= 0.030 af, Depth> 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.60"

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 83

Area (sf)	CN	Description
1,640	98	Roofs, HSG A
1,797	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
886	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,487	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
8,810	62	Weighted Average
5,373	39	60.99% Pervious Area
3,437	98	39.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0400	1.40		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.7	102	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.1	132	Total			

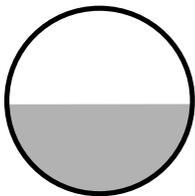
Summary for Reach 18" Pipe: 18" Pipe

Inflow Area = 3.664 ac, 37.96% Impervious, Inflow Depth > 2.11" for 10-Year event
 Inflow = 4.94 cfs @ 12.30 hrs, Volume= 0.643 af
 Outflow = 4.94 cfs @ 12.31 hrs, Volume= 0.643 af, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 5.85 fps, Min. Travel Time= 0.3 min
 Avg. Velocity = 2.30 fps, Avg. Travel Time= 0.9 min

Peak Storage= 101 cf @ 12.31 hrs
 Average Depth at Peak Storage= 0.72'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.50 cfs

18.0" Round Pipe
 n= 0.013
 Length= 120.0' Slope= 0.0100 '/'
 Inlet Invert= 48.91', Outlet Invert= 47.71'



12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 84

Summary for Reach Phase 1 Post: Phase 1 Post

Inflow Area = 17.032 ac, 39.73% Impervious, Inflow Depth > 0.05" for 10-Year event
Inflow = 1.52 cfs @ 12.42 hrs, Volume= 0.075 af
Outflow = 1.52 cfs @ 12.42 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Phase 2 Post: Phase 2 Post

Inflow Area = 14.274 ac, 21.44% Impervious, Inflow Depth > 0.44" for 10-Year event
Inflow = 4.93 cfs @ 12.12 hrs, Volume= 0.524 af
Outflow = 4.93 cfs @ 12.12 hrs, Volume= 0.524 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Pond Post: Pond Post

Inflow Area = 31.306 ac, 31.39% Impervious, Inflow Depth > 0.23" for 10-Year event
Inflow = 5.95 cfs @ 12.15 hrs, Volume= 0.599 af
Outflow = 5.95 cfs @ 12.15 hrs, Volume= 0.599 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Swale to Pond 2-2: Swale to Pond 2-2

Inflow Area = 0.756 ac, 19.20% Impervious, Inflow Depth > 0.91" for 10-Year event
Inflow = 0.71 cfs @ 12.02 hrs, Volume= 0.057 af
Outflow = 0.69 cfs @ 12.04 hrs, Volume= 0.057 af, Atten= 3%, Lag= 1.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Max. Velocity= 2.22 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 0.75 fps, Avg. Travel Time= 3.7 min

Peak Storage= 51 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.00' Flow Area= 6.7 sf, Capacity= 57.26 cfs

10.00' x 1.00' deep Parabolic Channel, n= 0.035 High grass
Length= 165.0' Slope= 0.0727 '
Inlet Invert= 50.00', Outlet Invert= 38.00'



12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 85

Summary for Pond CB 1-6: CB 1-6

Inflow Area = 3.868 ac, 37.14% Impervious, Inflow Depth > 2.05" for 10-Year event
 Inflow = 5.01 cfs @ 12.31 hrs, Volume= 0.661 af
 Outflow = 5.01 cfs @ 12.31 hrs, Volume= 0.661 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.01 cfs @ 12.31 hrs, Volume= 0.661 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 41.28' @ 12.31 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	40.00'	18.0" Round 18" Culvert L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.00' / 39.70' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=4.99 cfs @ 12.31 hrs HW=41.28' TW=39.31' (Dynamic Tailwater)
 ↑1=18" Culvert (Barrel Controls 4.99 cfs @ 4.18 fps)

Summary for Pond DMH P 1-2: DMH 1-2

Inflow Area = 0.435 ac, 74.23% Impervious, Inflow Depth > 3.27" for 10-Year event
 Inflow = 1.62 cfs @ 12.01 hrs, Volume= 0.119 af
 Outflow = 1.62 cfs @ 12.01 hrs, Volume= 0.119 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.62 cfs @ 12.01 hrs, Volume= 0.119 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 45.79' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round 12" Culvert L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 42.50' S= 0.0433 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.55 cfs @ 12.01 hrs HW=45.77' TW=43.34' (Dynamic Tailwater)
 ↑1=12" Culvert (Inlet Controls 1.55 cfs @ 2.78 fps)

Summary for Pond DMH P 1-7: DMH P1-7

Inflow Area = 14.636 ac, 36.58% Impervious, Inflow Depth > 0.32" for 10-Year event
 Inflow = 3.95 cfs @ 12.43 hrs, Volume= 0.384 af
 Outflow = 3.95 cfs @ 12.43 hrs, Volume= 0.384 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.95 cfs @ 12.43 hrs, Volume= 0.384 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 35.22' @ 12.43 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.32'	24.0" Round Culvert L= 84.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 86

Inlet / Outlet Invert= 34.32' / 33.75' S= 0.0068 '/' Cc= 0.900
n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=3.92 cfs @ 12.43 hrs HW=35.21' TW=34.25' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 3.92 cfs @ 4.26 fps)

Summary for Pond DMH P1-1: DMH 1-1

Inflow Area = 0.250 ac, 96.51% Impervious, Inflow Depth > 4.22" for 10-Year event
Inflow = 1.20 cfs @ 12.01 hrs, Volume= 0.088 af
Outflow = 1.20 cfs @ 12.01 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min
Primary = 1.20 cfs @ 12.01 hrs, Volume= 0.088 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 58.92' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	58.35'	12.0" Round 12" Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.35' / 57.50' S= 0.0283 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.15 cfs @ 12.01 hrs HW=58.91' TW=36.32' (Dynamic Tailwater)

↑1=12" Culvert (Inlet Controls 1.15 cfs @ 2.55 fps)

Summary for Pond DMH P1-10: DMH P1-10

Inflow Area = 1.292 ac, 51.16% Impervious, Inflow Depth > 2.28" for 10-Year event
Inflow = 3.19 cfs @ 12.01 hrs, Volume= 0.246 af
Outflow = 3.19 cfs @ 12.01 hrs, Volume= 0.246 af, Atten= 0%, Lag= 0.0 min
Primary = 3.19 cfs @ 12.01 hrs, Volume= 0.246 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 41.63' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	40.70'	15.0" Round Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.70' / 38.00' S= 0.0245 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.06 cfs @ 12.01 hrs HW=41.60' TW=38.97' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 3.06 cfs @ 3.23 fps)

Summary for Pond DMH P1-11: DMH P1-11

Inflow Area = 1.292 ac, 51.16% Impervious, Inflow Depth > 2.28" for 10-Year event
Inflow = 3.19 cfs @ 12.01 hrs, Volume= 0.246 af
Outflow = 3.19 cfs @ 12.01 hrs, Volume= 0.246 af, Atten= 0%, Lag= 0.0 min
Primary = 3.19 cfs @ 12.01 hrs, Volume= 0.246 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 87

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 44.10' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.90'	12.0" Round Culvert L= 52.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.90' / 40.80' S= 0.0404 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.06 cfs @ 12.01 hrs HW=44.06' TW=41.60' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 3.06 cfs @ 3.90 fps)

Summary for Pond DMH P1-12: DMH P1-12

Inflow Area = 0.766 ac, 25.16% Impervious, Inflow Depth > 1.17" for 10-Year event
 Inflow = 0.84 cfs @ 12.03 hrs, Volume= 0.075 af
 Outflow = 0.84 cfs @ 12.03 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.84 cfs @ 12.03 hrs, Volume= 0.075 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 55.47' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	55.00'	12.0" Round Culvert L= 225.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 55.00' / 43.00' S= 0.0533 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.82 cfs @ 12.03 hrs HW=55.46' TW=44.02' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 0.82 cfs @ 2.31 fps)

Summary for Pond DMH P1-13: DMH P1-13

Inflow Area = 3.868 ac, 37.14% Impervious, Inflow Depth > 2.05" for 10-Year event
 Inflow = 5.01 cfs @ 12.31 hrs, Volume= 0.661 af
 Outflow = 5.01 cfs @ 12.31 hrs, Volume= 0.661 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.01 cfs @ 12.31 hrs, Volume= 0.661 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 39.31' @ 12.31 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.10'	18.0" Round Culvert L= 130.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.10' / 37.40' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=4.99 cfs @ 12.31 hrs HW=39.31' TW=38.19' (Dynamic Tailwater)
 ↑1=Culvert (Barrel Controls 4.99 cfs @ 4.46 fps)

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 88

Summary for Pond DMH P1-3: DMH P1-3

Inflow Area = 2.355 ac, 36.03% Impervious, Inflow Depth > 1.64" for 10-Year event
Inflow = 3.59 cfs @ 12.05 hrs, Volume= 0.323 af
Outflow = 3.59 cfs @ 12.05 hrs, Volume= 0.323 af, Atten= 0%, Lag= 0.0 min
Primary = 3.59 cfs @ 12.05 hrs, Volume= 0.323 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 43.40' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.40'	15.0" Round Culvert L= 142.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.40' / 36.60' S= 0.0408 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.58 cfs @ 12.05 hrs HW=43.40' TW=37.81' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 3.58 cfs @ 3.41 fps)

Summary for Pond DMH P1-4: DMH P1-4

Inflow Area = 8.538 ac, 35.38% Impervious, Inflow Depth > 0.60" for 10-Year event
Inflow = 4.81 cfs @ 12.06 hrs, Volume= 0.426 af
Outflow = 4.81 cfs @ 12.06 hrs, Volume= 0.426 af, Atten= 0%, Lag= 0.0 min
Primary = 4.81 cfs @ 12.06 hrs, Volume= 0.426 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 38.33' @ 12.48 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	18.0" Round Culvert L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.00' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.87 cfs @ 12.06 hrs HW=37.82' TW=37.39' (Dynamic Tailwater)
↑1=Culvert (Outlet Controls 3.87 cfs @ 3.14 fps)

Summary for Pond DMH P1-5: DMH P1-5

Inflow Area = 0.713 ac, 59.08% Impervious, Inflow Depth > 2.63" for 10-Year event
Inflow = 2.05 cfs @ 12.02 hrs, Volume= 0.156 af
Outflow = 2.05 cfs @ 12.02 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min
Primary = 2.05 cfs @ 12.02 hrs, Volume= 0.156 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.42' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.35'	12.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 89

Inlet / Outlet Invert= 35.35' / 35.10' S= 0.0050 '/ Cc= 0.900
 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.63 cfs @ 12.02 hrs HW=36.34' TW=36.07' (Dynamic Tailwater)
 ↑1=12" Culvert (Outlet Controls 1.63 cfs @ 2.60 fps)

Summary for Pond DMH P1-6: DMH P1-6

Inflow Area = 0.864 ac, 62.91% Impervious, Inflow Depth > 2.79" for 10-Year event
 Inflow = 2.67 cfs @ 12.02 hrs, Volume= 0.201 af
 Outflow = 2.67 cfs @ 12.02 hrs, Volume= 0.201 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.67 cfs @ 12.02 hrs, Volume= 0.201 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 36.12' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	12.0" Round 12" Culvert L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 34.42' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.55 cfs @ 12.02 hrs HW=36.08' TW=35.08' (Dynamic Tailwater)
 ↑1=12" Culvert (Barrel Controls 2.55 cfs @ 3.75 fps)

Summary for Pond DMH P1-8: DMH P 1-8

Inflow Area = 1.173 ac, 81.82% Impervious, Inflow Depth > 3.59" for 10-Year event
 Inflow = 4.67 cfs @ 12.03 hrs, Volume= 0.351 af
 Outflow = 4.67 cfs @ 12.03 hrs, Volume= 0.351 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.67 cfs @ 12.03 hrs, Volume= 0.351 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 38.06' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.35'	15.0" Round 15" Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.35' / 34.80' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.73 cfs @ 12.03 hrs HW=37.68' TW=37.39' (Dynamic Tailwater)
 ↑1=15" Culvert (Outlet Controls 2.73 cfs @ 2.22 fps)

Summary for Pond DMH P1-9: DMH P1-9

Inflow Area = 1.173 ac, 81.82% Impervious, Inflow Depth > 3.59" for 10-Year event
 Inflow = 4.67 cfs @ 12.03 hrs, Volume= 0.351 af
 Outflow = 4.67 cfs @ 12.03 hrs, Volume= 0.351 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.67 cfs @ 12.03 hrs, Volume= 0.351 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 90

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 37.52' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	15.0" Round Culvert L= 144.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.70' / 34.00' S= 0.0049 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.78 cfs @ 12.03 hrs HW=37.39' TW=36.75' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 3.78 cfs @ 3.08 fps)

Summary for Pond DMH P2-1: DMH P2-1

Inflow Area = 0.496 ac, 45.65% Impervious, Inflow Depth > 2.05" for 10-Year event
 Inflow = 1.14 cfs @ 12.01 hrs, Volume= 0.085 af
 Outflow = 1.14 cfs @ 12.01 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.14 cfs @ 12.01 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.05' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	47.45'	12.0" Round 12" Culvert L= 70.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 47.45' / 44.00' S= 0.0493 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.10 cfs @ 12.01 hrs HW=48.03' TW=38.47' (Dynamic Tailwater)
 ↑1=12" Culvert (Inlet Controls 1.10 cfs @ 2.30 fps)

Summary for Pond DMH P2-2: DMH P2-2

Inflow Area = 2.921 ac, 24.27% Impervious, Inflow Depth > 0.66" for 10-Year event
 Inflow = 1.92 cfs @ 12.02 hrs, Volume= 0.162 af
 Outflow = 1.92 cfs @ 12.02 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.92 cfs @ 12.02 hrs, Volume= 0.162 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.47' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	47.60'	12.0" Round 12" Culvert L= 64.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.60' / 47.25' S= 0.0055 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.84 cfs @ 12.02 hrs HW=48.45' TW=46.65' (Dynamic Tailwater)
 ↑1=12" Culvert (Barrel Controls 1.84 cfs @ 3.51 fps)

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 91

Summary for Pond DMH P2-3: DMH P2-3

Inflow Area = 3.393 ac, 32.52% Impervious, Inflow Depth > 1.08" for 10-Year event
Inflow = 3.86 cfs @ 12.02 hrs, Volume= 0.306 af
Outflow = 3.86 cfs @ 12.02 hrs, Volume= 0.306 af, Atten= 0%, Lag= 0.0 min
Primary = 3.86 cfs @ 12.02 hrs, Volume= 0.306 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 46.72' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.19'	12.0" Round 12" Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.19' / 42.00' S= 0.0290 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.69 cfs @ 12.02 hrs HW=46.64' TW=38.50' (Dynamic Tailwater)
↑**1=12" Culvert** (Inlet Controls 3.69 cfs @ 4.70 fps)

Summary for Pond DMH P2-4: DMH P2-4

Inflow Area = 0.756 ac, 19.20% Impervious, Inflow Depth > 0.91" for 10-Year event
Inflow = 0.71 cfs @ 12.02 hrs, Volume= 0.057 af
Outflow = 0.71 cfs @ 12.02 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 12.02 hrs, Volume= 0.057 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 53.63' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	53.20'	12.0" Round 12" Culvert L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.20' / 51.20' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.68 cfs @ 12.02 hrs HW=53.62' TW=50.13' (Dynamic Tailwater)
↑**1=12" Culvert** (Inlet Controls 0.68 cfs @ 2.20 fps)

Summary for Pond DMH P2-5: DMH P2-5

Inflow Area = 5.854 ac, 30.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.00' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.00'	12.0" Round 12" Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 92

Inlet / Outlet Invert= 36.00' / 35.60' S= 0.0100 '/ Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=0.00' (Dynamic Tailwater)

↑1=12" Culvert (Controls 0.00 cfs)

Summary for Pond DW 1-4: DW P1-4

Inflow Area = 13.667 ac, 34.60% Impervious, Inflow Depth = 0.13" for 10-Year event
Inflow = 3.41 cfs @ 12.45 hrs, Volume= 0.153 af
Outflow = 3.41 cfs @ 12.45 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min
Primary = 3.41 cfs @ 12.45 hrs, Volume= 0.153 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.81' @ 12.45 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.50'	12.0" Round Culvert L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.50' / 34.42' S= 0.0093 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	38.25'	20.0' long x 2.0' 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=3.40 cfs @ 12.45 hrs HW=36.81' TW=35.21' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 3.40 cfs @ 4.33 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.50' TW=0.00' (Dynamic Tailwater)

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

Summary for Pond DW P1-2: DW P1-2

Inflow Area = 5.848 ac, 32.31% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.71' @ 14.93 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	15.0" Round 12" Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.50' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 93

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.70' TW=36.50' (Dynamic Tailwater)

↑1=12" Culvert (Controls 0.00 cfs)

Summary for Pond DW P2-3: DW P2-3

Inflow Area = 2.282 ac, 11.82% Impervious, Inflow Depth = 0.00" for 10-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.32' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	48.30'	12.0" Round 12" Culvert L= 120.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.30' / 47.70' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=48.30' TW=47.60' (Dynamic Tailwater)

↑1=12" Culvert (Controls 0.00 cfs)

Summary for Pond Pond 1-1: Pond 1-1

Inflow Area = 5.848 ac, 32.31% Impervious, Inflow Depth > 0.49" for 10-Year event
 Inflow = 3.75 cfs @ 12.15 hrs, Volume= 0.240 af
 Outflow = 0.65 cfs @ 12.62 hrs, Volume= 0.241 af, Atten= 83%, Lag= 28.0 min
 Discarded = 0.65 cfs @ 12.62 hrs, Volume= 0.241 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 37.73' @ 12.62 hrs Surf.Area= 3,375 sf Storage= 4,550 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 52.1 min (802.1 - 750.0)

Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	10,322 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	1,891	0	0
38.00	3,608	5,499	5,499
39.00	6,038	4,823	10,322

Device	Routing	Invert	Outlet Devices
#1	Discarded	36.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	38.50'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 94

Discarded OutFlow Max=0.65 cfs @ 12.62 hrs HW=37.73' (Free Discharge)

↳1=Exfiltration (Exfiltration Controls 0.65 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=36.70' (Dynamic Tailwater)

↳2=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond Pond 1-2: Pond 1-2

Inflow Area = 13.667 ac, 34.60% Impervious, Inflow Depth > 1.05" for 10-Year event
 Inflow = 8.62 cfs @ 12.07 hrs, Volume= 1.195 af
 Outflow = 5.69 cfs @ 12.45 hrs, Volume= 1.195 af, Atten= 34%, Lag= 23.3 min
 Discarded = 1.50 cfs @ 12.45 hrs, Volume= 1.030 af
 Primary = 3.41 cfs @ 12.45 hrs, Volume= 0.153 af
 Secondary = 0.77 cfs @ 12.45 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 38.31' @ 12.45 hrs Surf.Area= 7,851 sf Storage= 12,841 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 56.2 min (835.6 - 779.5)

Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	16,448 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	3,158	0	0
38.00	7,320	10,478	10,478
38.75	8,599	5,970	16,448

Device	Routing	Invert	Outlet Devices
#1	Discarded	36.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	38.00'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	38.25'	20.0' long x 2.0' 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Discarded OutFlow Max=1.50 cfs @ 12.45 hrs HW=38.31' (Free Discharge)

↳1=Exfiltration (Exfiltration Controls 1.50 cfs)

Primary OutFlow Max=3.40 cfs @ 12.45 hrs HW=38.31' TW=36.81' (Dynamic Tailwater)

↳2=Orifice/Grate (Weir Controls 3.40 cfs @ 1.82 fps)

Secondary OutFlow Max=0.76 cfs @ 12.45 hrs HW=38.31' TW=0.00' (Dynamic Tailwater)

↳3=Broad-Crested Rectangular Weir (Weir Controls 0.76 cfs @ 0.63 fps)

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 95

Summary for Pond Pond 1-3: Pond 1-3

Inflow Area = 15.076 ac, 36.77% Impervious, Inflow Depth > 0.36" for 10-Year event
 Inflow = 4.15 cfs @ 12.42 hrs, Volume= 0.456 af
 Outflow = 0.91 cfs @ 13.10 hrs, Volume= 0.456 af, Atten= 78%, Lag= 40.4 min
 Discarded = 0.91 cfs @ 13.10 hrs, Volume= 0.456 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 35.08' @ 13.10 hrs Surf.Area= 4,754 sf Storage= 8,188 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 67.6 min (821.2 - 753.6)

Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	12,888 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,114	0	0
36.00	5,478	12,888	12,888

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	35.25'	10.0' long x 3.0' 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
			Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68
			2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.91 cfs @ 13.10 hrs HW=35.08' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.91 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.00' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond Pond 1-4: Pond 1-4

Inflow Area = 1.753 ac, 65.22% Impervious, Inflow Depth > 2.89" for 10-Year event
 Inflow = 5.56 cfs @ 12.02 hrs, Volume= 0.422 af
 Outflow = 2.01 cfs @ 12.23 hrs, Volume= 0.422 af, Atten= 64%, Lag= 12.4 min
 Discarded = 0.78 cfs @ 12.23 hrs, Volume= 0.389 af
 Primary = 1.24 cfs @ 12.23 hrs, Volume= 0.033 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 37.14' @ 12.23 hrs Surf.Area= 4,065 sf Storage= 5,788 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 74.2 min (824.0 - 749.8)

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 96

Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	10,054 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	805	0	0
35.00	1,202	1,004	1,004
36.00	1,753	1,478	2,481
38.00	5,820	7,573	10,054

Device	Routing	Invert	Outlet Devices
#1	Discarded	34.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	37.00'	10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.78 cfs @ 12.23 hrs HW=37.14' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.78 cfs)

Primary OutFlow Max=1.22 cfs @ 12.23 hrs HW=37.14' TW=0.00' (Dynamic Tailwater)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 1.22 cfs @ 0.90 fps)

Summary for Pond Pond 1-5: Pond 1-5

Inflow Area = 4.871 ac, 30.50% Impervious, Inflow Depth > 1.41" for 10-Year event
 Inflow = 5.83 cfs @ 12.03 hrs, Volume= 0.571 af
 Outflow = 3.88 cfs @ 12.17 hrs, Volume= 0.571 af, Atten= 33%, Lag= 8.8 min
 Discarded = 0.96 cfs @ 12.17 hrs, Volume= 0.484 af
 Primary = 2.93 cfs @ 12.17 hrs, Volume= 0.088 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 39.24' @ 12.17 hrs Surf.Area= 4,990 sf Storage= 4,531 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 23.1 min (787.4 - 764.3)

Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	5,921 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	2,339	0	0
39.50	5,556	5,921	5,921

Device	Routing	Invert	Outlet Devices
#1	Discarded	38.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	39.00'	10.0' long x 2.0' 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

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 97

Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88
2.85 3.07 3.20 3.32

Discarded OutFlow Max=0.95 cfs @ 12.17 hrs HW=39.23' (Free Discharge)

↳1=Exfiltration (Exfiltration Controls 0.95 cfs)

Primary OutFlow Max=2.86 cfs @ 12.17 hrs HW=39.23' TW=36.95' (Dynamic Tailwater)

↳2=Broad-Crested Rectangular Weir (Weir Controls 2.86 cfs @ 1.23 fps)

Summary for Pond Pond 2-1: Pond 2-1

Inflow Area = 2.282 ac, 11.82% Impervious, Inflow Depth > 0.59" for 10-Year event
 Inflow = 1.30 cfs @ 12.04 hrs, Volume= 0.113 af
 Outflow = 0.38 cfs @ 12.33 hrs, Volume= 0.113 af, Atten= 71%, Lag= 17.6 min
 Discarded = 0.38 cfs @ 12.33 hrs, Volume= 0.113 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.36' @ 12.33 hrs Surf.Area= 1,961 sf Storage= 670 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 6.7 min (795.2 - 788.5)

Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	9,380 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
50.00	1,727	0	0
52.00	3,014	4,741	4,741
53.00	6,264	4,639	9,380

Device	Routing	Invert	Outlet Devices
#1	Primary	51.50'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	50.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.38 cfs @ 12.33 hrs HW=50.36' (Free Discharge)

↳2=Exfiltration (Exfiltration Controls 0.38 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.00' TW=48.30' (Dynamic Tailwater)

↳1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond Pond 2-2: Pond 2-2

Inflow Area = 5.854 ac, 30.00% Impervious, Inflow Depth > 1.15" for 10-Year event
 Inflow = 6.32 cfs @ 12.03 hrs, Volume= 0.560 af
 Outflow = 1.28 cfs @ 12.48 hrs, Volume= 0.561 af, Atten= 80%, Lag= 27.5 min
 Discarded = 1.28 cfs @ 12.48 hrs, Volume= 0.561 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

12013 Post - Offsite

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

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 98

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 39.01' @ 12.48 hrs Surf.Area= 6,675 sf Storage= 5,886 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 26.0 min (783.6 - 757.7)

Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	13,302 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	4,933	0	0
40.00	8,369	13,302	13,302

Device	Routing	Invert	Outlet Devices
#1	Primary	39.50'	10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	38.00'	8.270 in/hr Exfiltration over Surface area
#3	Primary	39.25'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=1.28 cfs @ 12.48 hrs HW=39.01' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 1.28 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=38.00' TW=36.00' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
 ↳ **3=Orifice/Grate** (Controls 0.00 cfs)

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 99

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentOffsite DOT: Offsite DOT	Runoff Area=159,601 sf 37.96% Impervious Runoff Depth>2.71" Flow Length=1,589' Slope=0.0750 '/' Tc=21.8 min CN=71 Runoff=6.51 cfs 0.828 af
SubcatchmentPost 1a: Post 1a	Runoff Area=6,252 sf 95.59% Impervious Runoff Depth>5.04" Flow Length=239' Tc=1.0 min CN=95 Runoff=0.82 cfs 0.060 af
SubcatchmentPost 1b: Post 1b	Runoff Area=4,636 sf 97.76% Impervious Runoff Depth>5.15" Flow Length=290' Tc=1.3 min CN=97 Runoff=0.62 cfs 0.046 af
SubcatchmentPost 1c: Post 1c	Runoff Area=29,936 sf 42.27% Impervious Runoff Depth>2.38" Flow Length=239' Tc=1.3 min CN=63 Runoff=1.72 cfs 0.136 af
SubcatchmentPost 1d: Post 1d	Runoff Area=20,256 sf 10.24% Impervious Runoff Depth>0.76" Flow Length=200' Tc=18.1 min UI Adjusted CN=41 Runoff=0.18 cfs 0.029 af
SubcatchmentPost 1e: Post 1e	Runoff Area=23,349 sf 0.00% Impervious Runoff Depth>0.25" Flow Length=89' Tc=10.2 min CN=38 Runoff=0.03 cfs 0.011 af
SubcatchmentPost 1f: Post 1f	Runoff Area=82,367 sf 25.75% Impervious Runoff Depth>1.58" Flow Length=478' Tc=9.5 min CN=54 Runoff=2.30 cfs 0.250 af
SubcatchmentPost 1g: Post 1g	Runoff Area=15,897 sf 69.30% Impervious Runoff Depth>3.74" Flow Length=300' Tc=1.0 min CN=80 Runoff=1.52 cfs 0.114 af
SubcatchmentPost 1h: Post 1h	Runoff Area=83,632 sf 27.38% Impervious Runoff Depth>1.65" Flow Length=523' Tc=5.8 min UI Adjusted CN=51 Runoff=2.77 cfs 0.264 af
SubcatchmentPost 1i: Post 1i	Runoff Area=3,042 sf 100.00% Impervious Runoff Depth>5.26" Flow Length=266' Tc=1.0 min CN=98 Runoff=0.42 cfs 0.031 af
SubcatchmentPost 1j: Post 1j	Runoff Area=8,891 sf 22.49% Impervious Runoff Depth>1.42" Flow Length=124' Tc=0.9 min UI Adjusted CN=51 Runoff=0.28 cfs 0.024 af
SubcatchmentPost 1k: Post 1k	Runoff Area=31,689 sf 22.34% Impervious Runoff Depth>1.42" Flow Length=200' Tc=3.0 min CN=52 Runoff=0.95 cfs 0.086 af
SubcatchmentPost 1l: Post 1l	Runoff Area=14,607 sf 84.31% Impervious Runoff Depth>4.48" Flow Length=271' Tc=5.5 min CN=89 Runoff=1.50 cfs 0.125 af
SubcatchmentPost 1m: Post 1m	Runoff Area=54,912 sf 21.57% Impervious Runoff Depth>1.35" Flow Length=249' Tc=2.6 min UI Adjusted CN=50 Runoff=1.59 cfs 0.142 af
SubcatchmentPost 1n: Post 1n	Runoff Area=16,566 sf 42.96% Impervious Runoff Depth>2.44" Flow Length=236' Tc=1.2 min CN=64 Runoff=0.97 cfs 0.077 af
SubcatchmentPost 1o: Post 1o	Runoff Area=14,474 sf 77.53% Impervious Runoff Depth>4.15" Flow Length=191' Slope=0.0150 '/' Tc=1.8 min CN=85 Runoff=1.50 cfs 0.115 af

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 100

SubcatchmentPost 1p: Post 1p	Runoff Area=6,584 sf 80.95% Impervious Runoff Depth>4.32" Flow Length=127' Tc=0.7 min CN=87 Runoff=0.74 cfs 0.054 af
SubcatchmentPost 1q: Post 1q	Runoff Area=4,608 sf 77.43% Impervious Runoff Depth>4.15" Flow Length=75' Tc=0.4 min CN=85 Runoff=0.50 cfs 0.037 af
SubcatchmentPost 1r: Post 1r	Runoff Area=6,804 sf 88.18% Impervious Runoff Depth>4.68" Flow Length=169' Tc=1.1 min CN=91 Runoff=0.82 cfs 0.061 af
SubcatchmentPost 1s: Post 1s	Runoff Area=12,365 sf 18.27% Impervious Runoff Depth>1.22" Flow Length=118' Tc=0.5 min CN=50 Runoff=0.32 cfs 0.029 af
SubcatchmentPost 1t: Post 1t	Runoff Area=24,013 sf 83.39% Impervious Runoff Depth>4.44" Flow Length=304' Tc=1.5 min CN=88 Runoff=2.70 cfs 0.204 af
SubcatchmentPost 1u: Post 1u	Runoff Area=27,102 sf 80.43% Impervious Runoff Depth>4.29" Flow Length=358' Tc=2.0 min CN=86 Runoff=2.93 cfs 0.223 af
SubcatchmentPost 1v: Post 1v	Runoff Area=10,841 sf 92.44% Impervious Runoff Depth>4.89" Flow Length=244' Tc=0.8 min CN=94 Runoff=1.39 cfs 0.101 af
SubcatchmentPost 1w: Post 1w	Runoff Area=12,069 sf 85.92% Impervious Runoff Depth>4.57" Flow Length=250' Tc=1.0 min CN=90 Runoff=1.43 cfs 0.105 af
SubcatchmentPost 1x: Post 1x	Runoff Area=28,013 sf 11.12% Impervious Runoff Depth>0.83" Flow Length=281' Tc=5.9 min CN=45 Runoff=0.38 cfs 0.044 af
SubcatchmentPost 1y: Post 1y	Runoff Area=5,336 sf 98.84% Impervious Runoff Depth>5.20" Flow Length=269' Tc=1.0 min CN=97 Runoff=0.73 cfs 0.053 af
SubcatchmentPost 1z: Post 1z	Runoff Area=25,257 sf 31.61% Impervious Runoff Depth>1.88" Flow Length=97' Tc=1.1 min CN=58 Runoff=1.10 cfs 0.091 af
SubcatchmentPost 2a: Post 2a	Runoff Area=5,548 sf 96.88% Impervious Runoff Depth>5.11" Flow Length=242' Slope=0.0800 '/' Tc=0.8 min CN=96 Runoff=0.75 cfs 0.054 af
SubcatchmentPost 2b: Post 2b	Runoff Area=3,935 sf 100.00% Impervious Runoff Depth>5.26" Flow Length=259' Slope=0.0800 '/' Tc=0.9 min CN=98 Runoff=0.54 cfs 0.040 af
SubcatchmentPost 2c: Post 2c	Runoff Area=20,579 sf 83.57% Impervious Runoff Depth>4.45" Flow Length=228' Slope=0.0200 '/' Tc=1.5 min CN=88 Runoff=2.32 cfs 0.175 af
SubcatchmentPost 2d: Post 2d	Runoff Area=19,582 sf 78.76% Impervious Runoff Depth>4.21" Flow Length=252' Tc=1.2 min CN=85 Runoff=2.11 cfs 0.158 af
SubcatchmentPost 2e: Post 2e	Runoff Area=8,242 sf 45.00% Impervious Runoff Depth>2.53" Flow Length=416' Tc=13.6 min CN=66 Runoff=0.36 cfs 0.040 af
SubcatchmentPost 2f: Post 2f	Runoff Area=87,061 sf 9.23% Impervious Runoff Depth>0.70" Flow Length=256' Tc=2.3 min UI Adjusted CN=42 Runoff=1.08 cfs 0.117 af

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 101

Subcatchment Post 2g: Post 2g	Runoff Area=26,366 sf 6.30% Impervious Runoff Depth>0.56" Flow Length=296' Tc=2.5 min CN=41 Runoff=0.22 cfs 0.028 af
Subcatchment Post 2h: Post 2h	Runoff Area=6,563 sf 71.02% Impervious Runoff Depth>3.83" Flow Length=117' Slope=0.0600 '/' Tc=0.8 min CN=81 Runoff=0.65 cfs 0.048 af
Subcatchment Post 2i: Post 2i	Runoff Area=52,643 sf 23.27% Impervious Runoff Depth>1.46" Flow Length=424' Tc=9.2 min CN=53 Runoff=1.34 cfs 0.147 af
Subcatchment Post 2j: Post 2j	Runoff Area=12,114 sf 4.53% Impervious Runoff Depth>0.49" Flow Length=151' Slope=0.3300 '/' Tc=1.8 min CN=41 Runoff=0.07 cfs 0.011 af
Subcatchment Post 2k: Post 2k	Runoff Area=12,346 sf 30.07% Impervious Runoff Depth>1.80" Flow Length=227' Tc=3.6 min CN=57 Runoff=0.49 cfs 0.043 af
Subcatchment Post 3a: Post 3a	Runoff Area=21,228 sf 33.88% Impervious Runoff Depth>1.98" Flow Length=745' Slope=0.0500 '/' Tc=2.9 min CN=59 Runoff=0.96 cfs 0.081 af
Subcatchment Post 3b: Post 3b	Runoff Area=345,589 sf 14.36% Impervious Runoff Depth>0.96" Flow Length=601' Tc=9.9 min CN=46 Runoff=5.33 cfs 0.632 af
Subcatchment Post 3c: Post 3c	Runoff Area=8,810 sf 39.01% Impervious Runoff Depth>2.23" Flow Length=132' Tc=2.1 min CN=62 Runoff=0.46 cfs 0.038 af
Reach 18" Pipe: 18" Pipe	Avg. Flow Depth=0.85' Max Vel=6.26 fps Inflow=6.51 cfs 0.828 af 18.0" Round Pipe n=0.013 L=120.0' S=0.0100 '/' Capacity=10.50 cfs Outflow=6.51 cfs 0.828 af
Reach Phase 1 Post: Phase 1 Post	Inflow=4.47 cfs 0.284 af Outflow=4.47 cfs 0.284 af
Reach Phase 2 Post: Phase 2 Post	Inflow=5.92 cfs 0.715 af Outflow=5.92 cfs 0.715 af
Reach Pond Post: Pond Post	Inflow=9.35 cfs 1.000 af Outflow=9.35 cfs 1.000 af
Reach Swale to Pond 2-2: Swale to	Avg. Flow Depth=0.14' Max Vel=2.35 fps Inflow=0.85 cfs 0.076 af n=0.035 L=165.0' S=0.0727 '/' Capacity=57.26 cfs Outflow=0.83 cfs 0.076 af
Pond CB 1-6: CB 1-6	Peak Elev=41.56' Inflow=6.60 cfs 0.852 af 18.0" Round Culvert n=0.012 L=60.0' S=0.0050 '/' Outflow=6.60 cfs 0.852 af
Pond DMH P 1-2: DMH 1-2	Peak Elev=45.87' Inflow=1.94 cfs 0.144 af 12.0" Round Culvert n=0.012 L=60.0' S=0.0433 '/' Outflow=1.94 cfs 0.144 af
Pond DMH P 1-7: DMH P1-7	Peak Elev=35.64' Inflow=5.88 cfs 0.551 af 24.0" Round Culvert n=0.012 L=84.0' S=0.0068 '/' Outflow=5.88 cfs 0.551 af
Pond DMH P1-1: DMH 1-1	Peak Elev=58.99' Inflow=1.44 cfs 0.106 af 12.0" Round Culvert n=0.012 L=30.0' S=0.0283 '/' Outflow=1.44 cfs 0.106 af

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 102

Pond DMH P1-10: DMH P1-10Peak Elev=41.75' Inflow=3.82 cfs 0.304 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0245 '/ Outflow=3.82 cfs 0.304 af**Pond DMH P1-11: DMH P1-11**Peak Elev=44.41' Inflow=3.82 cfs 0.304 af
12.0" Round Culvert n=0.012 L=52.0' S=0.0404 '/ Outflow=3.82 cfs 0.304 af**Pond DMH P1-12: DMH P1-12**Peak Elev=55.52' Inflow=1.01 cfs 0.097 af
12.0" Round Culvert n=0.012 L=225.0' S=0.0533 '/ Outflow=1.01 cfs 0.097 af**Pond DMH P1-13: DMH P1-13**Peak Elev=39.58' Inflow=6.60 cfs 0.852 af
18.0" Round Culvert n=0.012 L=130.0' S=0.0054 '/ Outflow=6.60 cfs 0.852 af**Pond DMH P1-3: DMH P1-3**Peak Elev=43.55' Inflow=4.31 cfs 0.408 af
15.0" Round Culvert n=0.012 L=142.0' S=0.0408 '/ Outflow=4.31 cfs 0.408 af**Pond DMH P1-4: DMH P1-4**Peak Elev=38.45' Inflow=5.77 cfs 0.533 af
18.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/ Outflow=5.77 cfs 0.533 af**Pond DMH P1-5: DMH P1-5**Peak Elev=36.94' Inflow=2.46 cfs 0.192 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0050 '/ Outflow=2.46 cfs 0.192 af**Pond DMH P1-6: DMH P1-6**Peak Elev=36.59' Inflow=3.19 cfs 0.247 af
12.0" Round Culvert n=0.012 L=116.0' S=0.0050 '/ Outflow=3.19 cfs 0.247 af**Pond DMH P1-8: DMH P 1-8**Peak Elev=39.08' Inflow=5.59 cfs 0.427 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0050 '/ Outflow=5.59 cfs 0.427 af**Pond DMH P1-9: DMH P1-9**Peak Elev=38.24' Inflow=5.59 cfs 0.427 af
15.0" Round Culvert n=0.012 L=144.0' S=0.0049 '/ Outflow=5.59 cfs 0.427 af**Pond DMH P2-1: DMH P2-1**Peak Elev=48.12' Inflow=1.36 cfs 0.105 af
12.0" Round Culvert n=0.012 L=70.0' S=0.0493 '/ Outflow=1.36 cfs 0.105 af**Pond DMH P2-2: DMH P2-2**Peak Elev=48.59' Inflow=2.30 cfs 0.198 af
12.0" Round Culvert n=0.012 L=64.0' S=0.0055 '/ Outflow=2.30 cfs 0.198 af**Pond DMH P2-3: DMH P2-3**Peak Elev=47.16' Inflow=4.62 cfs 0.373 af
12.0" Round Culvert n=0.012 L=110.0' S=0.0290 '/ Outflow=4.62 cfs 0.373 af**Pond DMH P2-4: DMH P2-4**Peak Elev=53.67' Inflow=0.85 cfs 0.076 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0200 '/ Outflow=0.85 cfs 0.076 af**Pond DMH P2-5: DMH P2-5**Peak Elev=36.18' Inflow=0.14 cfs 0.002 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0100 '/ Outflow=0.14 cfs 0.002 af**Pond DW 1-4: DW P1-4**Peak Elev=38.19' Inflow=4.88 cfs 0.268 af
Primary=4.88 cfs 0.268 af Secondary=0.00 cfs 0.000 af Outflow=4.88 cfs 0.268 af**Pond DW P1-2: DW P1-2**Peak Elev=37.84' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/ Outflow=0.00 cfs 0.000 af

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 103

Pond DW P2-3: DW P2-3

Peak Elev=48.34' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond Pond 1-1: Pond 1-1

Peak Elev=38.41' Storage=7,160 cf Inflow=5.88 cfs 0.340 af
Discarded=0.88 cfs 0.341 af Primary=0.00 cfs 0.000 af Outflow=0.88 cfs 0.341 af

Pond Pond 1-2: Pond 1-2

Peak Elev=38.39' Storage=13,492 cf Inflow=10.56 cfs 1.528 af
Discarded=1.53 cfs 1.190 af Primary=4.88 cfs 0.268 af Secondary=2.77 cfs 0.070 af Outflow=9.15 cfs 1.528 af

Pond Pond 1-3: Pond 1-3

Peak Elev=35.47' Storage=10,085 cf Inflow=6.21 cfs 0.641 af
Discarded=0.97 cfs 0.542 af Primary=2.50 cfs 0.100 af Outflow=3.47 cfs 0.641 af

Pond Pond 1-4: Pond 1-4

Peak Elev=37.26' Storage=6,286 cf Inflow=6.66 cfs 0.517 af
Discarded=0.82 cfs 0.440 af Primary=3.17 cfs 0.078 af Outflow=4.00 cfs 0.517 af

Pond Pond 1-5: Pond 1-5

Peak Elev=39.31' Storage=4,910 cf Inflow=6.99 cfs 0.731 af
Discarded=0.99 cfs 0.582 af Primary=4.47 cfs 0.148 af Outflow=5.45 cfs 0.731 af

Pond Pond 2-1: Pond 2-1

Peak Elev=50.54' Storage=1,034 cf Inflow=1.56 cfs 0.160 af
Discarded=0.40 cfs 0.160 af Primary=0.00 cfs 0.000 af Outflow=0.40 cfs 0.160 af

Pond Pond 2-2: Pond 2-2

Peak Elev=39.29' Storage=7,775 cf Inflow=7.57 cfs 0.702 af
Discarded=1.37 cfs 0.699 af Primary=0.14 cfs 0.002 af Outflow=1.51 cfs 0.702 af

**Total Runoff Area = 31.306 ac Runoff Volume = 4.953 af Average Runoff Depth = 1.90"
68.61% Pervious = 21.479 ac 31.39% Impervious = 9.827 ac**

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 104

Summary for Subcatchment Offsite DOT: Offsite DOT

Runoff = 6.51 cfs @ 12.30 hrs, Volume= 0.828 af, Depth> 2.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
35,109	48	Brush, Poor, HSG A
63,906	57	Woods/grass comb., Poor, HSG A
60,586	98	Paved parking & roofs
159,601	71	Weighted Average
99,015	54	62.04% Pervious Area
60,586	98	37.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	1,589	0.0750	1.21		Lag/CN Method, Offsite DOT

Summary for Subcatchment Post 1a: Post 1a

Runoff = 0.82 cfs @ 12.01 hrs, Volume= 0.060 af, Depth> 5.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
1,040	98	Roofs, HSG A
4,198	98	Paved parking, HSG A
738	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
276	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,252	95	Weighted Average
276	39	4.41% Pervious Area
5,976	98	95.59% Impervious Area
738		12.35% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.03		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.6	214	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	239	Total			

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 105

Summary for Subcatchment Post 1b: Post 1b

Runoff = 0.62 cfs @ 12.02 hrs, Volume= 0.046 af, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,621	98	Paved parking, HSG A
911	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
104	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
4,636	97	Weighted Average
104	39	2.24% Pervious Area
4,532	98	97.76% Impervious Area
911		20.10% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.13		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	250	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	290	Total			

Summary for Subcatchment Post 1c: Post 1c

Runoff = 1.72 cfs @ 12.02 hrs, Volume= 0.136 af, Depth> 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
2,478	98	Roofs, HSG A
7,246	98	Paved parking, HSG A
2,929	98	Unconnected pavement, HSG A
6,383	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
10,900	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
29,936	63	Weighted Average
17,283	38	57.73% Pervious Area
12,653	98	42.27% Impervious Area
2,929		23.15% Unconnected

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 106

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.4	58	0.2500	2.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	161	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	239	Total			

Summary for Subcatchment Post 1d: Post 1d

Runoff = 0.18 cfs @ 12.24 hrs, Volume= 0.029 af, Depth> 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Adj	Description
464	98	98	Roofs, HSG A
103	98	98	Paved parking, HSG A
1,507	98	98	Unconnected pavement, HSG A
9,452	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
8,730	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
20,256	44	41	Weighted Average, UI Adjusted
18,182	37	37	89.76% Pervious Area
2,074	98	98	10.24% Impervious Area
1,507			72.66% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0400	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	30	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	70	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.1	200	Total			

Summary for Subcatchment Post 1e: Post 1e

Runoff = 0.03 cfs @ 12.50 hrs, Volume= 0.011 af, Depth> 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 107

Area (sf)	CN	Description
0	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
11,230	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
12,119	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
23,349	38	Weighted Average
23,349	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	66	0.0600	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.1	23	0.3000	3.83		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	89	Total			

Summary for Subcatchment Post 1f: Post 1f

Runoff = 2.30 cfs @ 12.13 hrs, Volume= 0.250 af, Depth> 1.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
20,047	98	Roofs, HSG A
1,165	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
61,155	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
82,367	54	Weighted Average
61,155	39	74.25% Pervious Area
21,212	98	25.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	85	0.3300	0.34		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
5.4	393	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	478	Total			

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 108

Summary for Subcatchment Post 1g: Post 1g

Runoff = 1.52 cfs @ 12.01 hrs, Volume= 0.114 af, Depth> 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
3,873	98	Roofs, HSG A
7,143	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,881	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
15,897	80	Weighted Average
4,881	39	30.70% Pervious Area
11,016	98	69.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	50	0.2500	3.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	250	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	300	Total			

Summary for Subcatchment Post 1h: Post 1h

Runoff = 2.77 cfs @ 12.08 hrs, Volume= 0.264 af, Depth> 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Adj	Description
10,621	98	98	Roofs, HSG A
853	98	98	Paved parking, HSG A
11,421	98	98	Unconnected pavement, HSG A
12,848	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
47,889	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
83,632	55	51	Weighted Average, UI Adjusted
60,737	38	38	72.62% Pervious Area
22,895	98	98	27.38% Impervious Area
11,421			49.88% Unconnected

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 109

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0400	1.29		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.2	60	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	443	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	523	Total			

Summary for Subcatchment Post 1i: Post 1i

Runoff = 0.42 cfs @ 12.01 hrs, Volume= 0.031 af, Depth> 5.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,042	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
0	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
3,042	98	Weighted Average
3,042	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	246	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	266	Total			

Summary for Subcatchment Post 1j: Post 1j

Runoff = 0.28 cfs @ 12.01 hrs, Volume= 0.024 af, Depth> 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 110

Area (sf)	CN	Adj	Description
1,317	98	98	Roofs, HSG A
308	98	98	Paved parking, HSG A
375	98	98	Unconnected pavement, HSG A
243	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
6,648	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
8,891	52	51	Weighted Average, UI Adjusted
6,891	39	39	77.51% Pervious Area
2,000	98	98	22.49% Impervious Area
375			18.75% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.85		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.5	90	0.2000	3.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	24	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.9	124	Total			

Summary for Subcatchment Post 1k: Post 1k

Runoff = 0.95 cfs @ 12.05 hrs, Volume= 0.086 af, Depth> 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
7,078	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
24,611	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
31,689	52	Weighted Average
24,611	39	77.66% Pervious Area
7,078	98	22.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	35	0.4000	3.64		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.8	165	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	200	Total			

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 111

Summary for Subcatchment Post 1l: Post 1l

Runoff = 1.50 cfs @ 12.08 hrs, Volume= 0.125 af, Depth> 4.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
4,807	98	Roofs, HSG A
7,508	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
2,292	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
14,607	89	Weighted Average
2,292	39	15.69% Pervious Area
12,315	98	84.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	60	0.0500	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.9	211	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.5	271	Total			

Summary for Subcatchment Post 1m: Post 1m

Runoff = 1.59 cfs @ 12.04 hrs, Volume= 0.142 af, Depth> 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Adj	Description
8,658	98	98	Roofs, HSG A
256	98	98	Paved parking, HSG A
2,928	98	98	Unconnected pavement, HSG A
11,179	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
31,891	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
54,912	51	50	Weighted Average, UI Adjusted
43,070	38	38	78.43% Pervious Area
11,842	98	98	21.57% Impervious Area
2,928			24.73% Unconnected

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 112

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.85		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.9	130	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	109	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.6	249	Total			

Summary for Subcatchment Post 1n: Post 1n

Runoff = 0.97 cfs @ 12.02 hrs, Volume= 0.077 af, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
3,763	98	Roofs, HSG A
3,354	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
9,449	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
16,566	64	Weighted Average
9,449	39	57.04% Pervious Area
7,117	98	42.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	216	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.2	236	Total			

Summary for Subcatchment Post 1o: Post 1o

Runoff = 1.50 cfs @ 12.03 hrs, Volume= 0.115 af, Depth> 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 113

Area (sf)	CN	Description
3,247	98	Roofs, HSG A
7,974	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,253	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
14,474	85	Weighted Average
3,253	39	22.47% Pervious Area
11,221	98	77.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	60	0.0150	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	131	0.0150	2.49		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	191	Total			

Summary for Subcatchment Post 1p: Post 1p

Runoff = 0.74 cfs @ 12.01 hrs, Volume= 0.054 af, Depth> 4.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
1,438	98	Roofs, HSG A
3,892	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,254	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,584	87	Weighted Average
1,254	39	19.05% Pervious Area
5,330	98	80.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.4	107	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.7	127	Total			

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 114

Summary for Subcatchment Post 1q: Post 1q

Runoff = 0.50 cfs @ 12.00 hrs, Volume= 0.037 af, Depth> 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
1,363	98	Roofs, HSG A
2,205	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,040	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
4,608	85	Weighted Average
1,040	39	22.57% Pervious Area
3,568	98	77.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	55	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.4	75	Total			

Summary for Subcatchment Post 1r: Post 1r

Runoff = 0.82 cfs @ 12.01 hrs, Volume= 0.061 af, Depth> 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
520	98	Roofs, HSG A
5,480	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
804	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,804	91	Weighted Average
804	39	11.82% Pervious Area
6,000	98	88.18% Impervious Area

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 115

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.0	149	0.0150	2.49		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.1	169	Total			

Summary for Subcatchment Post 1s: Post 1s

Runoff = 0.32 cfs @ 12.01 hrs, Volume= 0.029 af, Depth> 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
1,915	98	Roofs, HSG A
344	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
10,106	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,365	50	Weighted Average
10,106	39	81.73% Pervious Area
2,259	98	18.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	40	0.4000	3.74		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	78	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	118	Total			

Summary for Subcatchment Post 1t: Post 1t

Runoff = 2.70 cfs @ 12.02 hrs, Volume= 0.204 af, Depth> 4.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 116

Area (sf)	CN	Description
5,398	98	Roofs, HSG A
14,627	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,988	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
24,013	88	Weighted Average
3,988	39	16.61% Pervious Area
20,025	98	83.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.2	284	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.5	304	Total			

Summary for Subcatchment Post 1u: Post 1u

Runoff = 2.93 cfs @ 12.03 hrs, Volume= 0.223 af, Depth> 4.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
8,747	98	Roofs, HSG A
13,050	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
5,305	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
27,102	86	Weighted Average
5,305	39	19.57% Pervious Area
21,797	98	80.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.1	30	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	308	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.0	358	Total			

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 117

Summary for Subcatchment Post 1v: Post 1v

Runoff = 1.39 cfs @ 12.01 hrs, Volume= 0.101 af, Depth> 4.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
3,517	98	Roofs, HSG A
6,504	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
820	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
10,841	94	Weighted Average
820	39	7.56% Pervious Area
10,021	98	92.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	30	0.4000	3.53		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.1	30	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	184	0.0600	4.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	244	Total			

Summary for Subcatchment Post 1w: Post 1w

Runoff = 1.43 cfs @ 12.01 hrs, Volume= 0.105 af, Depth> 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
3,296	98	Roofs, HSG A
7,074	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,699	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,069	90	Weighted Average
1,699	39	14.08% Pervious Area
10,370	98	85.92% Impervious Area

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 118

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	230	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	250	Total			

Summary for Subcatchment Post 1x: Post 1x

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.044 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,116	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
8,382	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
16,515	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
28,013	45	Weighted Average
24,897	38	88.88% Pervious Area
3,116	98	11.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	60	0.2500	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	221	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.9	281	Total			

Summary for Subcatchment Post 1y: Post 1y

Runoff = 0.73 cfs @ 12.01 hrs, Volume= 0.053 af, Depth> 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 119

Area (sf)	CN	Description
1,040	98	Roofs, HSG A
4,234	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
62	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
5,336	97	Weighted Average
62	39	1.16% Pervious Area
5,274	98	98.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	249	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	269	Total			

Summary for Subcatchment Post 1z: Post 1z

Runoff = 1.10 cfs @ 12.01 hrs, Volume= 0.091 af, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
7,216	98	Roofs, HSG A
768	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
17,273	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
25,257	58	Weighted Average
17,273	39	68.39% Pervious Area
7,984	98	31.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.2	27	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.1	97	Total			

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 120

Summary for Subcatchment Post 2a: Post 2a

Runoff = 0.75 cfs @ 12.01 hrs, Volume= 0.054 af, Depth> 5.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
1,014	98	Roofs, HSG A
4,022	98	Paved parking, HSG A
339	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
173	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
5,548	96	Weighted Average
173	39	3.12% Pervious Area
5,375	98	96.88% Impervious Area
339		6.31% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0800	1.71		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.6	222	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	242	Total			

Summary for Subcatchment Post 2b: Post 2b

Runoff = 0.54 cfs @ 12.01 hrs, Volume= 0.040 af, Depth> 5.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,880	98	Paved parking, HSG A
55	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
0	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
3,935	98	Weighted Average
3,935	98	100.00% Impervious Area
55		1.40% Unconnected

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 121

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0800	1.71		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	239	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.9	259	Total			

Summary for Subcatchment Post 2c: Post 2c

Runoff = 2.32 cfs @ 12.02 hrs, Volume= 0.175 af, Depth> 4.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
5,680	98	Roofs, HSG A
11,517	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,382	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
20,579	88	Weighted Average
3,382	39	16.43% Pervious Area
17,197	98	83.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.2	208	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.5	228	Total			

Summary for Subcatchment Post 2d: Post 2d

Runoff = 2.11 cfs @ 12.02 hrs, Volume= 0.158 af, Depth> 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 122

Area (sf)	CN	Description
4,913	98	Roofs, HSG A
10,510	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,159	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
19,582	85	Weighted Average
4,159	39	21.24% Pervious Area
15,423	98	78.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0600	1.52		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.0	232	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.2	252	Total			

Summary for Subcatchment Post 2e: Post 2e

Runoff = 0.36 cfs @ 12.18 hrs, Volume= 0.040 af, Depth> 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
1,444	98	Roofs, HSG A
2,265	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,533	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
8,242	66	Weighted Average
4,533	39	55.00% Pervious Area
3,709	98	45.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	80	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.2	36	0.2500	3.50		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.1	300	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.6	416	Total			

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 123

Summary for Subcatchment Post 2f: Post 2f

Runoff = 1.08 cfs @ 12.04 hrs, Volume= 0.117 af, Depth> 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Adj	Description
6,321	98	98	Roofs, HSG A
27	98	98	Paved parking, HSG A
1,685	98	98	Unconnected pavement, HSG A
47,632	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
31,396	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
87,061	43	42	Weighted Average, UI Adjusted
79,028	37	37	90.77% Pervious Area
8,033	98	98	9.23% Impervious Area
1,685			20.98% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	32	0.0200	1.08		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	59	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.9	165	0.4000	3.16		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.3	256	Total			

Summary for Subcatchment Post 2g: Post 2g

Runoff = 0.22 cfs @ 12.04 hrs, Volume= 0.028 af, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
1,182	98	Roofs, HSG A
357	98	Paved parking, HSG A
121	98	Unconnected pavement, HSG A
13,159	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
11,547	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
26,366	41	Weighted Average
24,706	37	93.70% Pervious Area
1,660	98	6.30% Impervious Area
121		7.29% Unconnected

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 124

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	41	0.0800	1.97		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.2	255	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.5	296	Total			

Summary for Subcatchment Post 2h: Post 2h

Runoff = 0.65 cfs @ 12.01 hrs, Volume= 0.048 af, Depth> 3.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
1,807	98	Roofs, HSG A
2,854	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,902	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,563	81	Weighted Average
1,902	39	28.98% Pervious Area
4,661	98	71.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0600	1.83		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	67	0.0600	3.94		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.8	117	Total			

Summary for Subcatchment Post 2i: Post 2i

Runoff = 1.34 cfs @ 12.12 hrs, Volume= 0.147 af, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 125

Area (sf)	CN	Description
11,373	98	Roofs, HSG A
877	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
40,393	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
52,643	53	Weighted Average
40,393	39	76.73% Pervious Area
12,250	98	23.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.4000	0.25		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.1	28	0.4000	4.43		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.5	296	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	424	Total			

Summary for Subcatchment Post 2j: Post 2j

Runoff = 0.07 cfs @ 12.03 hrs, Volume= 0.011 af, Depth> 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
459	98	Roofs, HSG A
90	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
4,518	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
7,047	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,114	41	Weighted Average
11,565	38	95.47% Pervious Area
549	98	4.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	20	0.3300	0.26		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
0.5	131	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.8	151	Total			

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 126

Summary for Subcatchment Post 2k: Post 2k

Runoff = 0.49 cfs @ 12.05 hrs, Volume= 0.043 af, Depth> 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
3,713	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
8,633	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,346	57	Weighted Average
8,633	39	69.93% Pervious Area
3,713	98	30.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
3.5	207	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.6	227	Total			

Summary for Subcatchment Post 3a: Post 3a

Runoff = 0.96 cfs @ 12.05 hrs, Volume= 0.081 af, Depth> 1.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
0	98	Roofs, HSG A
0	98	Paved parking, HSG A
7,192	98	Unconnected pavement, HSG A
769	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
13,267	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
21,228	59	Weighted Average
14,036	39	66.12% Pervious Area
7,192	98	33.88% Impervious Area
7,192		100.00% Unconnected

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 127

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0500	1.42		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.7	725	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	745	Total			

Summary for Subcatchment Post 3b: Post 3b

Runoff = 5.33 cfs @ 12.14 hrs, Volume= 0.632 af, Depth> 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
16,932	98	Roofs, HSG A
4,544	98	Paved parking, HSG A
3,956	98	Unconnected pavement, HSG A
185,603	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
110,357	39	>75% Grass cover, Good, HSG A
24,197	98	Water Surface, HSG A
345,589	46	Weighted Average
295,960	37	85.64% Pervious Area
49,629	98	14.36% Impervious Area
3,956		7.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	20	0.3300	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
1.7	165	0.1000	1.58		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	416	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
9.9	601	Total			

Summary for Subcatchment Post 3c: Post 3c

Runoff = 0.46 cfs @ 12.03 hrs, Volume= 0.038 af, Depth> 2.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 128

Area (sf)	CN	Description
1,640	98	Roofs, HSG A
1,797	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
886	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,487	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
8,810	62	Weighted Average
5,373	39	60.99% Pervious Area
3,437	98	39.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0400	1.40		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.7	102	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.1	132	Total			

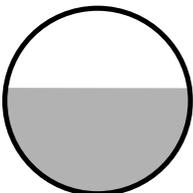
Summary for Reach 18" Pipe: 18" Pipe

Inflow Area = 3.664 ac, 37.96% Impervious, Inflow Depth > 2.71" for 25-Year event
 Inflow = 6.51 cfs @ 12.30 hrs, Volume= 0.828 af
 Outflow = 6.51 cfs @ 12.31 hrs, Volume= 0.828 af, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 6.26 fps, Min. Travel Time= 0.3 min
 Avg. Velocity = 2.47 fps, Avg. Travel Time= 0.8 min

Peak Storage= 125 cf @ 12.31 hrs
 Average Depth at Peak Storage= 0.85'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.50 cfs

18.0" Round Pipe
 n= 0.013
 Length= 120.0' Slope= 0.0100 '/'
 Inlet Invert= 48.91', Outlet Invert= 47.71'



12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 129

Summary for Reach Phase 1 Post: Phase 1 Post

Inflow Area = 17.032 ac, 39.73% Impervious, Inflow Depth > 0.20" for 25-Year event
Inflow = 4.47 cfs @ 12.32 hrs, Volume= 0.284 af
Outflow = 4.47 cfs @ 12.32 hrs, Volume= 0.284 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Phase 2 Post: Phase 2 Post

Inflow Area = 14.274 ac, 21.44% Impervious, Inflow Depth > 0.60" for 25-Year event
Inflow = 5.92 cfs @ 12.12 hrs, Volume= 0.715 af
Outflow = 5.92 cfs @ 12.12 hrs, Volume= 0.715 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Pond Post: Pond Post

Inflow Area = 31.306 ac, 31.39% Impervious, Inflow Depth > 0.38" for 25-Year event
Inflow = 9.35 cfs @ 12.12 hrs, Volume= 1.000 af
Outflow = 9.35 cfs @ 12.12 hrs, Volume= 1.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Swale to Pond 2-2: Swale to Pond 2-2

Inflow Area = 0.756 ac, 19.20% Impervious, Inflow Depth > 1.21" for 25-Year event
Inflow = 0.85 cfs @ 12.02 hrs, Volume= 0.076 af
Outflow = 0.83 cfs @ 12.04 hrs, Volume= 0.076 af, Atten= 3%, Lag= 1.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Max. Velocity= 2.35 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 0.82 fps, Avg. Travel Time= 3.4 min

Peak Storage= 58 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 1.00' Flow Area= 6.7 sf, Capacity= 57.26 cfs

10.00' x 1.00' deep Parabolic Channel, n= 0.035 High grass
Length= 165.0' Slope= 0.0727 '
Inlet Invert= 50.00', Outlet Invert= 38.00'



12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 130

Summary for Pond CB 1-6: CB 1-6

Inflow Area = 3.868 ac, 37.14% Impervious, Inflow Depth > 2.64" for 25-Year event
 Inflow = 6.60 cfs @ 12.31 hrs, Volume= 0.852 af
 Outflow = 6.60 cfs @ 12.31 hrs, Volume= 0.852 af, Atten= 0%, Lag= 0.0 min
 Primary = 6.60 cfs @ 12.31 hrs, Volume= 0.852 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 41.56' @ 12.31 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	40.00'	18.0" Round 18" Culvert L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.00' / 39.70' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=6.58 cfs @ 12.31 hrs HW=41.55' TW=39.57' (Dynamic Tailwater)
 ↑1=18" Culvert (Barrel Controls 6.58 cfs @ 4.47 fps)

Summary for Pond DMH P 1-2: DMH 1-2

Inflow Area = 0.435 ac, 74.23% Impervious, Inflow Depth > 3.99" for 25-Year event
 Inflow = 1.94 cfs @ 12.01 hrs, Volume= 0.144 af
 Outflow = 1.94 cfs @ 12.01 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.94 cfs @ 12.01 hrs, Volume= 0.144 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 45.87' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round 12" Culvert L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 42.50' S= 0.0433 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.86 cfs @ 12.01 hrs HW=45.85' TW=43.46' (Dynamic Tailwater)
 ↑1=12" Culvert (Inlet Controls 1.86 cfs @ 2.95 fps)

Summary for Pond DMH P 1-7: DMH P1-7

Inflow Area = 14.636 ac, 36.58% Impervious, Inflow Depth > 0.45" for 25-Year event
 Inflow = 5.88 cfs @ 12.32 hrs, Volume= 0.551 af
 Outflow = 5.88 cfs @ 12.32 hrs, Volume= 0.551 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.88 cfs @ 12.32 hrs, Volume= 0.551 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 35.64' @ 12.67 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.32'	24.0" Round Culvert L= 84.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 131

Inlet / Outlet Invert= 34.32' / 33.75' S= 0.0068 '/' Cc= 0.900
n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=5.69 cfs @ 12.32 hrs HW=35.44' TW=34.63' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 5.69 cfs @ 4.53 fps)

Summary for Pond DMH P1-1: DMH 1-1

Inflow Area = 0.250 ac, 96.51% Impervious, Inflow Depth > 5.09" for 25-Year event
Inflow = 1.44 cfs @ 12.01 hrs, Volume= 0.106 af
Outflow = 1.44 cfs @ 12.01 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.44 cfs @ 12.01 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 58.99' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	58.35'	12.0" Round 12" Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.35' / 57.50' S= 0.0283 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.38 cfs @ 12.01 hrs HW=58.97' TW=36.49' (Dynamic Tailwater)

↑1=12" Culvert (Inlet Controls 1.38 cfs @ 2.68 fps)

Summary for Pond DMH P1-10: DMH P1-10

Inflow Area = 1.292 ac, 51.16% Impervious, Inflow Depth > 2.83" for 25-Year event
Inflow = 3.82 cfs @ 12.01 hrs, Volume= 0.304 af
Outflow = 3.82 cfs @ 12.01 hrs, Volume= 0.304 af, Atten= 0%, Lag= 0.0 min
Primary = 3.82 cfs @ 12.01 hrs, Volume= 0.304 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 41.75' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	40.70'	15.0" Round Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.70' / 38.00' S= 0.0245 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.67 cfs @ 12.01 hrs HW=41.72' TW=39.15' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 3.67 cfs @ 3.43 fps)

Summary for Pond DMH P1-11: DMH P1-11

Inflow Area = 1.292 ac, 51.16% Impervious, Inflow Depth > 2.83" for 25-Year event
Inflow = 3.82 cfs @ 12.01 hrs, Volume= 0.304 af
Outflow = 3.82 cfs @ 12.01 hrs, Volume= 0.304 af, Atten= 0%, Lag= 0.0 min
Primary = 3.82 cfs @ 12.01 hrs, Volume= 0.304 af

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 132

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 44.41' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.90'	12.0" Round Culvert L= 52.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.90' / 40.80' S= 0.0404 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.67 cfs @ 12.01 hrs HW=44.34' TW=41.72' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 3.67 cfs @ 4.67 fps)

Summary for Pond DMH P1-12: DMH P1-12

Inflow Area = 0.766 ac, 25.16% Impervious, Inflow Depth > 1.53" for 25-Year event
 Inflow = 1.01 cfs @ 12.03 hrs, Volume= 0.097 af
 Outflow = 1.01 cfs @ 12.03 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.01 cfs @ 12.03 hrs, Volume= 0.097 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 55.52' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	55.00'	12.0" Round Culvert L= 225.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 55.00' / 43.00' S= 0.0533 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.98 cfs @ 12.03 hrs HW=55.51' TW=44.29' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 0.98 cfs @ 2.43 fps)

Summary for Pond DMH P1-13: DMH P1-13

Inflow Area = 3.868 ac, 37.14% Impervious, Inflow Depth > 2.64" for 25-Year event
 Inflow = 6.60 cfs @ 12.31 hrs, Volume= 0.852 af
 Outflow = 6.60 cfs @ 12.31 hrs, Volume= 0.852 af, Atten= 0%, Lag= 0.0 min
 Primary = 6.60 cfs @ 12.31 hrs, Volume= 0.852 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 39.58' @ 12.31 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.10'	18.0" Round Culvert L= 130.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.10' / 37.40' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=6.58 cfs @ 12.31 hrs HW=39.57' TW=38.39' (Dynamic Tailwater)
 ↑1=Culvert (Barrel Controls 6.58 cfs @ 4.72 fps)

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 133

Summary for Pond DMH P1-3: DMH P1-3

Inflow Area = 2.355 ac, 36.03% Impervious, Inflow Depth > 2.08" for 25-Year event
Inflow = 4.31 cfs @ 12.05 hrs, Volume= 0.408 af
Outflow = 4.31 cfs @ 12.05 hrs, Volume= 0.408 af, Atten= 0%, Lag= 0.0 min
Primary = 4.31 cfs @ 12.05 hrs, Volume= 0.408 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 43.55' @ 12.05 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.40'	15.0" Round Culvert L= 142.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.40' / 36.60' S= 0.0408 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.30 cfs @ 12.05 hrs HW=43.55' TW=38.08' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 4.30 cfs @ 3.64 fps)

Summary for Pond DMH P1-4: DMH P1-4

Inflow Area = 8.538 ac, 35.38% Impervious, Inflow Depth > 0.75" for 25-Year event
Inflow = 5.77 cfs @ 12.06 hrs, Volume= 0.533 af
Outflow = 5.77 cfs @ 12.06 hrs, Volume= 0.533 af, Atten= 0%, Lag= 0.0 min
Primary = 5.77 cfs @ 12.06 hrs, Volume= 0.533 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 38.45' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	18.0" Round Culvert L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.00' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=4.42 cfs @ 12.06 hrs HW=38.09' TW=37.73' (Dynamic Tailwater)
↑1=Culvert (Outlet Controls 4.42 cfs @ 2.94 fps)

Summary for Pond DMH P1-5: DMH P1-5

Inflow Area = 0.713 ac, 59.08% Impervious, Inflow Depth > 3.24" for 25-Year event
Inflow = 2.46 cfs @ 12.02 hrs, Volume= 0.192 af
Outflow = 2.46 cfs @ 12.02 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.0 min
Primary = 2.46 cfs @ 12.02 hrs, Volume= 0.192 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.94' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.35'	12.0" Round 12" Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 134

Inlet / Outlet Invert= 35.35' / 35.10' S= 0.0050 '/ Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.48 cfs @ 12.02 hrs HW=36.65' TW=36.49' (Dynamic Tailwater)

↑1=12" Culvert (Inlet Controls 1.48 cfs @ 1.89 fps)

Summary for Pond DMH P1-6: DMH P1-6

Inflow Area = 0.864 ac, 62.91% Impervious, Inflow Depth > 3.43" for 25-Year event
Inflow = 3.19 cfs @ 12.02 hrs, Volume= 0.247 af
Outflow = 3.19 cfs @ 12.02 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min
Primary = 3.19 cfs @ 12.02 hrs, Volume= 0.247 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.59' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	12.0" Round 12" Culvert L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 34.42' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.05 cfs @ 12.02 hrs HW=36.50' TW=35.16' (Dynamic Tailwater)

↑1=12" Culvert (Barrel Controls 3.05 cfs @ 3.89 fps)

Summary for Pond DMH P1-8: DMH P 1-8

Inflow Area = 1.173 ac, 81.82% Impervious, Inflow Depth > 4.36" for 25-Year event
Inflow = 5.59 cfs @ 12.03 hrs, Volume= 0.427 af
Outflow = 5.59 cfs @ 12.03 hrs, Volume= 0.427 af, Atten= 0%, Lag= 0.0 min
Primary = 5.59 cfs @ 12.03 hrs, Volume= 0.427 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 39.08' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.35'	15.0" Round 15" Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.35' / 34.80' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.69 cfs @ 12.03 hrs HW=38.61' TW=38.10' (Dynamic Tailwater)

↑1=15" Culvert (Outlet Controls 3.69 cfs @ 3.01 fps)

Summary for Pond DMH P1-9: DMH P1-9

Inflow Area = 1.173 ac, 81.82% Impervious, Inflow Depth > 4.36" for 25-Year event
Inflow = 5.59 cfs @ 12.03 hrs, Volume= 0.427 af
Outflow = 5.59 cfs @ 12.03 hrs, Volume= 0.427 af, Atten= 0%, Lag= 0.0 min
Primary = 5.59 cfs @ 12.03 hrs, Volume= 0.427 af

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 135

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 38.24' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	15.0" Round Culvert L= 144.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.70' / 34.00' S= 0.0049 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.84 cfs @ 12.03 hrs HW=38.10' TW=37.04' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 4.84 cfs @ 3.94 fps)

Summary for Pond DMH P2-1: DMH P2-1

Inflow Area = 0.496 ac, 45.65% Impervious, Inflow Depth > 2.55" for 25-Year event
 Inflow = 1.36 cfs @ 12.01 hrs, Volume= 0.105 af
 Outflow = 1.36 cfs @ 12.01 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.36 cfs @ 12.01 hrs, Volume= 0.105 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.12' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	47.45'	12.0" Round 12" Culvert L= 70.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 47.45' / 44.00' S= 0.0493 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.31 cfs @ 12.01 hrs HW=48.10' TW=38.61' (Dynamic Tailwater)
 ↑1=12" Culvert (Inlet Controls 1.31 cfs @ 2.42 fps)

Summary for Pond DMH P2-2: DMH P2-2

Inflow Area = 2.921 ac, 24.27% Impervious, Inflow Depth > 0.81" for 25-Year event
 Inflow = 2.30 cfs @ 12.02 hrs, Volume= 0.198 af
 Outflow = 2.30 cfs @ 12.02 hrs, Volume= 0.198 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.30 cfs @ 12.02 hrs, Volume= 0.198 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.59' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	47.60'	12.0" Round 12" Culvert L= 64.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.60' / 47.25' S= 0.0055 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.21 cfs @ 12.02 hrs HW=48.56' TW=47.06' (Dynamic Tailwater)
 ↑1=12" Culvert (Barrel Controls 2.21 cfs @ 3.65 fps)

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 136

Summary for Pond DMH P2-3: DMH P2-3

Inflow Area = 3.393 ac, 32.52% Impervious, Inflow Depth > 1.32" for 25-Year event
Inflow = 4.62 cfs @ 12.02 hrs, Volume= 0.373 af
Outflow = 4.62 cfs @ 12.02 hrs, Volume= 0.373 af, Atten= 0%, Lag= 0.0 min
Primary = 4.62 cfs @ 12.02 hrs, Volume= 0.373 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 47.16' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.19'	12.0" Round 12" Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.19' / 42.00' S= 0.0290 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.42 cfs @ 12.02 hrs HW=47.06' TW=38.64' (Dynamic Tailwater)
↑**1=12" Culvert** (Inlet Controls 4.42 cfs @ 5.63 fps)

Summary for Pond DMH P2-4: DMH P2-4

Inflow Area = 0.756 ac, 19.20% Impervious, Inflow Depth > 1.21" for 25-Year event
Inflow = 0.85 cfs @ 12.02 hrs, Volume= 0.076 af
Outflow = 0.85 cfs @ 12.02 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.02 hrs, Volume= 0.076 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 53.67' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	53.20'	12.0" Round 12" Culvert L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.20' / 51.20' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.82 cfs @ 12.02 hrs HW=53.66' TW=50.14' (Dynamic Tailwater)
↑**1=12" Culvert** (Inlet Controls 0.82 cfs @ 2.31 fps)

Summary for Pond DMH P2-5: DMH P2-5

Inflow Area = 5.854 ac, 30.00% Impervious, Inflow Depth = 0.01" for 25-Year event
Inflow = 0.14 cfs @ 12.51 hrs, Volume= 0.002 af
Outflow = 0.14 cfs @ 12.51 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Primary = 0.14 cfs @ 12.51 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.18' @ 12.51 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.00'	12.0" Round 12" Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 137

Inlet / Outlet Invert= 36.00' / 35.60' S= 0.0100 '/ Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.14 cfs @ 12.51 hrs HW=36.18' TW=0.00' (Dynamic Tailwater)

↑1=12" Culvert (Barrel Controls 0.14 cfs @ 2.18 fps)

Summary for Pond DW 1-4: DW P1-4

Inflow Area = 13.667 ac, 34.60% Impervious, Inflow Depth = 0.24" for 25-Year event
Inflow = 4.88 cfs @ 12.33 hrs, Volume= 0.268 af
Outflow = 4.88 cfs @ 12.33 hrs, Volume= 0.268 af, Atten= 0%, Lag= 0.0 min
Primary = 4.88 cfs @ 12.33 hrs, Volume= 0.268 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 38.19' @ 12.34 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.50'	12.0" Round Culvert L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.50' / 34.42' S= 0.0093 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	38.25'	20.0' long x 2.0' 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=4.80 cfs @ 12.33 hrs HW=38.11' TW=35.44' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 4.80 cfs @ 6.11 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.50' TW=0.00' (Dynamic Tailwater)

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

Summary for Pond DW P1-2: DW P1-2

Inflow Area = 5.848 ac, 32.31% Impervious, Inflow Depth = 0.00" for 25-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.84' @ 15.20 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	15.0" Round 12" Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.50' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 138

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.70' TW=36.50' (Dynamic Tailwater)

↑1=12" Culvert (Controls 0.00 cfs)

Summary for Pond DW P2-3: DW P2-3

Inflow Area = 2.282 ac, 11.82% Impervious, Inflow Depth = 0.00" for 25-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.34' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	48.30'	12.0" Round 12" Culvert L= 120.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.30' / 47.70' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=48.30' TW=47.60' (Dynamic Tailwater)

↑1=12" Culvert (Controls 0.00 cfs)

Summary for Pond Pond 1-1: Pond 1-1

Inflow Area = 5.848 ac, 32.31% Impervious, Inflow Depth > 0.70" for 25-Year event
 Inflow = 5.88 cfs @ 12.10 hrs, Volume= 0.340 af
 Outflow = 0.88 cfs @ 12.67 hrs, Volume= 0.341 af, Atten= 85%, Lag= 34.6 min
 Discarded = 0.88 cfs @ 12.67 hrs, Volume= 0.341 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 38.41' @ 12.67 hrs Surf.Area= 4,593 sf Storage= 7,160 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 75.0 min (825.6 - 750.6)

Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	10,322 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	1,891	0	0
38.00	3,608	5,499	5,499
39.00	6,038	4,823	10,322

Device	Routing	Invert	Outlet Devices
#1	Discarded	36.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	38.50'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 139

Discarded OutFlow Max=0.88 cfs @ 12.67 hrs HW=38.40' (Free Discharge)

↳1=Exfiltration (Exfiltration Controls 0.88 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=36.70' (Dynamic Tailwater)

↳2=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond Pond 1-2: Pond 1-2

Inflow Area = 13.667 ac, 34.60% Impervious, Inflow Depth > 1.34" for 25-Year event
 Inflow = 10.56 cfs @ 12.07 hrs, Volume= 1.528 af
 Outflow = 9.15 cfs @ 12.34 hrs, Volume= 1.528 af, Atten= 13%, Lag= 16.4 min
 Discarded = 1.53 cfs @ 12.36 hrs, Volume= 1.190 af
 Primary = 4.88 cfs @ 12.33 hrs, Volume= 0.268 af
 Secondary = 2.77 cfs @ 12.36 hrs, Volume= 0.070 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 38.39' @ 12.36 hrs Surf.Area= 7,991 sf Storage= 13,492 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 54.6 min (837.2 - 782.6)

Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	16,448 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	3,158	0	0
38.00	7,320	10,478	10,478
38.75	8,599	5,970	16,448

Device	Routing	Invert	Outlet Devices
#1	Discarded	36.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	38.00'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	38.25'	20.0' long x 2.0' 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Discarded OutFlow Max=1.53 cfs @ 12.36 hrs HW=38.39' (Free Discharge)

↳1=Exfiltration (Exfiltration Controls 1.53 cfs)

Primary OutFlow Max=4.52 cfs @ 12.33 hrs HW=38.39' TW=38.11' (Dynamic Tailwater)

↳2=Orifice/Grate (Weir Controls 4.52 cfs @ 1.93 fps)

Secondary OutFlow Max=2.74 cfs @ 12.36 hrs HW=38.39' TW=0.00' (Dynamic Tailwater)

↳3=Broad-Crested Rectangular Weir (Weir Controls 2.74 cfs @ 0.96 fps)

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 140

Summary for Pond Pond 1-3: Pond 1-3

Inflow Area = 15.076 ac, 36.77% Impervious, Inflow Depth > 0.51" for 25-Year event
 Inflow = 6.21 cfs @ 12.32 hrs, Volume= 0.641 af
 Outflow = 3.47 cfs @ 12.70 hrs, Volume= 0.641 af, Atten= 44%, Lag= 23.0 min
 Discarded = 0.97 cfs @ 12.70 hrs, Volume= 0.542 af
 Primary = 2.50 cfs @ 12.70 hrs, Volume= 0.100 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 35.47' @ 12.70 hrs Surf.Area= 5,059 sf Storage= 10,085 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 68.3 min (822.7 - 754.4)

Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	12,888 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,114	0	0
36.00	5,478	12,888	12,888

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	35.25'	10.0' long x 3.0' 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			
Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68			
2.72 2.81 2.92 2.97 3.07 3.32			

Discarded OutFlow Max=0.97 cfs @ 12.70 hrs HW=35.47' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=2.49 cfs @ 12.70 hrs HW=35.47' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 2.49 cfs @ 1.14 fps)

Summary for Pond Pond 1-4: Pond 1-4

Inflow Area = 1.753 ac, 65.22% Impervious, Inflow Depth > 3.54" for 25-Year event
 Inflow = 6.66 cfs @ 12.02 hrs, Volume= 0.517 af
 Outflow = 4.00 cfs @ 12.12 hrs, Volume= 0.517 af, Atten= 40%, Lag= 5.7 min
 Discarded = 0.82 cfs @ 12.12 hrs, Volume= 0.440 af
 Primary = 3.17 cfs @ 12.12 hrs, Volume= 0.078 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 37.26' @ 12.12 hrs Surf.Area= 4,307 sf Storage= 6,286 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 70.9 min (820.5 - 749.6)

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 142

Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88
2.85 3.07 3.20 3.32

Discarded OutFlow Max=0.98 cfs @ 12.12 hrs HW=39.30' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.98 cfs)

Primary OutFlow Max=4.33 cfs @ 12.12 hrs HW=39.30' TW=37.20' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Weir Controls 4.33 cfs @ 1.42 fps)

Summary for Pond Pond 2-1: Pond 2-1

Inflow Area = 2.282 ac, 11.82% Impervious, Inflow Depth > 0.84" for 25-Year event
Inflow = 1.56 cfs @ 12.04 hrs, Volume= 0.160 af
Outflow = 0.40 cfs @ 12.45 hrs, Volume= 0.160 af, Atten= 75%, Lag= 24.7 min
Discarded = 0.40 cfs @ 12.45 hrs, Volume= 0.160 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 50.54' @ 12.45 hrs Surf.Area= 2,077 sf Storage= 1,034 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 11.2 min (819.7 - 808.5)

Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	9,380 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
50.00	1,727	0	0
52.00	3,014	4,741	4,741
53.00	6,264	4,639	9,380

Device	Routing	Invert	Outlet Devices
#1	Primary	51.50'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	50.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.40 cfs @ 12.45 hrs HW=50.54' (Free Discharge)

↑2=Exfiltration (Exfiltration Controls 0.40 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.00' TW=48.30' (Dynamic Tailwater)

↑1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond Pond 2-2: Pond 2-2

Inflow Area = 5.854 ac, 30.00% Impervious, Inflow Depth > 1.44" for 25-Year event
Inflow = 7.57 cfs @ 12.03 hrs, Volume= 0.702 af
Outflow = 1.51 cfs @ 12.51 hrs, Volume= 0.702 af, Atten= 80%, Lag= 29.2 min
Discarded = 1.37 cfs @ 12.51 hrs, Volume= 0.699 af
Primary = 0.14 cfs @ 12.51 hrs, Volume= 0.002 af

12013 Post - Offsite

Type III 24-hr 25-Year Rainfall=5.50"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 143

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 39.29' @ 12.51 hrs Surf.Area= 7,145 sf Storage= 7,775 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 34.3 min (795.7 - 761.3)

Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	13,302 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	4,933	0	0
40.00	8,369	13,302	13,302

Device	Routing	Invert	Outlet Devices
#1	Primary	39.50'	10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	38.00'	8.270 in/hr Exfiltration over Surface area
#3	Primary	39.25'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=1.37 cfs @ 12.51 hrs HW=39.29' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 1.37 cfs)

Primary OutFlow Max=0.14 cfs @ 12.51 hrs HW=39.29' TW=36.18' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
 ↳ **3=Orifice/Grate** (Weir Controls 0.14 cfs @ 0.63 fps)

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 144

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentOffsite DOT: Offsite DOT	Runoff Area=159,601 sf 37.96% Impervious Runoff Depth>3.58" Flow Length=1,589' Slope=0.0750 '/' Tc=21.8 min CN=71 Runoff=8.81 cfs 1.093 af
SubcatchmentPost 1a: Post 1a	Runoff Area=6,252 sf 95.59% Impervious Runoff Depth>6.21" Flow Length=239' Tc=1.0 min CN=95 Runoff=1.01 cfs 0.074 af
SubcatchmentPost 1b: Post 1b	Runoff Area=4,636 sf 97.76% Impervious Runoff Depth>6.33" Flow Length=290' Tc=1.3 min CN=97 Runoff=0.75 cfs 0.056 af
SubcatchmentPost 1c: Post 1c	Runoff Area=29,936 sf 42.27% Impervious Runoff Depth>3.07" Flow Length=239' Tc=1.3 min CN=63 Runoff=2.14 cfs 0.176 af
SubcatchmentPost 1d: Post 1d	Runoff Area=20,256 sf 10.24% Impervious Runoff Depth>1.16" Flow Length=200' Tc=18.1 min UI Adjusted CN=41 Runoff=0.27 cfs 0.045 af
SubcatchmentPost 1e: Post 1e	Runoff Area=23,349 sf 0.00% Impervious Runoff Depth>0.57" Flow Length=89' Tc=10.2 min CN=38 Runoff=0.13 cfs 0.025 af
SubcatchmentPost 1f: Post 1f	Runoff Area=82,367 sf 25.75% Impervious Runoff Depth>2.15" Flow Length=478' Tc=9.5 min CN=54 Runoff=3.08 cfs 0.339 af
SubcatchmentPost 1g: Post 1g	Runoff Area=15,897 sf 69.30% Impervious Runoff Depth>4.68" Flow Length=300' Tc=1.0 min CN=80 Runoff=1.87 cfs 0.142 af
SubcatchmentPost 1h: Post 1h	Runoff Area=83,632 sf 27.38% Impervious Runoff Depth>2.22" Flow Length=523' Tc=5.8 min UI Adjusted CN=51 Runoff=3.63 cfs 0.355 af
SubcatchmentPost 1i: Post 1i	Runoff Area=3,042 sf 100.00% Impervious Runoff Depth>6.46" Flow Length=266' Tc=1.0 min CN=98 Runoff=0.51 cfs 0.038 af
SubcatchmentPost 1j: Post 1j	Runoff Area=8,891 sf 22.49% Impervious Runoff Depth>1.96" Flow Length=124' Tc=0.9 min UI Adjusted CN=51 Runoff=0.37 cfs 0.033 af
SubcatchmentPost 1k: Post 1k	Runoff Area=31,689 sf 22.34% Impervious Runoff Depth>1.96" Flow Length=200' Tc=3.0 min CN=52 Runoff=1.29 cfs 0.119 af
SubcatchmentPost 1l: Post 1l	Runoff Area=14,607 sf 84.31% Impervious Runoff Depth>5.55" Flow Length=271' Tc=5.5 min CN=89 Runoff=1.84 cfs 0.155 af
SubcatchmentPost 1m: Post 1m	Runoff Area=54,912 sf 21.57% Impervious Runoff Depth>1.87" Flow Length=249' Tc=2.6 min UI Adjusted CN=50 Runoff=2.12 cfs 0.197 af
SubcatchmentPost 1n: Post 1n	Runoff Area=16,566 sf 42.96% Impervious Runoff Depth>3.15" Flow Length=236' Tc=1.2 min CN=64 Runoff=1.22 cfs 0.100 af
SubcatchmentPost 1o: Post 1o	Runoff Area=14,474 sf 77.53% Impervious Runoff Depth>5.16" Flow Length=191' Slope=0.0150 '/' Tc=1.8 min CN=85 Runoff=1.85 cfs 0.143 af

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 145

SubcatchmentPost 1p: Post 1p	Runoff Area=6,584 sf 80.95% Impervious Runoff Depth>5.36" Flow Length=127' Tc=0.7 min CN=87 Runoff=0.91 cfs 0.067 af
SubcatchmentPost 1q: Post 1q	Runoff Area=4,608 sf 77.43% Impervious Runoff Depth>5.15" Flow Length=75' Tc=0.4 min CN=85 Runoff=0.62 cfs 0.045 af
SubcatchmentPost 1r: Post 1r	Runoff Area=6,804 sf 88.18% Impervious Runoff Depth>5.78" Flow Length=169' Tc=1.1 min CN=91 Runoff=1.01 cfs 0.075 af
SubcatchmentPost 1s: Post 1s	Runoff Area=12,365 sf 18.27% Impervious Runoff Depth>1.72" Flow Length=118' Tc=0.5 min CN=50 Runoff=0.43 cfs 0.041 af
SubcatchmentPost 1t: Post 1t	Runoff Area=24,013 sf 83.39% Impervious Runoff Depth>5.50" Flow Length=304' Tc=1.5 min CN=88 Runoff=3.31 cfs 0.253 af
SubcatchmentPost 1u: Post 1u	Runoff Area=27,102 sf 80.43% Impervious Runoff Depth>5.33" Flow Length=358' Tc=2.0 min CN=86 Runoff=3.60 cfs 0.276 af
SubcatchmentPost 1v: Post 1v	Runoff Area=10,841 sf 92.44% Impervious Runoff Depth>6.02" Flow Length=244' Tc=0.8 min CN=94 Runoff=1.70 cfs 0.125 af
SubcatchmentPost 1w: Post 1w	Runoff Area=12,069 sf 85.92% Impervious Runoff Depth>5.65" Flow Length=250' Tc=1.0 min CN=90 Runoff=1.75 cfs 0.130 af
SubcatchmentPost 1x: Post 1x	Runoff Area=28,013 sf 11.12% Impervious Runoff Depth>1.25" Flow Length=281' Tc=5.9 min CN=45 Runoff=0.55 cfs 0.067 af
SubcatchmentPost 1y: Post 1y	Runoff Area=5,336 sf 98.84% Impervious Runoff Depth>6.39" Flow Length=269' Tc=1.0 min CN=97 Runoff=0.89 cfs 0.065 af
SubcatchmentPost 1z: Post 1z	Runoff Area=25,257 sf 31.61% Impervious Runoff Depth>2.50" Flow Length=97' Tc=1.1 min CN=58 Runoff=1.41 cfs 0.121 af
SubcatchmentPost 2a: Post 2a	Runoff Area=5,548 sf 96.88% Impervious Runoff Depth>6.28" Flow Length=242' Slope=0.0800 '/' Tc=0.8 min CN=96 Runoff=0.91 cfs 0.067 af
SubcatchmentPost 2b: Post 2b	Runoff Area=3,935 sf 100.00% Impervious Runoff Depth>6.46" Flow Length=259' Slope=0.0800 '/' Tc=0.9 min CN=98 Runoff=0.66 cfs 0.049 af
SubcatchmentPost 2c: Post 2c	Runoff Area=20,579 sf 83.57% Impervious Runoff Depth>5.51" Flow Length=228' Slope=0.0200 '/' Tc=1.5 min CN=88 Runoff=2.84 cfs 0.217 af
SubcatchmentPost 2d: Post 2d	Runoff Area=19,582 sf 78.76% Impervious Runoff Depth>5.23" Flow Length=252' Tc=1.2 min CN=85 Runoff=2.59 cfs 0.196 af
SubcatchmentPost 2e: Post 2e	Runoff Area=8,242 sf 45.00% Impervious Runoff Depth>3.27" Flow Length=416' Tc=13.6 min CN=66 Runoff=0.46 cfs 0.051 af
SubcatchmentPost 2f: Post 2f	Runoff Area=87,061 sf 9.23% Impervious Runoff Depth>1.09" Flow Length=256' Tc=2.3 min UI Adjusted CN=42 Runoff=1.52 cfs 0.182 af

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 146

Subcatchment Post 2g: Post 2g	Runoff Area=26,366 sf 6.30% Impervious Runoff Depth>0.93" Flow Length=296' Tc=2.5 min CN=41 Runoff=0.35 cfs 0.047 af
Subcatchment Post 2h: Post 2h	Runoff Area=6,563 sf 71.02% Impervious Runoff Depth>4.78" Flow Length=117' Slope=0.0600 '/' Tc=0.8 min CN=81 Runoff=0.80 cfs 0.060 af
Subcatchment Post 2i: Post 2i	Runoff Area=52,643 sf 23.27% Impervious Runoff Depth>2.01" Flow Length=424' Tc=9.2 min CN=53 Runoff=1.81 cfs 0.202 af
Subcatchment Post 2j: Post 2j	Runoff Area=12,114 sf 4.53% Impervious Runoff Depth>0.86" Flow Length=151' Slope=0.3300 '/' Tc=1.8 min CN=41 Runoff=0.14 cfs 0.020 af
Subcatchment Post 2k: Post 2k	Runoff Area=12,346 sf 30.07% Impervious Runoff Depth>2.41" Flow Length=227' Tc=3.6 min CN=57 Runoff=0.64 cfs 0.057 af
Subcatchment Post 3a: Post 3a	Runoff Area=21,228 sf 33.88% Impervious Runoff Depth>2.62" Flow Length=745' Slope=0.0500 '/' Tc=2.9 min CN=59 Runoff=1.24 cfs 0.106 af
Subcatchment Post 3b: Post 3b	Runoff Area=345,589 sf 14.36% Impervious Runoff Depth>1.39" Flow Length=601' Tc=9.9 min CN=46 Runoff=7.13 cfs 0.919 af
Subcatchment Post 3c: Post 3c	Runoff Area=8,810 sf 39.01% Impervious Runoff Depth>2.91" Flow Length=132' Tc=2.1 min CN=62 Runoff=0.59 cfs 0.049 af
Reach 18" Pipe: 18" Pipe	Avg. Flow Depth=1.05' Max Vel=6.66 fps Inflow=8.81 cfs 1.093 af 18.0" Round Pipe n=0.013 L=120.0' S=0.0100 '/' Capacity=10.50 cfs Outflow=8.81 cfs 1.093 af
Reach Phase 1 Post: Phase 1 Post	Inflow=12.90 cfs 0.754 af Outflow=12.90 cfs 0.754 af
Reach Phase 2 Post: Phase 2 Post	Inflow=8.04 cfs 1.101 af Outflow=8.04 cfs 1.101 af
Reach Pond Post: Pond Post	Inflow=19.98 cfs 1.854 af Outflow=19.98 cfs 1.854 af
Reach Swale to Pond 2-2: Swale to	Avg. Flow Depth=0.16' Max Vel=2.55 fps Inflow=1.08 cfs 0.107 af n=0.035 L=165.0' S=0.0727 '/' Capacity=57.26 cfs Outflow=1.07 cfs 0.107 af
Pond CB 1-6: CB 1-6	Peak Elev=42.17' Inflow=8.95 cfs 1.126 af 18.0" Round Culvert n=0.012 L=60.0' S=0.0050 '/' Outflow=8.95 cfs 1.126 af
Pond DMH P 1-2: DMH 1-2	Peak Elev=45.99' Inflow=2.38 cfs 0.180 af 12.0" Round Culvert n=0.012 L=60.0' S=0.0433 '/' Outflow=2.38 cfs 0.180 af
Pond DMH P 1-7: DMH P1-7	Peak Elev=35.84' Inflow=6.91 cfs 0.772 af 24.0" Round Culvert n=0.012 L=84.0' S=0.0068 '/' Outflow=6.91 cfs 0.772 af
Pond DMH P1-1: DMH 1-1	Peak Elev=59.07' Inflow=1.76 cfs 0.130 af 12.0" Round Culvert n=0.012 L=30.0' S=0.0283 '/' Outflow=1.76 cfs 0.130 af

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 147

Pond DMH P1-10: DMH P1-10	Peak Elev=41.94'	Inflow=4.68 cfs	0.388 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0245 '/'	Outflow=4.68 cfs	0.388 af	
Pond DMH P1-11: DMH P1-11	Peak Elev=44.92'	Inflow=4.68 cfs	0.388 af
12.0" Round Culvert n=0.012 L=52.0' S=0.0404 '/'	Outflow=4.68 cfs	0.388 af	
Pond DMH P1-12: DMH P1-12	Peak Elev=55.59'	Inflow=1.25 cfs	0.132 af
12.0" Round Culvert n=0.012 L=225.0' S=0.0533 '/'	Outflow=1.25 cfs	0.132 af	
Pond DMH P1-13: DMH P1-13	Peak Elev=40.30'	Inflow=8.95 cfs	1.126 af
18.0" Round Culvert n=0.012 L=130.0' S=0.0054 '/'	Outflow=8.95 cfs	1.126 af	
Pond DMH P1-3: DMH P1-3	Peak Elev=43.86'	Inflow=5.40 cfs	0.535 af
15.0" Round Culvert n=0.012 L=142.0' S=0.0408 '/'	Outflow=5.40 cfs	0.535 af	
Pond DMH P1-4: DMH P1-4	Peak Elev=39.01'	Inflow=7.21 cfs	0.777 af
18.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/'	Outflow=7.21 cfs	0.777 af	
Pond DMH P1-5: DMH P1-5	Peak Elev=37.77'	Inflow=3.06 cfs	0.243 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0050 '/'	Outflow=3.06 cfs	0.243 af	
Pond DMH P1-6: DMH P1-6	Peak Elev=37.22'	Inflow=3.95 cfs	0.310 af
12.0" Round Culvert n=0.012 L=116.0' S=0.0050 '/'	Outflow=3.95 cfs	0.310 af	
Pond DMH P1-8: DMH P 1-8	Peak Elev=40.62'	Inflow=6.88 cfs	0.529 af
15.0" Round Culvert n=0.012 L=110.0' S=0.0050 '/'	Outflow=6.88 cfs	0.529 af	
Pond DMH P1-9: DMH P1-9	Peak Elev=39.25'	Inflow=6.88 cfs	0.529 af
15.0" Round Culvert n=0.012 L=144.0' S=0.0049 '/'	Outflow=6.88 cfs	0.529 af	
Pond DMH P2-1: DMH P2-1	Peak Elev=48.21'	Inflow=1.68 cfs	0.135 af
12.0" Round Culvert n=0.012 L=70.0' S=0.0493 '/'	Outflow=1.68 cfs	0.135 af	
Pond DMH P2-2: DMH P2-2	Peak Elev=48.78'	Inflow=2.83 cfs	0.247 af
12.0" Round Culvert n=0.012 L=64.0' S=0.0055 '/'	Outflow=2.83 cfs	0.247 af	
Pond DMH P2-3: DMH P2-3	Peak Elev=47.91'	Inflow=5.67 cfs	0.464 af
12.0" Round Culvert n=0.012 L=110.0' S=0.0290 '/'	Outflow=5.67 cfs	0.464 af	
Pond DMH P2-4: DMH P2-4	Peak Elev=53.74'	Inflow=1.08 cfs	0.107 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0200 '/'	Outflow=1.08 cfs	0.107 af	
Pond DMH P2-5: DMH P2-5	Peak Elev=36.85'	Inflow=2.13 cfs	0.075 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0100 '/'	Outflow=2.13 cfs	0.075 af	
Pond DW 1-4: DW P1-4	Peak Elev=38.37'	Inflow=7.09 cfs	0.448 af
Primary=4.98 cfs 0.416 af Secondary=2.18 cfs 0.032 af	Outflow=7.09 cfs	0.448 af	
Pond DW P1-2: DW P1-2	Peak Elev=39.17'	Inflow=4.36 cfs	0.087 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/'	Outflow=4.36 cfs	0.087 af	

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 148

Pond DW P2-3: DW P2-3

Peak Elev=48.35' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond Pond 1-1: Pond 1-1

Peak Elev=38.92' Storage=9,833 cf Inflow=8.94 cfs 0.513 af
Discarded=1.12 cfs 0.426 af Primary=4.36 cfs 0.087 af Outflow=5.45 cfs 0.513 af

Pond Pond 1-2: Pond 1-2

Peak Elev=38.51' Storage=14,410 cf Inflow=14.68 cfs 2.100 af
Discarded=1.57 cfs 1.383 af Primary=7.09 cfs 0.448 af Secondary=6.68 cfs 0.269 af Outflow=15.33 cfs 2.100 af

Pond Pond 1-3: Pond 1-3

Peak Elev=35.55' Storage=10,503 cf Inflow=7.59 cfs 0.888 af
Discarded=0.98 cfs 0.628 af Primary=4.13 cfs 0.260 af Outflow=5.11 cfs 0.889 af

Pond Pond 1-4: Pond 1-4

Peak Elev=37.37' Storage=6,772 cf Inflow=8.27 cfs 0.649 af
Discarded=0.87 cfs 0.506 af Primary=5.65 cfs 0.144 af Outflow=6.52 cfs 0.649 af

Pond Pond 1-5: Pond 1-5

Peak Elev=39.40' Storage=5,354 cf Inflow=8.64 cfs 0.973 af
Discarded=1.02 cfs 0.709 af Primary=6.49 cfs 0.264 af Outflow=7.52 cfs 0.973 af

Pond Pond 2-1: Pond 2-1

Peak Elev=50.99' Storage=2,023 cf Inflow=2.16 cfs 0.239 af
Discarded=0.45 cfs 0.239 af Primary=0.00 cfs 0.000 af Outflow=0.45 cfs 0.239 af

Pond Pond 2-2: Pond 2-2

Peak Elev=39.48' Storage=9,165 cf Inflow=9.37 cfs 0.909 af
Discarded=1.43 cfs 0.835 af Primary=2.13 cfs 0.075 af Outflow=3.56 cfs 0.909 af

**Total Runoff Area = 31.306 ac Runoff Volume = 6.580 af Average Runoff Depth = 2.52"
68.61% Pervious = 21.479 ac 31.39% Impervious = 9.827 ac**

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 149

Summary for Subcatchment Offsite DOT: Offsite DOT

Runoff = 8.81 cfs @ 12.30 hrs, Volume= 1.093 af, Depth> 3.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
35,109	48	Brush, Poor, HSG A
63,906	57	Woods/grass comb., Poor, HSG A
60,586	98	Paved parking & roofs
159,601	71	Weighted Average
99,015	54	62.04% Pervious Area
60,586	98	37.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	1,589	0.0750	1.21		Lag/CN Method, Offsite DOT

Summary for Subcatchment Post 1a: Post 1a

Runoff = 1.01 cfs @ 12.01 hrs, Volume= 0.074 af, Depth> 6.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
1,040	98	Roofs, HSG A
4,198	98	Paved parking, HSG A
738	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
276	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,252	95	Weighted Average
276	39	4.41% Pervious Area
5,976	98	95.59% Impervious Area
738		12.35% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.03		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.6	214	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	239	Total			

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 150

Summary for Subcatchment Post 1b: Post 1b

Runoff = 0.75 cfs @ 12.02 hrs, Volume= 0.056 af, Depth> 6.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,621	98	Paved parking, HSG A
911	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
104	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
4,636	97	Weighted Average
104	39	2.24% Pervious Area
4,532	98	97.76% Impervious Area
911		20.10% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.13		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	250	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	290	Total			

Summary for Subcatchment Post 1c: Post 1c

Runoff = 2.14 cfs @ 12.02 hrs, Volume= 0.176 af, Depth> 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
2,478	98	Roofs, HSG A
7,246	98	Paved parking, HSG A
2,929	98	Unconnected pavement, HSG A
6,383	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
10,900	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
29,936	63	Weighted Average
17,283	38	57.73% Pervious Area
12,653	98	42.27% Impervious Area
2,929		23.15% Unconnected

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 151

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.4	58	0.2500	2.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	161	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.3	239	Total			

Summary for Subcatchment Post 1d: Post 1d

Runoff = 0.27 cfs @ 12.29 hrs, Volume= 0.045 af, Depth> 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Adj	Description
464	98	98	Roofs, HSG A
103	98	98	Paved parking, HSG A
1,507	98	98	Unconnected pavement, HSG A
9,452	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
8,730	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
20,256	44	41	Weighted Average, UI Adjusted
18,182	37	37	89.76% Pervious Area
2,074	98	98	10.24% Impervious Area
1,507			72.66% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0400	0.10		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	30	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	70	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
18.1	200	Total			

Summary for Subcatchment Post 1e: Post 1e

Runoff = 0.13 cfs @ 12.38 hrs, Volume= 0.025 af, Depth> 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 152

Area (sf)	CN	Description
0	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
11,230	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
12,119	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
23,349	38	Weighted Average
23,349	38	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	66	0.0600	0.11		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.1	23	0.3000	3.83		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
10.2	89	Total			

Summary for Subcatchment Post 1f: Post 1f

Runoff = 3.08 cfs @ 12.14 hrs, Volume= 0.339 af, Depth> 2.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
20,047	98	Roofs, HSG A
1,165	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
61,155	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
82,367	54	Weighted Average
61,155	39	74.25% Pervious Area
21,212	98	25.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	85	0.3300	0.34		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
5.4	393	0.0300	1.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.5	478	Total			

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 153

Summary for Subcatchment Post 1g: Post 1g

Runoff = 1.87 cfs @ 12.01 hrs, Volume= 0.142 af, Depth> 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
3,873	98	Roofs, HSG A
7,143	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,881	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
15,897	80	Weighted Average
4,881	39	30.70% Pervious Area
11,016	98	69.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	50	0.2500	3.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	250	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	300	Total			

Summary for Subcatchment Post 1h: Post 1h

Runoff = 3.63 cfs @ 12.09 hrs, Volume= 0.355 af, Depth> 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Adj	Description
10,621	98	98	Roofs, HSG A
853	98	98	Paved parking, HSG A
11,421	98	98	Unconnected pavement, HSG A
12,848	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
47,889	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
83,632	55	51	Weighted Average, UI Adjusted
60,737	38	38	72.62% Pervious Area
22,895	98	98	27.38% Impervious Area
11,421			49.88% Unconnected

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 154

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0400	1.29		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.2	60	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.3	443	0.0400	1.40		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.8	523	Total			

Summary for Subcatchment Post 1i: Post 1i

Runoff = 0.51 cfs @ 12.01 hrs, Volume= 0.038 af, Depth> 6.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,042	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
0	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
3,042	98	Weighted Average
3,042	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	246	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	266	Total			

Summary for Subcatchment Post 1j: Post 1j

Runoff = 0.37 cfs @ 12.02 hrs, Volume= 0.033 af, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 155

Area (sf)	CN	Adj	Description
1,317	98	98	Roofs, HSG A
308	98	98	Paved parking, HSG A
375	98	98	Unconnected pavement, HSG A
243	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
6,648	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
8,891	52	51	Weighted Average, UI Adjusted
6,891	39	39	77.51% Pervious Area
2,000	98	98	22.49% Impervious Area
375			18.75% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.85		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.5	90	0.2000	3.13		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.2	24	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.9	124	Total			

Summary for Subcatchment Post 1k: Post 1k

Runoff = 1.29 cfs @ 12.06 hrs, Volume= 0.119 af, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
7,078	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
24,611	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
31,689	52	Weighted Average
24,611	39	77.66% Pervious Area
7,078	98	22.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	35	0.4000	3.64		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.8	165	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.0	200	Total			

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 156

Summary for Subcatchment Post 1l: Post 1l

Runoff = 1.84 cfs @ 12.08 hrs, Volume= 0.155 af, Depth> 5.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
4,807	98	Roofs, HSG A
7,508	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
2,292	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
14,607	89	Weighted Average
2,292	39	15.69% Pervious Area
12,315	98	84.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	60	0.0500	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.9	211	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.5	271	Total			

Summary for Subcatchment Post 1m: Post 1m

Runoff = 2.12 cfs @ 12.05 hrs, Volume= 0.197 af, Depth> 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Adj	Description
8,658	98	98	Roofs, HSG A
256	98	98	Paved parking, HSG A
2,928	98	98	Unconnected pavement, HSG A
11,179	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
31,891	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
54,912	51	50	Weighted Average, UI Adjusted
43,070	38	38	78.43% Pervious Area
11,842	98	98	21.57% Impervious Area
2,928			24.73% Unconnected

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 157

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	10	0.0200	0.85		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.9	130	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	109	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.6	249	Total			

Summary for Subcatchment Post 1n: Post 1n

Runoff = 1.22 cfs @ 12.02 hrs, Volume= 0.100 af, Depth> 3.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
3,763	98	Roofs, HSG A
3,354	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
9,449	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
16,566	64	Weighted Average
9,449	39	57.04% Pervious Area
7,117	98	42.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	216	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.2	236	Total			

Summary for Subcatchment Post 1o: Post 1o

Runoff = 1.85 cfs @ 12.03 hrs, Volume= 0.143 af, Depth> 5.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 158

Area (sf)	CN	Description
3,247	98	Roofs, HSG A
7,974	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,253	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
14,474	85	Weighted Average
3,253	39	22.47% Pervious Area
11,221	98	77.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	60	0.0150	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	131	0.0150	2.49		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	191	Total			

Summary for Subcatchment Post 1p: Post 1p

Runoff = 0.91 cfs @ 12.01 hrs, Volume= 0.067 af, Depth> 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
1,438	98	Roofs, HSG A
3,892	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,254	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,584	87	Weighted Average
1,254	39	19.05% Pervious Area
5,330	98	80.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.4	107	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.7	127	Total			

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 159

Summary for Subcatchment Post 1q: Post 1q

Runoff = 0.62 cfs @ 12.01 hrs, Volume= 0.045 af, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
1,363	98	Roofs, HSG A
2,205	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,040	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
4,608	85	Weighted Average
1,040	39	22.57% Pervious Area
3,568	98	77.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	55	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.4	75	Total			

Summary for Subcatchment Post 1r: Post 1r

Runoff = 1.01 cfs @ 12.01 hrs, Volume= 0.075 af, Depth> 5.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
520	98	Roofs, HSG A
5,480	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
804	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,804	91	Weighted Average
804	39	11.82% Pervious Area
6,000	98	88.18% Impervious Area

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 160

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.0	149	0.0150	2.49		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.1	169	Total			

Summary for Subcatchment Post 1s: Post 1s

Runoff = 0.43 cfs @ 12.02 hrs, Volume= 0.041 af, Depth> 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
1,915	98	Roofs, HSG A
344	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
10,106	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,365	50	Weighted Average
10,106	39	81.73% Pervious Area
2,259	98	18.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	40	0.4000	3.74		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	78	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	118	Total			

Summary for Subcatchment Post 1t: Post 1t

Runoff = 3.31 cfs @ 12.02 hrs, Volume= 0.253 af, Depth> 5.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 161

Area (sf)	CN	Description
5,398	98	Roofs, HSG A
14,627	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,988	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
24,013	88	Weighted Average
3,988	39	16.61% Pervious Area
20,025	98	83.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.2	284	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.5	304	Total			

Summary for Subcatchment Post 1u: Post 1u

Runoff = 3.60 cfs @ 12.03 hrs, Volume= 0.276 af, Depth> 5.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
8,747	98	Roofs, HSG A
13,050	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
5,305	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
27,102	86	Weighted Average
5,305	39	19.57% Pervious Area
21,797	98	80.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.1	30	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.8	308	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.0	358	Total			

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 162

Summary for Subcatchment Post 1v: Post 1v

Runoff = 1.70 cfs @ 12.01 hrs, Volume= 0.125 af, Depth> 6.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
3,517	98	Roofs, HSG A
6,504	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
820	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
10,841	94	Weighted Average
820	39	7.56% Pervious Area
10,021	98	92.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	30	0.4000	3.53		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.1	30	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	184	0.0600	4.97		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	244	Total			

Summary for Subcatchment Post 1w: Post 1w

Runoff = 1.75 cfs @ 12.01 hrs, Volume= 0.130 af, Depth> 5.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
3,296	98	Roofs, HSG A
7,074	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,699	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,069	90	Weighted Average
1,699	39	14.08% Pervious Area
10,370	98	85.92% Impervious Area

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 163

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	230	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	250	Total			

Summary for Subcatchment Post 1x: Post 1x

Runoff = 0.55 cfs @ 12.11 hrs, Volume= 0.067 af, Depth> 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,116	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
8,382	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
16,515	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
28,013	45	Weighted Average
24,897	38	88.88% Pervious Area
3,116	98	11.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	60	0.2500	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.6	221	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.9	281	Total			

Summary for Subcatchment Post 1y: Post 1y

Runoff = 0.89 cfs @ 12.01 hrs, Volume= 0.065 af, Depth> 6.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 164

Area (sf)	CN	Description
1,040	98	Roofs, HSG A
4,234	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
62	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
5,336	97	Weighted Average
62	39	1.16% Pervious Area
5,274	98	98.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	249	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.0	269	Total			

Summary for Subcatchment Post 1z: Post 1z

Runoff = 1.41 cfs @ 12.02 hrs, Volume= 0.121 af, Depth> 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
7,216	98	Roofs, HSG A
768	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
17,273	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
25,257	58	Weighted Average
17,273	39	68.39% Pervious Area
7,984	98	31.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.26		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.2	27	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.1	97	Total			

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 165

Summary for Subcatchment Post 2a: Post 2a

Runoff = 0.91 cfs @ 12.01 hrs, Volume= 0.067 af, Depth> 6.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
1,014	98	Roofs, HSG A
4,022	98	Paved parking, HSG A
339	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
173	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
5,548	96	Weighted Average
173	39	3.12% Pervious Area
5,375	98	96.88% Impervious Area
339		6.31% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0800	1.71		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.6	222	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.8	242	Total			

Summary for Subcatchment Post 2b: Post 2b

Runoff = 0.66 cfs @ 12.01 hrs, Volume= 0.049 af, Depth> 6.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
0	98	Roofs, HSG A
3,880	98	Paved parking, HSG A
55	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
0	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
3,935	98	Weighted Average
3,935	98	100.00% Impervious Area
55		1.40% Unconnected

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 166

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0800	1.71		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.7	239	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.9	259	Total			

Summary for Subcatchment Post 2c: Post 2c

Runoff = 2.84 cfs @ 12.02 hrs, Volume= 0.217 af, Depth> 5.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
5,680	98	Roofs, HSG A
11,517	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
3,382	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
20,579	88	Weighted Average
3,382	39	16.43% Pervious Area
17,197	98	83.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.98		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.2	208	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.5	228	Total			

Summary for Subcatchment Post 2d: Post 2d

Runoff = 2.59 cfs @ 12.02 hrs, Volume= 0.196 af, Depth> 5.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 167

Area (sf)	CN	Description
4,913	98	Roofs, HSG A
10,510	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,159	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
19,582	85	Weighted Average
4,159	39	21.24% Pervious Area
15,423	98	78.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0600	1.52		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.0	232	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.2	252	Total			

Summary for Subcatchment Post 2e: Post 2e

Runoff = 0.46 cfs @ 12.19 hrs, Volume= 0.051 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
1,444	98	Roofs, HSG A
2,265	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,533	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
8,242	66	Weighted Average
4,533	39	55.00% Pervious Area
3,709	98	45.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	80	0.0200	0.16		Sheet Flow, Grass: Short n= 0.150 P2= 3.10"
0.2	36	0.2500	3.50		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.1	300	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
13.6	416	Total			

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 168

Summary for Subcatchment Post 2f: Post 2f

Runoff = 1.52 cfs @ 12.05 hrs, Volume= 0.182 af, Depth> 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Adj	Description
6,321	98	98	Roofs, HSG A
27	98	98	Paved parking, HSG A
1,685	98	98	Unconnected pavement, HSG A
47,632	36	36	Woods, Fair, HSG A
0	48		Brush, Poor, HSG A
31,396	39	39	>75% Grass cover, Good, HSG A
0	98		Water Surface, HSG A
87,061	43	42	Weighted Average, UI Adjusted
79,028	37	37	90.77% Pervious Area
8,033	98	98	9.23% Impervious Area
1,685			20.98% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	32	0.0200	1.08		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.9	59	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.9	165	0.4000	3.16		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.3	256	Total			

Summary for Subcatchment Post 2g: Post 2g

Runoff = 0.35 cfs @ 12.06 hrs, Volume= 0.047 af, Depth> 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
1,182	98	Roofs, HSG A
357	98	Paved parking, HSG A
121	98	Unconnected pavement, HSG A
13,159	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
11,547	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
26,366	41	Weighted Average
24,706	37	93.70% Pervious Area
1,660	98	6.30% Impervious Area
121		7.29% Unconnected

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 169

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	41	0.0800	1.97		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.2	255	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.5	296	Total			

Summary for Subcatchment Post 2h: Post 2h

Runoff = 0.80 cfs @ 12.01 hrs, Volume= 0.060 af, Depth> 4.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
1,807	98	Roofs, HSG A
2,854	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
1,902	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
6,563	81	Weighted Average
1,902	39	28.98% Pervious Area
4,661	98	71.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0600	1.83		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
0.3	67	0.0600	3.94		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.8	117	Total			

Summary for Subcatchment Post 2i: Post 2i

Runoff = 1.81 cfs @ 12.14 hrs, Volume= 0.202 af, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 170

Area (sf)	CN	Description
11,373	98	Roofs, HSG A
877	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
40,393	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
52,643	53	Weighted Average
40,393	39	76.73% Pervious Area
12,250	98	23.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.4000	0.25		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
0.1	28	0.4000	4.43		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.5	296	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
9.2	424	Total			

Summary for Subcatchment Post 2j: Post 2j

Runoff = 0.14 cfs @ 12.06 hrs, Volume= 0.020 af, Depth> 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
459	98	Roofs, HSG A
90	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
4,518	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
7,047	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,114	41	Weighted Average
11,565	38	95.47% Pervious Area
549	98	4.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	20	0.3300	0.26		Sheet Flow, Grass: Dense n= 0.240 P2= 3.10"
0.5	131	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.8	151	Total			

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 171

Summary for Subcatchment Post 2k: Post 2k

Runoff = 0.64 cfs @ 12.06 hrs, Volume= 0.057 af, Depth> 2.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
3,713	98	Roofs, HSG A
0	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
0	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
8,633	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
12,346	57	Weighted Average
8,633	39	69.93% Pervious Area
3,713	98	30.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.4000	3.25		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
3.5	207	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
3.6	227	Total			

Summary for Subcatchment Post 3a: Post 3a

Runoff = 1.24 cfs @ 12.05 hrs, Volume= 0.106 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
0	98	Roofs, HSG A
0	98	Paved parking, HSG A
7,192	98	Unconnected pavement, HSG A
769	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
13,267	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
21,228	59	Weighted Average
14,036	39	66.12% Pervious Area
7,192	98	33.88% Impervious Area
7,192		100.00% Unconnected

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 172

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	20	0.0500	1.42		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
2.7	725	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
2.9	745	Total			

Summary for Subcatchment Post 3b: Post 3b

Runoff = 7.13 cfs @ 12.15 hrs, Volume= 0.919 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
16,932	98	Roofs, HSG A
4,544	98	Paved parking, HSG A
3,956	98	Unconnected pavement, HSG A
185,603	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
110,357	39	>75% Grass cover, Good, HSG A
24,197	98	Water Surface, HSG A
345,589	46	Weighted Average
295,960	37	85.64% Pervious Area
49,629	98	14.36% Impervious Area
3,956		7.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	20	0.3300	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"
1.7	165	0.1000	1.58		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.2	416	0.0500	1.12		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
9.9	601	Total			

Summary for Subcatchment Post 3c: Post 3c

Runoff = 0.59 cfs @ 12.04 hrs, Volume= 0.049 af, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 173

Area (sf)	CN	Description
1,640	98	Roofs, HSG A
1,797	98	Paved parking, HSG A
0	98	Unconnected pavement, HSG A
886	36	Woods, Fair, HSG A
0	48	Brush, Poor, HSG A
4,487	39	>75% Grass cover, Good, HSG A
0	98	Water Surface, HSG A
8,810	62	Weighted Average
5,373	39	60.99% Pervious Area
3,437	98	39.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	30	0.0400	1.40		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.10"
1.7	102	0.0200	0.99		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
2.1	132	Total			

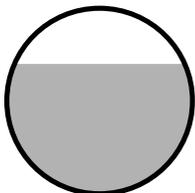
Summary for Reach 18" Pipe: 18" Pipe

Inflow Area = 3.664 ac, 37.96% Impervious, Inflow Depth > 3.58" for 100-Year event
 Inflow = 8.81 cfs @ 12.30 hrs, Volume= 1.093 af
 Outflow = 8.81 cfs @ 12.31 hrs, Volume= 1.093 af, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Max. Velocity= 6.66 fps, Min. Travel Time= 0.3 min
 Avg. Velocity = 2.66 fps, Avg. Travel Time= 0.8 min

Peak Storage= 159 cf @ 12.31 hrs
 Average Depth at Peak Storage= 1.05'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.50 cfs

18.0" Round Pipe
 n= 0.013
 Length= 120.0' Slope= 0.0100 '/'
 Inlet Invert= 48.91', Outlet Invert= 47.71'



12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 174

Summary for Reach Phase 1 Post: Phase 1 Post

Inflow Area = 17.032 ac, 39.73% Impervious, Inflow Depth > 0.53" for 100-Year event
Inflow = 12.90 cfs @ 12.36 hrs, Volume= 0.754 af
Outflow = 12.90 cfs @ 12.36 hrs, Volume= 0.754 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Phase 2 Post: Phase 2 Post

Inflow Area = 14.274 ac, 21.44% Impervious, Inflow Depth > 0.93" for 100-Year event
Inflow = 8.04 cfs @ 12.19 hrs, Volume= 1.101 af
Outflow = 8.04 cfs @ 12.19 hrs, Volume= 1.101 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Pond Post: Pond Post

Inflow Area = 31.306 ac, 31.39% Impervious, Inflow Depth > 0.71" for 100-Year event
Inflow = 19.98 cfs @ 12.36 hrs, Volume= 1.854 af
Outflow = 19.98 cfs @ 12.36 hrs, Volume= 1.854 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach Swale to Pond 2-2: Swale to Pond 2-2

Inflow Area = 0.756 ac, 19.20% Impervious, Inflow Depth > 1.70" for 100-Year event
Inflow = 1.08 cfs @ 12.02 hrs, Volume= 0.107 af
Outflow = 1.07 cfs @ 12.04 hrs, Volume= 0.107 af, Atten= 1%, Lag= 1.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Max. Velocity= 2.55 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 0.90 fps, Avg. Travel Time= 3.1 min

Peak Storage= 69 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 1.00' Flow Area= 6.7 sf, Capacity= 57.26 cfs

10.00' x 1.00' deep Parabolic Channel, n= 0.035 High grass
Length= 165.0' Slope= 0.0727 '
Inlet Invert= 50.00', Outlet Invert= 38.00'



12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 175

Summary for Pond CB 1-6: CB 1-6

Inflow Area = 3.868 ac, 37.14% Impervious, Inflow Depth > 3.49" for 100-Year event
 Inflow = 8.95 cfs @ 12.31 hrs, Volume= 1.126 af
 Outflow = 8.95 cfs @ 12.31 hrs, Volume= 1.126 af, Atten= 0%, Lag= 0.0 min
 Primary = 8.95 cfs @ 12.31 hrs, Volume= 1.126 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 42.17' @ 12.31 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	40.00'	18.0" Round 18" Culvert L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.00' / 39.70' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=8.92 cfs @ 12.31 hrs HW=42.16' TW=40.30' (Dynamic Tailwater)
 ↑1=18" Culvert (Barrel Controls 8.92 cfs @ 5.05 fps)

Summary for Pond DMH P 1-2: DMH 1-2

Inflow Area = 0.435 ac, 74.23% Impervious, Inflow Depth > 4.97" for 100-Year event
 Inflow = 2.38 cfs @ 12.01 hrs, Volume= 0.180 af
 Outflow = 2.38 cfs @ 12.01 hrs, Volume= 0.180 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.38 cfs @ 12.01 hrs, Volume= 0.180 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 45.99' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round 12" Culvert L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 42.50' S= 0.0433 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.29 cfs @ 12.01 hrs HW=45.97' TW=43.68' (Dynamic Tailwater)
 ↑1=12" Culvert (Inlet Controls 2.29 cfs @ 3.17 fps)

Summary for Pond DMH P 1-7: DMH P1-7

Inflow Area = 14.636 ac, 36.58% Impervious, Inflow Depth > 0.63" for 100-Year event
 Inflow = 6.91 cfs @ 12.14 hrs, Volume= 0.772 af
 Outflow = 6.91 cfs @ 12.14 hrs, Volume= 0.772 af, Atten= 0%, Lag= 0.0 min
 Primary = 6.91 cfs @ 12.14 hrs, Volume= 0.772 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 35.84' @ 12.54 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.32'	24.0" Round Culvert L= 84.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 176

Inlet / Outlet Invert= 34.32' / 33.75' S= 0.0068 '/' Cc= 0.900
 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=6.84 cfs @ 12.14 hrs HW=35.56' TW=34.51' (Dynamic Tailwater)

↑1=Culvert (Barrel Controls 6.84 cfs @ 4.80 fps)

Summary for Pond DMH P1-1: DMH 1-1

Inflow Area = 0.250 ac, 96.51% Impervious, Inflow Depth > 6.26" for 100-Year event
 Inflow = 1.76 cfs @ 12.01 hrs, Volume= 0.130 af
 Outflow = 1.76 cfs @ 12.01 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.76 cfs @ 12.01 hrs, Volume= 0.130 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 59.07' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	58.35'	12.0" Round 12" Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.35' / 57.50' S= 0.0283 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.68 cfs @ 12.01 hrs HW=59.05' TW=36.89' (Dynamic Tailwater)

↑1=12" Culvert (Inlet Controls 1.68 cfs @ 2.85 fps)

Summary for Pond DMH P1-10: DMH P1-10

Inflow Area = 1.292 ac, 51.16% Impervious, Inflow Depth > 3.60" for 100-Year event
 Inflow = 4.68 cfs @ 12.02 hrs, Volume= 0.388 af
 Outflow = 4.68 cfs @ 12.02 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.68 cfs @ 12.02 hrs, Volume= 0.388 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 41.94' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	40.70'	15.0" Round Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 40.70' / 38.00' S= 0.0245 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.50 cfs @ 12.02 hrs HW=41.90' TW=39.31' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 4.50 cfs @ 3.72 fps)

Summary for Pond DMH P1-11: DMH P1-11

Inflow Area = 1.292 ac, 51.16% Impervious, Inflow Depth > 3.60" for 100-Year event
 Inflow = 4.68 cfs @ 12.02 hrs, Volume= 0.388 af
 Outflow = 4.68 cfs @ 12.02 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.68 cfs @ 12.02 hrs, Volume= 0.388 af

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 177

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 44.92' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.90'	12.0" Round Culvert L= 52.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.90' / 40.80' S= 0.0404 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.49 cfs @ 12.02 hrs HW=44.81' TW=41.90' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 4.49 cfs @ 5.71 fps)

Summary for Pond DMH P1-12: DMH P1-12

Inflow Area = 0.766 ac, 25.16% Impervious, Inflow Depth > 2.07" for 100-Year event
Inflow = 1.25 cfs @ 12.04 hrs, Volume= 0.132 af
Outflow = 1.25 cfs @ 12.04 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.04 hrs, Volume= 0.132 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 55.59' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	55.00'	12.0" Round Culvert L= 225.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 55.00' / 43.00' S= 0.0533 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.22 cfs @ 12.04 hrs HW=55.58' TW=44.71' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.22 cfs @ 2.59 fps)

Summary for Pond DMH P1-13: DMH P1-13

Inflow Area = 3.868 ac, 37.14% Impervious, Inflow Depth > 3.49" for 100-Year event
Inflow = 8.95 cfs @ 12.31 hrs, Volume= 1.126 af
Outflow = 8.95 cfs @ 12.31 hrs, Volume= 1.126 af, Atten= 0%, Lag= 0.0 min
Primary = 8.95 cfs @ 12.31 hrs, Volume= 1.126 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 40.30' @ 12.31 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	38.10'	18.0" Round Culvert L= 130.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.10' / 37.40' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=8.92 cfs @ 12.31 hrs HW=40.30' TW=38.50' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 8.92 cfs @ 5.05 fps)

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 178

Summary for Pond DMH P1-3: DMH P1-3

Inflow Area = 2.355 ac, 36.03% Impervious, Inflow Depth > 2.73" for 100-Year event
 Inflow = 5.40 cfs @ 12.06 hrs, Volume= 0.535 af
 Outflow = 5.40 cfs @ 12.06 hrs, Volume= 0.535 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.40 cfs @ 12.06 hrs, Volume= 0.535 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 43.86' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	42.40'	15.0" Round Culvert L= 142.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.40' / 36.60' S= 0.0408 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.32 cfs @ 12.06 hrs HW=43.84' TW=38.67' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 5.32 cfs @ 4.34 fps)

Summary for Pond DMH P1-4: DMH P1-4

Inflow Area = 8.538 ac, 35.38% Impervious, Inflow Depth > 1.09" for 100-Year event
 Inflow = 7.21 cfs @ 12.06 hrs, Volume= 0.777 af
 Outflow = 7.21 cfs @ 12.06 hrs, Volume= 0.777 af, Atten= 0%, Lag= 0.0 min
 Primary = 7.21 cfs @ 12.06 hrs, Volume= 0.777 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 39.01' @ 12.50 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.50'	18.0" Round Culvert L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.00' S= 0.0050 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=5.78 cfs @ 12.06 hrs HW=38.69' TW=38.18' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 5.78 cfs @ 3.27 fps)

Summary for Pond DMH P1-5: DMH P1-5

Inflow Area = 0.713 ac, 59.08% Impervious, Inflow Depth > 4.09" for 100-Year event
 Inflow = 3.06 cfs @ 12.03 hrs, Volume= 0.243 af
 Outflow = 3.06 cfs @ 12.03 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.06 cfs @ 12.03 hrs, Volume= 0.243 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 37.77' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.35'	12.0" Round 12" Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 179

Inlet / Outlet Invert= 35.35' / 35.10' S= 0.0050 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.60 cfs @ 12.03 hrs HW=37.25' TW=37.07' (Dynamic Tailwater)

↑1=12" Culvert (Outlet Controls 1.60 cfs @ 2.04 fps)

Summary for Pond DMH P1-6: DMH P1-6

Inflow Area = 0.864 ac, 62.91% Impervious, Inflow Depth > 4.31" for 100-Year event
Inflow = 3.95 cfs @ 12.02 hrs, Volume= 0.310 af
Outflow = 3.95 cfs @ 12.02 hrs, Volume= 0.310 af, Atten= 0%, Lag= 0.0 min
Primary = 3.95 cfs @ 12.02 hrs, Volume= 0.310 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.22' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.00'	12.0" Round 12" Culvert L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 34.42' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.78 cfs @ 12.02 hrs HW=37.08' TW=35.31' (Dynamic Tailwater)

↑1=12" Culvert (Barrel Controls 3.78 cfs @ 4.81 fps)

Summary for Pond DMH P1-8: DMH P 1-8

Inflow Area = 1.173 ac, 81.82% Impervious, Inflow Depth > 5.41" for 100-Year event
Inflow = 6.88 cfs @ 12.03 hrs, Volume= 0.529 af
Outflow = 6.88 cfs @ 12.03 hrs, Volume= 0.529 af, Atten= 0%, Lag= 0.0 min
Primary = 6.88 cfs @ 12.03 hrs, Volume= 0.529 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 40.62' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.35'	15.0" Round 15" Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.35' / 34.80' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.94 cfs @ 12.03 hrs HW=40.00' TW=39.08' (Dynamic Tailwater)

↑1=15" Culvert (Outlet Controls 4.94 cfs @ 4.02 fps)

Summary for Pond DMH P1-9: DMH P1-9

Inflow Area = 1.173 ac, 81.82% Impervious, Inflow Depth > 5.41" for 100-Year event
Inflow = 6.88 cfs @ 12.03 hrs, Volume= 0.529 af
Outflow = 6.88 cfs @ 12.03 hrs, Volume= 0.529 af, Atten= 0%, Lag= 0.0 min
Primary = 6.88 cfs @ 12.03 hrs, Volume= 0.529 af

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 180

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 39.25' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.70'	15.0" Round Culvert L= 144.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.70' / 34.00' S= 0.0049 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=6.30 cfs @ 12.03 hrs HW=39.08' TW=37.29' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 6.30 cfs @ 5.14 fps)

Summary for Pond DMH P2-1: DMH P2-1

Inflow Area = 0.496 ac, 45.65% Impervious, Inflow Depth > 3.27" for 100-Year event
 Inflow = 1.68 cfs @ 12.01 hrs, Volume= 0.135 af
 Outflow = 1.68 cfs @ 12.01 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.68 cfs @ 12.01 hrs, Volume= 0.135 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.21' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	47.45'	12.0" Round 12" Culvert L= 70.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 47.45' / 44.00' S= 0.0493 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.61 cfs @ 12.01 hrs HW=48.19' TW=38.81' (Dynamic Tailwater)
 ↑1=12" Culvert (Inlet Controls 1.61 cfs @ 2.59 fps)

Summary for Pond DMH P2-2: DMH P2-2

Inflow Area = 2.921 ac, 24.27% Impervious, Inflow Depth > 1.02" for 100-Year event
 Inflow = 2.83 cfs @ 12.02 hrs, Volume= 0.247 af
 Outflow = 2.83 cfs @ 12.02 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.83 cfs @ 12.02 hrs, Volume= 0.247 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.78' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	47.60'	12.0" Round 12" Culvert L= 64.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.60' / 47.25' S= 0.0055 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.71 cfs @ 12.02 hrs HW=48.74' TW=47.75' (Dynamic Tailwater)
 ↑1=12" Culvert (Barrel Controls 2.71 cfs @ 3.80 fps)

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 181

Summary for Pond DMH P2-3: DMH P2-3

Inflow Area = 3.393 ac, 32.52% Impervious, Inflow Depth > 1.64" for 100-Year event
Inflow = 5.67 cfs @ 12.02 hrs, Volume= 0.464 af
Outflow = 5.67 cfs @ 12.02 hrs, Volume= 0.464 af, Atten= 0%, Lag= 0.0 min
Primary = 5.67 cfs @ 12.02 hrs, Volume= 0.464 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 47.91' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	45.19'	12.0" Round 12" Culvert L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.19' / 42.00' S= 0.0290 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.43 cfs @ 12.02 hrs HW=47.75' TW=38.84' (Dynamic Tailwater)
↑**1=12" Culvert** (Inlet Controls 5.43 cfs @ 6.91 fps)

Summary for Pond DMH P2-4: DMH P2-4

Inflow Area = 0.756 ac, 19.20% Impervious, Inflow Depth > 1.70" for 100-Year event
Inflow = 1.08 cfs @ 12.02 hrs, Volume= 0.107 af
Outflow = 1.08 cfs @ 12.02 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 12.02 hrs, Volume= 0.107 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 53.74' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	53.20'	12.0" Round 12" Culvert L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 53.20' / 51.20' S= 0.0200 '/ Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.03 cfs @ 12.02 hrs HW=53.73' TW=50.15' (Dynamic Tailwater)
↑**1=12" Culvert** (Inlet Controls 1.03 cfs @ 2.47 fps)

Summary for Pond DMH P2-5: DMH P2-5

Inflow Area = 5.854 ac, 30.00% Impervious, Inflow Depth = 0.15" for 100-Year event
Inflow = 2.13 cfs @ 12.36 hrs, Volume= 0.075 af
Outflow = 2.13 cfs @ 12.36 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min
Primary = 2.13 cfs @ 12.36 hrs, Volume= 0.075 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.85' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.00'	12.0" Round 12" Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 182

Inlet / Outlet Invert= 36.00' / 35.60' S= 0.0100 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.11 cfs @ 12.36 hrs HW=36.84' TW=0.00' (Dynamic Tailwater)

↑1=12" Culvert (Barrel Controls 2.11 cfs @ 4.05 fps)

Summary for Pond DW 1-4: DW P1-4

Inflow Area = 13.667 ac, 34.60% Impervious, Inflow Depth = 0.39" for 100-Year event
Inflow = 7.09 cfs @ 12.35 hrs, Volume= 0.448 af
Outflow = 7.09 cfs @ 12.35 hrs, Volume= 0.448 af, Atten= 0%, Lag= 0.0 min
Primary = 4.98 cfs @ 12.25 hrs, Volume= 0.416 af
Secondary = 2.18 cfs @ 12.35 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 38.37' @ 12.35 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	35.50'	12.0" Round Culvert L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.50' / 34.42' S= 0.0093 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	38.25'	20.0' long x 2.0' 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=4.85 cfs @ 12.25 hrs HW=38.30' TW=35.57' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 4.85 cfs @ 6.18 fps)

Secondary OutFlow Max=2.18 cfs @ 12.35 hrs HW=38.37' TW=0.00' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Weir Controls 2.18 cfs @ 0.89 fps)

Summary for Pond DW P1-2: DW P1-2

Inflow Area = 5.848 ac, 32.31% Impervious, Inflow Depth = 0.18" for 100-Year event
Inflow = 4.36 cfs @ 12.65 hrs, Volume= 0.087 af
Outflow = 4.36 cfs @ 12.65 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min
Primary = 4.36 cfs @ 12.65 hrs, Volume= 0.087 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 39.17' @ 12.51 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	15.0" Round 12" Culvert L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.50' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 183

Primary OutFlow Max=2.43 cfs @ 12.65 hrs HW=39.02' TW=38.85' (Dynamic Tailwater)

↳1=12" Culvert (Inlet Controls 2.43 cfs @ 1.98 fps)

Summary for Pond DW P2-3: DW P2-3

Inflow Area = 2.282 ac, 11.82% Impervious, Inflow Depth = 0.00" for 100-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.35' @ 12.19 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	48.30'	12.0" Round 12" Culvert L= 120.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.30' / 47.70' S= 0.0050 ' / Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=48.30' TW=47.60' (Dynamic Tailwater)

↳1=12" Culvert (Controls 0.00 cfs)

Summary for Pond Pond 1-1: Pond 1-1

Inflow Area = 5.848 ac, 32.31% Impervious, Inflow Depth > 1.05" for 100-Year event
 Inflow = 8.94 cfs @ 12.07 hrs, Volume= 0.513 af
 Outflow = 5.45 cfs @ 12.65 hrs, Volume= 0.513 af, Atten= 39%, Lag= 34.7 min
 Discarded = 1.12 cfs @ 12.46 hrs, Volume= 0.426 af
 Primary = 4.36 cfs @ 12.65 hrs, Volume= 0.087 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 38.92' @ 12.46 hrs Surf.Area= 5,838 sf Storage= 9,833 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 70.0 min (821.8 - 751.8)

Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	10,322 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	1,891	0	0
38.00	3,608	5,499	5,499
39.00	6,038	4,823	10,322

Device	Routing	Invert	Outlet Devices
#1	Discarded	36.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	38.50'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 184

Discarded OutFlow Max=1.11 cfs @ 12.46 hrs HW=38.91' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 1.11 cfs)

Primary OutFlow Max=0.00 cfs @ 12.65 hrs HW=38.87' TW=39.02' (Dynamic Tailwater)

↑2=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond Pond 1-2: Pond 1-2

Inflow Area = 13.667 ac, 34.60% Impervious, Inflow Depth > 1.84" for 100-Year event
 Inflow = 14.68 cfs @ 12.34 hrs, Volume= 2.100 af
 Outflow = 15.33 cfs @ 12.35 hrs, Volume= 2.100 af, Atten= 0%, Lag= 0.6 min
 Discarded = 1.57 cfs @ 12.36 hrs, Volume= 1.383 af
 Primary = 7.09 cfs @ 12.35 hrs, Volume= 0.448 af
 Secondary = 6.68 cfs @ 12.36 hrs, Volume= 0.269 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 38.51' @ 12.36 hrs Surf.Area= 8,185 sf Storage= 14,410 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 50.1 min (834.1 - 784.0)

Volume	Invert	Avail.Storage	Storage Description
#1	36.00'	16,448 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
36.00	3,158	0	0
38.00	7,320	10,478	10,478
38.75	8,599	5,970	16,448

Device	Routing	Invert	Outlet Devices
#1	Discarded	36.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	38.00'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Secondary	38.25'	20.0' long x 2.0' 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Discarded OutFlow Max=1.57 cfs @ 12.36 hrs HW=38.51' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 1.57 cfs)

Primary OutFlow Max=4.20 cfs @ 12.35 hrs HW=38.51' TW=38.36' (Dynamic Tailwater)

↑2=Orifice/Grate (Orifice Controls 4.20 cfs @ 1.87 fps)

Secondary OutFlow Max=6.64 cfs @ 12.36 hrs HW=38.51' TW=0.00' (Dynamic Tailwater)

↑3=Broad-Crested Rectangular Weir (Weir Controls 6.64 cfs @ 1.30 fps)

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 185

Summary for Pond Pond 1-3: Pond 1-3

Inflow Area = 15.076 ac, 36.77% Impervious, Inflow Depth > 0.71" for 100-Year event
 Inflow = 7.59 cfs @ 12.13 hrs, Volume= 0.888 af
 Outflow = 5.11 cfs @ 12.51 hrs, Volume= 0.889 af, Atten= 33%, Lag= 22.8 min
 Discarded = 0.98 cfs @ 12.51 hrs, Volume= 0.628 af
 Primary = 4.13 cfs @ 12.51 hrs, Volume= 0.260 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 35.55' @ 12.51 hrs Surf.Area= 5,124 sf Storage= 10,503 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 61.7 min (820.3 - 758.5)

Volume	Invert	Avail.Storage	Storage Description
#1	33.00'	12,888 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
33.00	3,114	0	0
36.00	5,478	12,888	12,888

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	35.25'	10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.98 cfs @ 12.51 hrs HW=35.55' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.98 cfs)

Primary OutFlow Max=4.11 cfs @ 12.51 hrs HW=35.55' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 4.11 cfs @ 1.37 fps)

Summary for Pond Pond 1-4: Pond 1-4

Inflow Area = 1.753 ac, 65.22% Impervious, Inflow Depth > 4.44" for 100-Year event
 Inflow = 8.27 cfs @ 12.03 hrs, Volume= 0.649 af
 Outflow = 6.52 cfs @ 12.09 hrs, Volume= 0.649 af, Atten= 21%, Lag= 3.5 min
 Discarded = 0.87 cfs @ 12.09 hrs, Volume= 0.506 af
 Primary = 5.65 cfs @ 12.09 hrs, Volume= 0.144 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 37.37' @ 12.09 hrs Surf.Area= 4,531 sf Storage= 6,772 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 68.1 min (817.7 - 749.6)

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 186

Volume	Invert	Avail.Storage	Storage Description
#1	34.00'	10,054 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.00	805	0	0
35.00	1,202	1,004	1,004
36.00	1,753	1,478	2,481
38.00	5,820	7,573	10,054

Device	Routing	Invert	Outlet Devices
#1	Discarded	34.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	37.00'	10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.86 cfs @ 12.09 hrs HW=37.36' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.86 cfs)

Primary OutFlow Max=5.49 cfs @ 12.09 hrs HW=37.36' TW=0.00' (Dynamic Tailwater)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 5.49 cfs @ 1.53 fps)

Summary for Pond Pond 1-5: Pond 1-5

Inflow Area = 4.871 ac, 30.50% Impervious, Inflow Depth > 2.40" for 100-Year event
 Inflow = 8.64 cfs @ 12.03 hrs, Volume= 0.973 af
 Outflow = 7.52 cfs @ 12.11 hrs, Volume= 0.973 af, Atten= 13%, Lag= 4.5 min
 Discarded = 1.02 cfs @ 12.11 hrs, Volume= 0.709 af
 Primary = 6.49 cfs @ 12.11 hrs, Volume= 0.264 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 39.40' @ 12.11 hrs Surf.Area= 5,332 sf Storage= 5,354 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 24.8 min (802.7 - 777.9)

Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	5,921 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	2,339	0	0
39.50	5,556	5,921	5,921

Device	Routing	Invert	Outlet Devices
#1	Discarded	38.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	39.00'	10.0' long x 2.0' 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

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 187

Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88
2.85 3.07 3.20 3.32

Discarded OutFlow Max=1.02 cfs @ 12.11 hrs HW=39.39' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 1.02 cfs)

Primary OutFlow Max=6.43 cfs @ 12.11 hrs HW=39.39' TW=37.74' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Weir Controls 6.43 cfs @ 1.64 fps)

Summary for Pond Pond 2-1: Pond 2-1

Inflow Area = 2.282 ac, 11.82% Impervious, Inflow Depth > 1.26" for 100-Year event
 Inflow = 2.16 cfs @ 12.06 hrs, Volume= 0.239 af
 Outflow = 0.45 cfs @ 12.57 hrs, Volume= 0.239 af, Atten= 79%, Lag= 31.1 min
 Discarded = 0.45 cfs @ 12.57 hrs, Volume= 0.239 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.99' @ 12.57 hrs Surf.Area= 2,363 sf Storage= 2,023 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 28.1 min (849.3 - 821.2)

Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	9,380 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
50.00	1,727	0	0
52.00	3,014	4,741	4,741
53.00	6,264	4,639	9,380

Device	Routing	Invert	Outlet Devices
#1	Primary	51.50'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Discarded	50.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.45 cfs @ 12.57 hrs HW=50.99' (Free Discharge)

↑2=Exfiltration (Exfiltration Controls 0.45 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.00' TW=48.30' (Dynamic Tailwater)

↑1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond Pond 2-2: Pond 2-2

Inflow Area = 5.854 ac, 30.00% Impervious, Inflow Depth > 1.86" for 100-Year event
 Inflow = 9.37 cfs @ 12.03 hrs, Volume= 0.909 af
 Outflow = 3.56 cfs @ 12.36 hrs, Volume= 0.909 af, Atten= 62%, Lag= 20.0 min
 Discarded = 1.43 cfs @ 12.36 hrs, Volume= 0.835 af
 Primary = 2.13 cfs @ 12.36 hrs, Volume= 0.075 af

12013 Post - Offsite

Type III 24-hr 100-Year Rainfall=6.70"

Prepared by {enter your company name here}

Printed 8/23/2016

HydroCAD® 10.00 s/n 01151 © 2013 HydroCAD Software Solutions LLC

Page 188

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 39.48' @ 12.36 hrs Surf.Area= 7,472 sf Storage= 9,165 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 35.1 min (800.2 - 765.1)

Volume	Invert	Avail.Storage	Storage Description
#1	38.00'	13,302 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
38.00	4,933	0	0
40.00	8,369	13,302	13,302

Device	Routing	Invert	Outlet Devices
#1	Primary	39.50'	10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	38.00'	8.270 in/hr Exfiltration over Surface area
#3	Primary	39.25'	18.0" x 18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=1.43 cfs @ 12.36 hrs HW=39.48' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 1.43 cfs)

Primary OutFlow Max=2.11 cfs @ 12.36 hrs HW=39.48' TW=36.84' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
 ↳ **3=Orifice/Grate** (Weir Controls 2.11 cfs @ 1.56 fps)