



SUPPLEMENTAL DRAINAGE REPORT
September 8, 2017
The Village at Norfolk

This supplemental drainage report was prepared in response to additional information as requested by the Norfolk Zoning Board and review engineer, specifically to provide calculations for additional design storms and to assess groundwater mounding conditions beneath some of the proposed drainage leaching beds. Therefore, the attached info is provided as an update to the August 14, 2017 Supplemental Drainage Report:

- runoff and infiltration/leaching bed calculations for both pre-development and post-development for the 2, 10, 25 and 100-year storms (see Appendices B-1 and B-2).
- Post-development Drainage Map (Appendix C).

Please note changes were made to the 8-14-17 calculations to correspond with the D'Amore Associates Mounding Analysis performed for drainage Leaching Beds LC-1, 2B, 3 and 4A, where LC-2 was combined into LC-2B, and LC-2A-2 was adjusted to provide 4 ft. separation to groundwater.

Please note, there is no increase in offsite runoff conditions for any of the design storms based on a comparison of the pre-development and post-development calculations as summarized in the following table.

SUPPLEMENTAL DRAINAGE REPORT

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The Village at Norfolk

Comparison of Pre- & Post-Development Runoff Rates

Design Point 1 – Flow to depression @ North of driveway

	<u>Pre development</u>	<u>Post development</u>
	Rate & Volume	Rate & Volume
<u>2 Year Storm (3.20")</u>	0.31 cfs	0.00* cfs
• To Design Point 1	0.031 af	0.00 af
<u>10 Year Storm (4.65")</u>	0.99 cfs	0.00* cfs
• To Design Point 1	0.076 af	0.00 af
<u>25 Year Storm (5.50")</u>	1.47 cfs	0.00* cfs
• To Design Point 1	0.108 af	0.00 af
<u>100 Year Storm (6.70")</u>		
• To Design Point 1	2.20 cfs 0.158 af	0.00* cfs 0.00 af

Design Point 2 – Flow to depression South of driveway

	<u>Pre development</u>	<u>Post development</u>
	Rate & Volume	Rate & Volume
<u>2 Year Storm (3.20")</u>	0.16 cfs	0.00 cfs
• To Design Point 2	0.14 af	0.0001 af
<u>10 Year Storm (4.65")</u>	0.43 cfs	0.02 cfs
• To Design Point 2	0.031 af	0.0001 af
<u>25 Year Storm (5.50")</u>	0.60 cfs	0.03 cfs
• To Design Point 2	0.43 af	0.0002 af
<u>100 Year Storm (6.70")</u>		
• To Design Point 2	0.87 cfs 0.62 af	0.04 cfs 0.0003 af

Design Point 3 – Flow to Corner of N/F Coyne and Gross

	<u>Pre development</u>	<u>Post development</u>
	Rate & Volume	Rate & Volume
<u>2 Year Storm (3.20")</u>	0.58 cfs	0.43 cfs
• To Design Point 3	0.111 af	0.025 af
<u>10 Year Storm (4.65")</u>	2.78 cfs	2.78 cfs
• To Design Point 3	0.332 af	0.127 af
<u>25 Year Storm (5.50")</u>	4.59 cfs	4.56 cfs
• To Design Point 3	0.496 af	0.213 af
<u>100 Year Storm (6.70")</u>		
• To Design Point 3	7.51 cfs 0.761 af	6.95 cfs 0.350 af

Design Point 4 – Flow to existing town basin

	<u>Pre development</u>	<u>Post development</u>
	Rate & Volume	Rate & Volume
<u>2 Year Storm (3.20")</u>	0.00 cfs	0.00 cfs
• To Design Point 4	0.00 af	0.00 af
<u>10 Year Storm (4.65")</u>	0.05 cfs	0.03 cfs
• To Design Point 4	0.03 af	0.02 af
<u>25 Year Storm (5.50")</u>	0.26 cfs	0.15 cfs
• To Design Point 4	0.066 af	0.043 af
<u>100 Year Storm (6.70")</u>		
• To Design Point 4	0.79 cfs 0.136 af	0.47 cfs 0.088 af

Design Point 5 – Flow to depression at rear of property

	<u>Pre development</u>	<u>Post development</u>
	Rate & Volume	Rate & Volume
<u>2 Year Storm (3.20")</u>	0.00 cfs	0.00** cfs
• To Design Point 5	0.00 af	0.00** af
<u>10 Year Storm (4.65")</u>	0.03 cfs	0.00** cfs
• To Design Point 5	0.018 af	0.00** af
<u>25 Year Storm (5.50")</u>	0.14 cfs	0.00** cfs
• To Design Point 5	0.041 af	0.00**af
<u>100 Year Storm (6.70")</u>		
• To Design Point 5	0.48 cfs 0.087 af	0.00** cfs 0.00** af

* Runoff to Design Point 1 is contained within leaching chamber LC10A.

** Runoff to Design Point 5 is contained onsite and recharged within the natural depression which is modeled as pond 8P in the post-development calcs.

Appendix B-1
PRE-DEVELOPMENT HYDROLOGY CALCULATIONS



EDA-4 with areas



EDA-5



Flow to depression @
stone wall in rear



EDA-4



EDA-3



EDA-1



Flow to Depression left
of Drive @ Rockwood



EDA-2



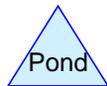
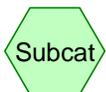
Flow to Depression right
of Drive @ Rockwood



Flow to Corner of N/F
Coyne and Gross



existing detention basin



Routing Diagram for OE-3012 Pre 4.27.17

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.525	39	>75% Grass cover, Good, HSG A ("4S", 3S, 5S)
2.167	61	>75% Grass cover, Good, HSG B ("4S", 1S, 2S, 3S, 5S)
0.061	98	Roofs, HSG B (5S)
2.965	30	Woods, Good, HSG A ("4S", 3S, 5S)
2.636	55	Woods, Good, HSG B ("4S", 1S, 3S, 5S)
0.319	32	Woods/grass comb., Good, HSG A ("4S")
0.108	98	ex driveway (1S, 2S)
0.143	98	ex roof (3S)
0.139	98	ex. drive (3S)
2.222	40	weighted curve number per TR-55 (4S)
11.286	47	TOTAL AREA

Summary for Subcatchment "4S": EDA-4 with areas

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
72,430	30	Woods, Good, HSG A
2,307	61	>75% Grass cover, Good, HSG B
3,828	39	>75% Grass cover, Good, HSG A
4,303	55	Woods, Good, HSG B
13,912	32	Woods/grass comb., Good, HSG A
96,780	32	Weighted Average
96,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	410	0.0280	2.69		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
13.0	460	Total			

Summary for Subcatchment 1S: EDA-1

Runoff = 0.31 cfs @ 12.11 hrs, Volume= 0.031 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 3,119	98	ex driveway
20,298	61	>75% Grass cover, Good, HSG B
7,374	55	Woods, Good, HSG B
30,791	63	Weighted Average
27,672		89.87% Pervious Area
3,119		10.13% Impervious Area

OE-3012 Pre 4.27.17

Type III 24-hr 2 yr Rainfall=3.20"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0900	0.27		Sheet Flow, AB Grass: Short n= 0.150 P2= 3.20"
0.6	164	0.0900	4.83		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
1.7	290	0.0200	2.87		Shallow Concentrated Flow, cd Paved Kv= 20.3 fps
0.3	50	0.0400	3.22		Shallow Concentrated Flow, de Unpaved Kv= 16.1 fps
5.7	554	Total			

Summary for Subcatchment 2S: EDA-2

Runoff = 0.16 cfs @ 12.10 hrs, Volume= 0.014 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
1,600	98	ex driveway
8,887	61	>75% Grass cover, Good, HSG B
10,487	67	Weighted Average
8,887		84.74% Pervious Area
1,600		15.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0900	0.27		Sheet Flow, AB Grass: Short n= 0.150 P2= 3.20"
0.6	164	0.0900	4.83		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
1.7	290	0.0200	2.87		Shallow Concentrated Flow, cd Paved Kv= 20.3 fps
0.3	50	0.0400	3.22		Shallow Concentrated Flow, de Unpaved Kv= 16.1 fps
5.7	554	Total			

Summary for Subcatchment 3S: EDA-3

Runoff = 0.58 cfs @ 12.43 hrs, Volume= 0.111 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 6,046	98	ex. drive
* 6,246	98	ex roof
100,347	55	Woods, Good, HSG B
54,767	61	>75% Grass cover, Good, HSG B
5,879	39	>75% Grass cover, Good, HSG A
14,644	30	Woods, Good, HSG A
187,929	57	Weighted Average
175,637		93.46% Pervious Area
12,292		6.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0280	0.08		Sheet Flow, AB Woods: Light underbrush n= 0.400 P2= 3.20"
4.5	621	0.0200	2.28		Shallow Concentrated Flow, BC Unpaved Kv= 16.1 fps
15.3	671	Total			

Summary for Subcatchment 4S: EDA-4

Runoff = 0.00 cfs @ 23.99 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 96,780	40	weighted curve number per TR-55
96,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	410	0.0280	2.69		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
13.0	460	Total			

Summary for Subcatchment 5S: EDA-5

Runoff = 0.00 cfs @ 24.03 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
2,652	98	Roofs, HSG B
8,128	61	>75% Grass cover, Good, HSG B
13,177	39	>75% Grass cover, Good, HSG A
42,101	30	Woods, Good, HSG A
2,800	55	Woods, Good, HSG B
68,858	39	Weighted Average
66,206		96.15% Pervious Area
2,652		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	392	0.0270	2.65		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
13.0	442	Total			

Summary for Reach 1R: Flow to Depression left of Drive @ Rockwood

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

Inflow Area = 0.707 ac, 10.13% Impervious, Inflow Depth = 0.52" for 2 yr event
 Inflow = 0.31 cfs @ 12.11 hrs, Volume= 0.031 af
 Outflow = 0.31 cfs @ 12.11 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: Flow to Depression right of Drive @ Rockwood

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

Inflow Area = 0.241 ac, 15.26% Impervious, Inflow Depth = 0.69" for 2 yr event
 Inflow = 0.16 cfs @ 12.10 hrs, Volume= 0.014 af
 Outflow = 0.16 cfs @ 12.10 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: Flow to Corner of N/F Coyne and Gross

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

Inflow Area = 4.314 ac, 6.54% Impervious, Inflow Depth = 0.31" for 2 yr event
 Inflow = 0.58 cfs @ 12.43 hrs, Volume= 0.111 af
 Outflow = 0.58 cfs @ 12.43 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: Flow to depression @ stone wall in rear

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

Inflow Area = 1.581 ac, 3.85% Impervious, Inflow Depth = 0.00" for 2 yr event
 Inflow = 0.00 cfs @ 24.03 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.03 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: existing detention basin

Inflow Area = 2.222 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2 yr event
 Inflow = 0.00 cfs @ 23.99 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Atten= 0%, Lag= 1.5 min
 Discarded = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.00' @ 24.02 hrs Surf.Area= 1,882 sf Storage= 0 cf

Plug-Flow detention time=2.9 min calculated for 0.000 af (100% of inflow)
 Center-of-Mass det. time=2.9 min (1,331.3 - 1,328.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	208.00'	42,696 cf	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
208.00	1,882	211.0	0	0	1,882
209.00	7,002	471.0	4,171	4,171	15,997
213.00	12,526	578.0	38,524	42,696	25,172

Device	Routing	Invert	Outlet Devices
#1	Primary	208.42'	30.0" Round Culvert L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 208.42' / 207.92' S= 0.0100 '/ Cc= 0.900 n= 0.030 Corrugated metal, Flow Area= 4.91 sf
#2	Discarded	208.00'	12.060 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.53 cfs @ 24.02 hrs HW=208.00' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.53 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.00' (Free Discharge)
 ↑**1=Culvert** (Controls 0.00 cfs)

Summary for Subcatchment "4S": EDA-4 with areas

Runoff = 0.00 cfs @ 23.30 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
72,430	30	Woods, Good, HSG A
2,307	61	>75% Grass cover, Good, HSG B
3,828	39	>75% Grass cover, Good, HSG A
4,303	55	Woods, Good, HSG B
13,912	32	Woods/grass comb., Good, HSG A
96,780	32	Weighted Average
96,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	410	0.0280	2.69		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
13.0	460	Total			

Summary for Subcatchment 1S: EDA-1

Runoff = 0.99 cfs @ 12.09 hrs, Volume= 0.076 af, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
* 3,119	98	ex driveway
20,298	61	>75% Grass cover, Good, HSG B
7,374	55	Woods, Good, HSG B
30,791	63	Weighted Average
27,672		89.87% Pervious Area
3,119		10.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0900	0.27		Sheet Flow, AB
					Grass: Short n= 0.150 P2= 3.20"
0.6	164	0.0900	4.83		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
1.7	290	0.0200	2.87		Shallow Concentrated Flow, cd
					Paved Kv= 20.3 fps
0.3	50	0.0400	3.22		Shallow Concentrated Flow, de
					Unpaved Kv= 16.1 fps
5.7	554	Total			

Summary for Subcatchment 2S: EDA-2

Runoff = 0.43 cfs @ 12.09 hrs, Volume= 0.031 af, Depth= 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
* 1,600	98	ex driveway
8,887	61	>75% Grass cover, Good, HSG B
10,487	67	Weighted Average
8,887		84.74% Pervious Area
1,600		15.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0900	0.27		Sheet Flow, AB
					Grass: Short n= 0.150 P2= 3.20"
0.6	164	0.0900	4.83		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
1.7	290	0.0200	2.87		Shallow Concentrated Flow, cd
					Paved Kv= 20.3 fps
0.3	50	0.0400	3.22		Shallow Concentrated Flow, de
					Unpaved Kv= 16.1 fps
5.7	554	Total			

Summary for Subcatchment 3S: EDA-3

Runoff = 2.78 cfs @ 12.25 hrs, Volume= 0.332 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
* 6,046	98	ex. drive
* 6,246	98	ex roof
100,347	55	Woods, Good, HSG B
54,767	61	>75% Grass cover, Good, HSG B
5,879	39	>75% Grass cover, Good, HSG A
14,644	30	Woods, Good, HSG A
187,929	57	Weighted Average
175,637		93.46% Pervious Area
12,292		6.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0280	0.08		Sheet Flow, AB
					Woods: Light underbrush n= 0.400 P2= 3.20"
4.5	621	0.0200	2.28		Shallow Concentrated Flow, BC
					Unpaved Kv= 16.1 fps
15.3	671	Total			

Summary for Subcatchment 4S: EDA-4

Runoff = 0.05 cfs @ 13.74 hrs, Volume= 0.030 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
* 96,780	40	weighted curve number per TR-55
96,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	410	0.0280	2.69		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
13.0	460	Total			

Summary for Subcatchment 5S: EDA-5

Runoff = 0.03 cfs @ 13.91 hrs, Volume= 0.018 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
2,652	98	Roofs, HSG B
8,128	61	>75% Grass cover, Good, HSG B
13,177	39	>75% Grass cover, Good, HSG A
42,101	30	Woods, Good, HSG A
2,800	55	Woods, Good, HSG B
68,858	39	Weighted Average
66,206		96.15% Pervious Area
2,652		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	392	0.0270	2.65		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
13.0	442	Total			

Summary for Reach 1R: Flow to Depression left of Drive @ Rockwood

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

Inflow Area = 0.707 ac, 10.13% Impervious, Inflow Depth = 1.29" for 10 yr event
 Inflow = 0.99 cfs @ 12.09 hrs, Volume= 0.076 af
 Outflow = 0.99 cfs @ 12.09 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: Flow to Depression right of Drive @ Rockwood

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

Inflow Area = 0.241 ac, 15.26% Impervious, Inflow Depth = 1.56" for 10 yr event
 Inflow = 0.43 cfs @ 12.09 hrs, Volume= 0.031 af
 Outflow = 0.43 cfs @ 12.09 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: Flow to Corner of N/F Coyne and Gross

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

Inflow Area = 4.314 ac, 6.54% Impervious, Inflow Depth = 0.92" for 10 yr event
 Inflow = 2.78 cfs @ 12.25 hrs, Volume= 0.332 af
 Outflow = 2.78 cfs @ 12.25 hrs, Volume= 0.332 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: Flow to depression @ stone wall in rear

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

Inflow Area = 1.581 ac, 3.85% Impervious, Inflow Depth = 0.13" for 10 yr event
 Inflow = 0.03 cfs @ 13.91 hrs, Volume= 0.018 af
 Outflow = 0.03 cfs @ 13.91 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: existing detention basin

Inflow Area = 2.222 ac, 0.00% Impervious, Inflow Depth = 0.16" for 10 yr event
 Inflow = 0.05 cfs @ 13.74 hrs, Volume= 0.030 af
 Outflow = 0.05 cfs @ 13.80 hrs, Volume= 0.030 af, Atten= 0%, Lag= 3.6 min
 Discarded = 0.05 cfs @ 13.80 hrs, Volume= 0.030 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.00' @ 13.80 hrs Surf.Area= 1,898 sf Storage= 8 cf

Plug-Flow detention time=2.9 min calculated for 0.030 af (100% of inflow)
 Center-of-Mass det. time=2.9 min (1,031.0 - 1,028.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	208.00'	42,696 cf	Custom Stage Data (Irregular) listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
208.00	1,882	211.0	0	0	1,882
209.00	7,002	471.0	4,171	4,171	15,997
213.00	12,526	578.0	38,524	42,696	25,172

Device	Routing	Invert	Outlet Devices
#1	Primary	208.42'	30.0" Round Culvert L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 208.42' / 207.92' S= 0.0100 '/' Cc= 0.900 n= 0.030 Corrugated metal, Flow Area= 4.91 sf
#2	Discarded	208.00'	12.060 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.53 cfs @ 13.80 hrs HW=208.00' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.53 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.00' (Free Discharge)
 ↑ **1=Culvert** (Controls 0.00 cfs)

Summary for Subcatchment "4S": EDA-4 with areas

Runoff = 0.02 cfs @ 15.56 hrs, Volume= 0.013 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
72,430	30	Woods, Good, HSG A
2,307	61	>75% Grass cover, Good, HSG B
3,828	39	>75% Grass cover, Good, HSG A
4,303	55	Woods, Good, HSG B
13,912	32	Woods/grass comb., Good, HSG A
96,780	32	Weighted Average
96,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	410	0.0280	2.69		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
13.0	460	Total			

Summary for Subcatchment 1S: EDA-1

Runoff = 1.47 cfs @ 12.09 hrs, Volume= 0.108 af, Depth= 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
* 3,119	98	ex driveway
20,298	61	>75% Grass cover, Good, HSG B
7,374	55	Woods, Good, HSG B
30,791	63	Weighted Average
27,672		89.87% Pervious Area
3,119		10.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0900	0.27		Sheet Flow, AB Grass: Short n= 0.150 P2= 3.20"
0.6	164	0.0900	4.83		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
1.7	290	0.0200	2.87		Shallow Concentrated Flow, cd Paved Kv= 20.3 fps
0.3	50	0.0400	3.22		Shallow Concentrated Flow, de Unpaved Kv= 16.1 fps
5.7	554	Total			

Summary for Subcatchment 2S: EDA-2

Runoff = 0.60 cfs @ 12.09 hrs, Volume= 0.043 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
* 1,600	98	ex driveway
8,887	61	>75% Grass cover, Good, HSG B
10,487	67	Weighted Average
8,887		84.74% Pervious Area
1,600		15.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0900	0.27		Sheet Flow, AB
					Grass: Short n= 0.150 P2= 3.20"
0.6	164	0.0900	4.83		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
1.7	290	0.0200	2.87		Shallow Concentrated Flow, cd
					Paved Kv= 20.3 fps
0.3	50	0.0400	3.22		Shallow Concentrated Flow, de
					Unpaved Kv= 16.1 fps
5.7	554	Total			

Summary for Subcatchment 3S: EDA-3

Runoff = 4.59 cfs @ 12.24 hrs, Volume= 0.496 af, Depth= 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
* 6,046	98	ex. drive
* 6,246	98	ex roof
100,347	55	Woods, Good, HSG B
54,767	61	>75% Grass cover, Good, HSG B
5,879	39	>75% Grass cover, Good, HSG A
14,644	30	Woods, Good, HSG A
187,929	57	Weighted Average
175,637		93.46% Pervious Area
12,292		6.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0280	0.08		Sheet Flow, AB
					Woods: Light underbrush n= 0.400 P2= 3.20"
4.5	621	0.0200	2.28		Shallow Concentrated Flow, BC
					Unpaved Kv= 16.1 fps
15.3	671	Total			

Summary for Subcatchment 4S: EDA-4

Runoff = 0.26 cfs @ 12.48 hrs, Volume= 0.066 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
* 96,780	40	weighted curve number per TR-55
96,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	410	0.0280	2.69		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
13.0	460	Total			

Summary for Subcatchment 5S: EDA-5

Runoff = 0.14 cfs @ 12.50 hrs, Volume= 0.041 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
2,652	98	Roofs, HSG B
8,128	61	>75% Grass cover, Good, HSG B
13,177	39	>75% Grass cover, Good, HSG A
42,101	30	Woods, Good, HSG A
2,800	55	Woods, Good, HSG B
68,858	39	Weighted Average
66,206		96.15% Pervious Area
2,652		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	392	0.0270	2.65		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
13.0	442	Total			

Summary for Reach 1R: Flow to Depression left of Drive @ Rockwood

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

Inflow Area = 0.707 ac, 10.13% Impervious, Inflow Depth = 1.83" for 25 yr event
 Inflow = 1.47 cfs @ 12.09 hrs, Volume= 0.108 af
 Outflow = 1.47 cfs @ 12.09 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: Flow to Depression right of Drive @ Rockwood

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

Inflow Area = 0.241 ac, 15.26% Impervious, Inflow Depth = 2.16" for 25 yr event
 Inflow = 0.60 cfs @ 12.09 hrs, Volume= 0.043 af
 Outflow = 0.60 cfs @ 12.09 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: Flow to Corner of N/F Coyne and Gross

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

Inflow Area = 4.314 ac, 6.54% Impervious, Inflow Depth = 1.38" for 25 yr event
 Inflow = 4.59 cfs @ 12.24 hrs, Volume= 0.496 af
 Outflow = 4.59 cfs @ 12.24 hrs, Volume= 0.496 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: Flow to depression @ stone wall in rear

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

Inflow Area = 1.581 ac, 3.85% Impervious, Inflow Depth = 0.31" for 25 yr event
 Inflow = 0.14 cfs @ 12.50 hrs, Volume= 0.041 af
 Outflow = 0.14 cfs @ 12.50 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: existing detention basin

Inflow Area = 2.222 ac, 0.00% Impervious, Inflow Depth = 0.36" for 25 yr event
 Inflow = 0.26 cfs @ 12.48 hrs, Volume= 0.066 af
 Outflow = 0.25 cfs @ 12.53 hrs, Volume= 0.066 af, Atten= 3%, Lag= 2.8 min
 Discarded = 0.25 cfs @ 12.53 hrs, Volume= 0.066 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.02' @ 12.53 hrs Surf.Area= 1,960 sf Storage= 42 cf

Plug-Flow detention time=2.9 min calculated for 0.066 af (100% of inflow)
 Center-of-Mass det. time=2.9 min (979.4 - 976.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	208.00'	42,696 cf	Custom Stage Data (Irregular) listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
208.00	1,882	211.0	0	0	1,882
209.00	7,002	471.0	4,171	4,171	15,997
213.00	12,526	578.0	38,524	42,696	25,172

Device	Routing	Invert	Outlet Devices
#1	Primary	208.42'	30.0" Round Culvert L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 208.42' / 207.92' S= 0.0100 '/ Cc= 0.900 n= 0.030 Corrugated metal, Flow Area= 4.91 sf
#2	Discarded	208.00'	12.060 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.55 cfs @ 12.53 hrs HW=208.02' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.55 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.00' (Free Discharge)
 ↑ **1=Culvert** (Controls 0.00 cfs)

Summary for Subcatchment "4S": EDA-4 with areas

Runoff = 0.08 cfs @ 12.93 hrs, Volume= 0.047 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
72,430	30	Woods, Good, HSG A
2,307	61	>75% Grass cover, Good, HSG B
3,828	39	>75% Grass cover, Good, HSG A
4,303	55	Woods, Good, HSG B
13,912	32	Woods/grass comb., Good, HSG A
96,780	32	Weighted Average
96,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	410	0.0280	2.69		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
13.0	460	Total			

Summary for Subcatchment 1S: EDA-1

Runoff = 2.20 cfs @ 12.09 hrs, Volume= 0.158 af, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 3,119	98	ex driveway
20,298	61	>75% Grass cover, Good, HSG B
7,374	55	Woods, Good, HSG B
30,791	63	Weighted Average
27,672		89.87% Pervious Area
3,119		10.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0900	0.27		Sheet Flow, AB Grass: Short n= 0.150 P2= 3.20"
0.6	164	0.0900	4.83		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
1.7	290	0.0200	2.87		Shallow Concentrated Flow, cd Paved Kv= 20.3 fps
0.3	50	0.0400	3.22		Shallow Concentrated Flow, de Unpaved Kv= 16.1 fps
5.7	554	Total			

Summary for Subcatchment 2S: EDA-2

Runoff = 0.87 cfs @ 12.09 hrs, Volume= 0.062 af, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 1,600	98	ex driveway
8,887	61	>75% Grass cover, Good, HSG B
10,487	67	Weighted Average
8,887		84.74% Pervious Area
1,600		15.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0900	0.27		Sheet Flow, AB
					Grass: Short n= 0.150 P2= 3.20"
0.6	164	0.0900	4.83		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
1.7	290	0.0200	2.87		Shallow Concentrated Flow, cd
					Paved Kv= 20.3 fps
0.3	50	0.0400	3.22		Shallow Concentrated Flow, de
					Unpaved Kv= 16.1 fps
5.7	554	Total			

Summary for Subcatchment 3S: EDA-3

Runoff = 7.51 cfs @ 12.22 hrs, Volume= 0.761 af, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 6,046	98	ex. drive
* 6,246	98	ex roof
100,347	55	Woods, Good, HSG B
54,767	61	>75% Grass cover, Good, HSG B
5,879	39	>75% Grass cover, Good, HSG A
14,644	30	Woods, Good, HSG A
187,929	57	Weighted Average
175,637		93.46% Pervious Area
12,292		6.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0280	0.08		Sheet Flow, AB
					Woods: Light underbrush n= 0.400 P2= 3.20"
4.5	621	0.0200	2.28		Shallow Concentrated Flow, BC
					Unpaved Kv= 16.1 fps
15.3	671	Total			

Summary for Subcatchment 4S: EDA-4

Runoff = 0.79 cfs @ 12.35 hrs, Volume= 0.136 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 96,780	40	weighted curve number per TR-55
96,780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	410	0.0280	2.69		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
13.0	460	Total			

Summary for Subcatchment 5S: EDA-5

Runoff = 0.48 cfs @ 12.38 hrs, Volume= 0.087 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
2,652	98	Roofs, HSG B
8,128	61	>75% Grass cover, Good, HSG B
13,177	39	>75% Grass cover, Good, HSG A
42,101	30	Woods, Good, HSG A
2,800	55	Woods, Good, HSG B
68,858	39	Weighted Average
66,206		96.15% Pervious Area
2,652		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0300	0.08		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
2.5	392	0.0270	2.65		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
13.0	442	Total			

Summary for Reach 1R: Flow to Depression left of Drive @ Rockwood

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

Inflow Area = 0.707 ac, 10.13% Impervious, Inflow Depth = 2.68" for 100 yr event
 Inflow = 2.20 cfs @ 12.09 hrs, Volume= 0.158 af
 Outflow = 2.20 cfs @ 12.09 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: Flow to Depression right of Drive @ Rockwood

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

Inflow Area = 0.241 ac, 15.26% Impervious, Inflow Depth = 3.07" for 100 yr event
 Inflow = 0.87 cfs @ 12.09 hrs, Volume= 0.062 af
 Outflow = 0.87 cfs @ 12.09 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: Flow to Corner of N/F Coyne and Gross

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

Inflow Area = 4.314 ac, 6.54% Impervious, Inflow Depth = 2.12" for 100 yr event
 Inflow = 7.51 cfs @ 12.22 hrs, Volume= 0.761 af
 Outflow = 7.51 cfs @ 12.22 hrs, Volume= 0.761 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Reach 5R: Flow to depression @ stone wall in rear

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

Inflow Area = 1.581 ac, 3.85% Impervious, Inflow Depth = 0.66" for 100 yr event
 Inflow = 0.48 cfs @ 12.38 hrs, Volume= 0.087 af
 Outflow = 0.48 cfs @ 12.38 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: existing detention basin

Inflow Area = 2.222 ac, 0.00% Impervious, Inflow Depth = 0.73" for 100 yr event
 Inflow = 0.79 cfs @ 12.35 hrs, Volume= 0.136 af
 Outflow = 0.64 cfs @ 12.54 hrs, Volume= 0.136 af, Atten= 18%, Lag= 11.2 min
 Discarded = 0.64 cfs @ 12.54 hrs, Volume= 0.136 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.12' @ 12.54 hrs Surf.Area= 2,308 sf Storage= 242 cf

Plug-Flow detention time=3.3 min calculated for 0.136 af (100% of inflow)
 Center-of-Mass det. time= 3.3 min (940.9 - 937.6)

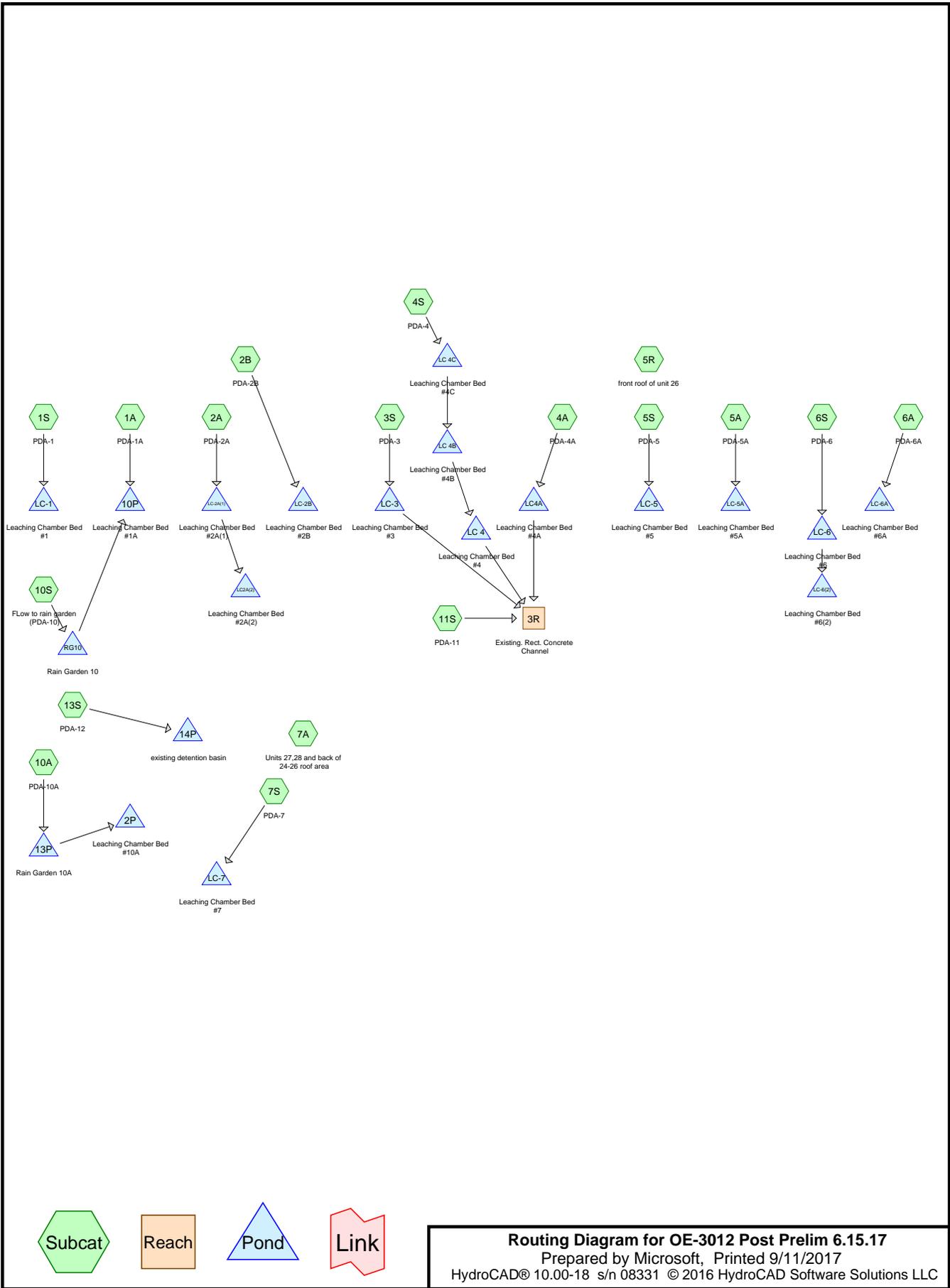
Volume	Invert	Avail.Storage	Storage Description			
#1	208.00'	42,696 cf	Custom Stage Data (Irregular) listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
208.00	1,882	211.0	0	0	1,882	
209.00	7,002	471.0	4,171	4,171	15,997	
213.00	12,526	578.0	38,524	42,696	25,172	

Device	Routing	Invert	Outlet Devices
#1	Primary	208.42'	30.0" Round Culvert L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 208.42' / 207.92' S= 0.0100 '/ Cc= 0.900 n= 0.030 Corrugated metal, Flow Area= 4.91 sf
#2	Discarded	208.00'	12.060 in/hr Exfiltration over Surface area

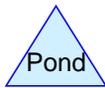
Discarded OutFlow Max=0.64 cfs @ 12.54 hrs HW=208.12' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.64 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.00' (Free Discharge)
 ↑ **1=Culvert** (Controls 0.00 cfs)

Appendix B-2
POST-DEVELOPMENT HYDROLOGY CALCULATIONS



Reach



Routing Diagram for OE-3012 Post Prelim 6.15.17
 Prepared by Microsoft, Printed 9/11/2017
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OE-3012 Post Prelim 6.15.17

Prepared by Microsoft

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.606	39	>75% Grass cover, Good, HSG A (1A, 4A, 4S, 6A, 6S, 7S, 11S, 13S)
2.355	61	>75% Grass cover, Good, HSG B (1S, 2A, 2B, 3S, 4A, 4S, 5A, 5S, 6A, 6S, 7S, 10A, 10S, 11S)
0.343	98	HSG A (sidewalks,road,deck,patio) (7S)
0.133	98	HSG B (sidewalks,road,deck,patio) (5A)
0.061	98	HSG B (sidewalks,road,deck,patio,roofs) (5S)
0.055	98	Patios (6S)
0.102	98	Pavement, HSG B (3S)
0.217	98	Pavement/sidewalks, HSG A (1A, 1S)
0.126	98	Roads HSG B (6S)
0.145	98	Roads/swalks, HSG B (2A)
0.101	98	Roads/swalks, roofs, HSG B (2B)
0.076	98	Roofs (5R, 7A)
0.130	98	Roofs, HSG A (1A, 1S, 13S)
0.348	98	Roofs, HSG B (2A, 3S, 4S, 10A, 10S)
0.055	98	Roofs/drives, HSG B (11S)
0.495	98	Unconnected pavement, HSG B (sidewalks,road,deck,patio) (4A, 4S)
0.053	98	Unconnected roofs, HSG A (4A)
0.092	98	Unconnected roofs, HSG A (deck,patio) (13S)
0.092	98	Unconnected roofs, HSG B (6A, 6S)
0.361	30	Woods, Good, HSG A (11S, 13S)
0.310	55	Woods, Good, HSG B (7S, 11S)
0.319	32	Woods/grass comb., Good, HSG A (13S)
0.207	58	Woods/grass comb., Good, HSG B (2B, 5A, 5S)
0.056	98	ex Roofs, HSG B (5A, 5S)
0.018	98	gar roofs (6S)
0.014	98	gazebo roof (5A)
0.089	98	roads/swalks (6A)
7.960	67	TOTAL AREA

Summary for Subcatchment 1A: PDA-1A

Runoff = 0.21 cfs @ 12.10 hrs, Volume= 0.017 af, Depth= 0.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 3,648	98	Pavement/sidewalks, HSG A
2,000	98	Roofs, HSG A
5,579	39	>75% Grass cover, Good, HSG A
11,227	69	Weighted Average
5,579		49.69% Pervious Area
5,648		50.31% Impervious Area

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

Summary for Subcatchment 1S: PDA-1

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 0.035 af, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 5,800	98	Pavement/sidewalks, HSG A
1,000	98	Roofs, HSG A
3,496	61	>75% Grass cover, Good, HSG B
10,296	85	Weighted Average
3,496		33.95% Pervious Area
6,800		66.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, ab
					Grass: Short n= 0.150 P2= 3.20"
1.2	200	0.0200	2.87		Shallow Concentrated Flow, bc
					Paved Kv= 20.3 fps
6.0	250	Total			

Summary for Subcatchment 2A: PDA-2A

Runoff = 0.72 cfs @ 12.12 hrs, Volume= 0.055 af, Depth= 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

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Type III 24-hr 2 yr Rainfall=3.20"

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Area (sf)	CN	Description
* 6,300	98	Roads/swalks, HSG B
7,290	61	>75% Grass cover, Good, HSG B
4,400	98	Roofs, HSG B
17,990	83	Weighted Average
7,290		40.52% Pervious Area
10,700		59.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
1.3	305	0.0400	4.06		Shallow Concentrated Flow, bc Paved Kv= 20.3 fps
8.4	355	Total			

Summary for Subcatchment 2B: PDA-2B

Runoff = 0.32 cfs @ 12.10 hrs, Volume= 0.024 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 4,399	98	Roads/swalks, roofs, HSG B
4,573	61	>75% Grass cover, Good, HSG B
4,049	58	Woods/grass comb., Good, HSG B
13,021	73	Weighted Average
8,622		66.22% Pervious Area
4,399		33.78% Impervious Area

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

Summary for Subcatchment 3S: PDA-3

Runoff = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 4,430	98	Pavement, HSG B
3,551	61	>75% Grass cover, Good, HSG B
* 2,032	98	Roofs, HSG B
10,013	85	Weighted Average
3,551		35.46% Pervious Area
6,462		64.54% Impervious Area

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

Summary for Subcatchment 4A: PDA-4A

Runoff = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af, Depth= 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
1,591	61	>75% Grass cover, Good, HSG B
* 6,155	98	Unconnected pavement, HSG B (sidewalks,road,deck,patio)
942	39	>75% Grass cover, Good, HSG A
2,440	61	>75% Grass cover, Good, HSG B
2,300	98	Unconnected roofs, HSG A
13,428	83	Weighted Average
4,973		37.03% Pervious Area
8,455		62.97% Impervious Area
8,455		100.00% Unconnected

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

Summary for Subcatchment 4S: PDA-4

Runoff = 1.46 cfs @ 12.10 hrs, Volume= 0.107 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
22,163	61	>75% Grass cover, Good, HSG B
5,355	98	Roofs, HSG B
* 15,394	98	Unconnected pavement, HSG B (sidewalks,road,deck,patio)
942	39	>75% Grass cover, Good, HSG A
43,854	78	Weighted Average
23,105		52.69% Pervious Area
20,749		47.31% Impervious Area
15,394		74.19% Unconnected

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Type III 24-hr 2 yr Rainfall=3.20"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	26	0.0580	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
0.1	5	0.0500	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.20"
1.8	19	0.0500	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
0.0	10	0.0440	3.38		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.1	11	0.0270	3.34		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	110	0.0310	2.83		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.0	7	0.0290	3.46		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.7	104	0.0250	2.55		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	59	0.0310	3.57		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	17	0.0350	3.01		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	87	0.0450	4.31		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.2	455	Total			

Summary for Subcatchment 5A: PDA-5A

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.041 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
6,896	61	>75% Grass cover, Good, HSG B
* 1,621	98	ex Roofs, HSG B
* 5,815	98	HSG B (sidewalks,road,deck,patio)
2,961	58	Woods/grass comb., Good, HSG B
* 600	98	gazebo roof
17,893	77	Weighted Average
9,857		55.09% Pervious Area
8,036		44.91% Impervious Area

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

Summary for Subcatchment 5R: front roof of unit 26

Runoff = 0.03 cfs @ 12.08 hrs, Volume= 0.002 af, Depth= 2.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 400	98	Roofs
400		100.00% Impervious Area

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

Summary for Subcatchment 5S: PDA-5

Runoff = 0.27 cfs @ 12.10 hrs, Volume= 0.021 af, Depth= 0.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
6,991	61	>75% Grass cover, Good, HSG B
* 840	98	ex Roofs, HSG B
* 2,660	98	HSG B (sidewalks,road,deck,patio,roofs)
2,000	58	Woods/grass comb., Good, HSG B
12,491	71	Weighted Average
8,991		71.98% Pervious Area
3,500		28.02% Impervious Area

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

Summary for Subcatchment 6A: PDA-6A

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.027 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 3,885	98	roads/swalks
3,115	98	Unconnected roofs, HSG B
3,204	39	>75% Grass cover, Good, HSG A
382	61	>75% Grass cover, Good, HSG B
10,586	79	Weighted Average
3,586		33.87% Pervious Area
7,000		66.13% Impervious Area
3,115		44.50% Unconnected

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

Summary for Subcatchment 6S: PDA-6

Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 5,500	98	Roads HSG B
887	98	Unconnected roofs, HSG B
* 2,400	98	Patios
3,716	61	>75% Grass cover, Good, HSG B
3,730	39	>75% Grass cover, Good, HSG A
* 790	98	gar roofs
17,023	77	Weighted Average
7,446		43.74% Pervious Area
9,577		56.26% Impervious Area
887		9.26% Unconnected

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

Summary for Subcatchment 7A: Units 27,28 and back of 24-26 roof area

Runoff = 0.21 cfs @ 12.08 hrs, Volume= 0.016 af, Depth= 2.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
* 2,900	98	Roofs
2,900		100.00% Impervious Area

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

Summary for Subcatchment 7S: PDA-7

Runoff = 0.55 cfs @ 12.10 hrs, Volume= 0.047 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
14,248	39	>75% Grass cover, Good, HSG A
* 14,932	98	HSG A (sidewalks,road,deck,patio)
5,106	61	>75% Grass cover, Good, HSG B
1,500	55	Woods, Good, HSG B
35,786	67	Weighted Average
20,854		58.27% Pervious Area
14,932		41.73% Impervious Area

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

Summary for Subcatchment 10A: PDA-10A

Runoff = 0.18 cfs @ 12.10 hrs, Volume= 0.016 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
14,275	61	>75% Grass cover, Good, HSG B
1,078	98	Roofs, HSG B
15,353	64	Weighted Average
14,275		92.98% Pervious Area
1,078		7.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0600	0.23		Sheet Flow, ab
					Grass: Short n= 0.150 P2= 3.20"
1.5	277	0.0380	3.14		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
5.1	327	Total			

Summary for Subcatchment 10S: FLOW to rain garden (PDA-10)

Runoff = 0.19 cfs @ 12.09 hrs, Volume= 0.014 af, Depth= 0.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
6,108	61	>75% Grass cover, Good, HSG B
2,312	98	Roofs, HSG B
8,420	71	Weighted Average
6,108		72.54% Pervious Area
2,312		27.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0600	0.23		Sheet Flow, ab Grass: Short n= 0.150 P2= 3.20"
1.5	277	0.0380	3.14		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
5.1	327	Total			

Summary for Subcatchment 11S: PDA-11

Runoff = 0.06 cfs @ 12.44 hrs, Volume= 0.016 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
9,901	39	>75% Grass cover, Good, HSG A
14,000	61	>75% Grass cover, Good, HSG B
5,000	30	Woods, Good, HSG A
12,000	55	Woods, Good, HSG B
* 2,400	98	Roofs/drives, HSG B
43,301	53	Weighted Average
40,901		94.46% Pervious Area
2,400		5.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0870	0.12		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
3.0	530	0.0330	2.92		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
9.9	580	Total			

Summary for Subcatchment 13S: PDA-12

Runoff = 0.00 cfs @ 23.99 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Adj	Description
31,415	39		>75% Grass cover, Good, HSG A
2,676	98		Roofs, HSG A
10,740	30		Woods, Good, HSG A
* 4,009	98		Unconnected roofs, HSG A (deck,patio)
13,912	32		Woods/grass comb., Good, HSG A
62,752	42	40	Weighted Average, UI Adjusted
56,067			89.35% Pervious Area
6,685			10.65% Impervious Area
4,009			59.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0156	0.06		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
6.6	320	0.0025	0.81		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
20.2	370	Total			

Summary for Reach 3R: Existing. Rect. Concrete Channel

Inflow Area = 2.539 ac, 34.42% Impervious, Inflow Depth = 0.12" for 2 yr event
 Inflow = 0.43 cfs @ 12.40 hrs, Volume= 0.025 af
 Outflow = 0.43 cfs @ 12.43 hrs, Volume= 0.025 af, Atten= 0%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.49 fps, Min. Travel Time= 1.0 min
 Avg. Velocity = 0.75 fps, Avg. Travel Time= 3.2 min

Peak Storage= 25 cf @ 12.41 hrs
 Average Depth at Peak Storage= 0.09'
 Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 17.02 cfs

2.00' x 1.00' deep channel, n= 0.011 Concrete pipe, straight & clean
 Length= 145.0' Slope= 0.0100 '/'
 Inlet Invert= 193.98', Outlet Invert= 192.53'



Summary for Pond 2P: Leaching Chamber Bed #10A

Inflow Area = 0.352 ac, 7.02% Impervious, Inflow Depth = 0.00" for 2 yr event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 191.00' @ 0.00 hrs Surf.Area= 0.016 ac Storage= 0.000 af

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

Volume	Invert	Avail.Storage	Storage Description
#1A	191.00'	0.021 af	14.33'W x 49.00'L x 3.96'H Field A 0.064 af Overall - 0.012 af Embedded = 0.052 af x 40.0% Voids
#2A	191.75'	0.012 af	Cultec R-280HD x 12 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 2 rows
		0.033 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	191.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=191.00' (Free Discharge)
 ↑**1=Exfiltration** (Passes 0.00 cfs of 0.04 cfs potential flow)

Summary for Pond 10P: Leaching Chamber Bed #1A

Inflow Area = 0.451 ac, 40.52% Impervious, Inflow Depth = 0.55" for 2 yr event
 Inflow = 0.38 cfs @ 12.10 hrs, Volume= 0.021 af
 Outflow = 0.05 cfs @ 12.02 hrs, Volume= 0.021 af, Atten= 86%, Lag= 0.0 min
 Discarded = 0.05 cfs @ 12.02 hrs, Volume= 0.021 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 192.32' @ 12.74 hrs Surf.Area= 0.021 ac Storage= 0.007 af

Plug-Flow detention time=46.7 min calculated for 0.021 af (100% of inflow)
 Center-of-Mass det. time= 46.7 min (900.2 - 853.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	191.50'	0.038 af	19.50'W x 47.37'L x 6.00'H Field A 0.127 af Overall - 0.033 af Embedded = 0.094 af x 40.0% Voids
#2A	192.50'	0.033 af	Cultec R-902HD x 22 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 2 Rows of 11 Chambers Cap Storage= +2.8 cf x 2 x 2 rows = 11.0 cf

0.071 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	191.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 12.02 hrs HW=191.56' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.05 cfs)

Summary for Pond 13P: Rain Garden 10A

Inflow Area = 0.352 ac, 7.02% Impervious, Inflow Depth = 0.56" for 2 yr event
 Inflow = 0.18 cfs @ 12.10 hrs, Volume= 0.016 af
 Outflow = 0.03 cfs @ 12.86 hrs, Volume= 0.016 af, Atten= 81%, Lag= 45.6 min
 Discarded = 0.03 cfs @ 12.86 hrs, Volume= 0.016 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 197.31' @ 12.86 hrs Surf.Area= 616 sf Storage= 168 cf

Plug-Flow detention time= 40.9 min calculated for 0.016 af (100% of inflow)
 Center-of-Mass det. time= 40.9 min (939.9 - 899.0)

Volume	Invert	Avail.Storage	Storage Description
#1	197.00'	448 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.00	460	118.0	0	0	460
197.70	840	136.0	448	448	835

Device	Routing	Invert	Outlet Devices
#1	Primary	197.50'	2.0" x 2.0" Horiz. Orifice/Grate X 36.00 C= 0.600 Limited to weir flow at low heads
#2	Discarded	197.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 12.86 hrs HW=197.31' (Free Discharge)

↑2=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=197.00' (Free Discharge)

↑1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond 14P: existing detention basin

Inflow Area = 1.441 ac, 10.65% Impervious, Inflow Depth = 0.00" for 2 yr event
 Inflow = 0.00 cfs @ 23.99 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af, Atten= 0%, Lag= 2.5 min
 Discarded = 0.00 cfs @ 24.04 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

OE-3012 Post Prelim 6.15.17

Type III 24-hr 2 yr Rainfall=3.20"

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Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.00' @ 24.04 hrs Surf.Area= 1,882 sf Storage= 0 cf

Plug-Flow detention time=2.9 min calculated for 0.000 af (100% of inflow)
 Center-of-Mass det. time=2.9 min (1,337.9 - 1,335.1)

Volume	Invert	Avail.Storage	Storage Description			
#1	208.00'	42,696 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
208.00	1,882	211.0	0	0	1,882	
209.00	7,002	471.0	4,171	4,171	15,997	
213.00	12,526	578.0	38,524	42,696	25,172	

Device	Routing	Invert	Outlet Devices
#1	Primary	208.42'	30.0" Round Culvert L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 208.42' / 207.92' S= 0.0100 '/ Cc= 0.900 n= 0.030 Corrugated metal, Flow Area= 4.91 sf
#2	Discarded	208.00'	12.060 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.53 cfs @ 24.04 hrs HW=208.00' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.53 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.00' (Free Discharge)
 ↳ **1=Culvert** (Controls 0.00 cfs)

Summary for Pond LC 4: Leaching Chamber Bed #4

Inflow Area = 1.007 ac, 47.31% Impervious, Inflow Depth = 0.36" for 2 yr event
 Inflow = 1.18 cfs @ 12.14 hrs, Volume= 0.030 af
 Outflow = 0.47 cfs @ 12.40 hrs, Volume= 0.030 af, Atten= 60%, Lag= 15.5 min
 Discarded = 0.11 cfs @ 12.08 hrs, Volume= 0.021 af
 Primary = 0.37 cfs @ 12.40 hrs, Volume= 0.009 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 201.24' @ 12.40 hrs Surf.Area= 0.013 ac Storage= 0.016 af

Plug-Flow detention time=43.5 min calculated for 0.030 af (100% of inflow)
 Center-of-Mass det. time= 43.5 min (784.0 - 740.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	199.30'	0.014 af	16.75'W x 33.00'L x 3.71'H Field A 0.047 af Overall - 0.012 af Embedded = 0.035 af x 40.0% Voids
#2A	199.80'	0.012 af	Cultec R-280HD x 12 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 3 rows
		0.026 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.30'	8.270 in/hr Exfiltration over Surface area
#2	Primary	200.90'	12.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 200.90' / 198.80' S= 0.0350'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf
#3	Primary	201.50'	4.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 201.50' / 199.80' S= 0.0340'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.11 cfs @ 12.08 hrs HW=199.34' (Free Discharge)

←1=Exfiltration (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.36 cfs @ 12.40 hrs HW=201.24' (Free Discharge)

←2=Culvert (Inlet Controls 0.36 cfs @ 1.56 fps)

←3=Culvert (Controls 0.00 cfs)

Summary for Pond LC 4B: Leaching Chamber Bed #4B

[79] Warning: Submerged Pond LC 4C Primary device # 2 OUTLET by 0.17'

Inflow Area =	1.007 ac, 47.31% Impervious, Inflow Depth = 0.68" for 2 yr event
Inflow =	1.40 cfs @ 12.10 hrs, Volume= 0.057 af
Outflow =	1.28 cfs @ 12.14 hrs, Volume= 0.057 af, Atten= 9%, Lag= 2.3 min
Discarded =	0.09 cfs @ 11.95 hrs, Volume= 0.027 af
Primary =	1.18 cfs @ 12.14 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 203.37' @ 12.14 hrs Surf.Area= 0.011 ac Storage= 0.010 af

Plug-Flow detention time= 17.3 min calculated for 0.057 af (100% of inflow)
Center-of-Mass det. time= 17.3 min (780.2 - 762.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	202.00'	0.008 af	14.50'W x 33.50'L x 2.54'H Field A 0.028 af Overall - 0.008 af Embedded = 0.021 af x 40.0% Voids
#2A	202.50'	0.008 af	Cultec R-150XLHD x 12 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.016 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	202.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	202.90'	10.0" Round Culvert X 2.00 L= 20.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 202.90' / 202.00' S= 0.0450 '/ n= 0.011 PVC, smooth interior, Flow Area= 0.55 sf Cc= 0.900

Discarded OutFlow Max=0.09 cfs @ 11.95 hrs HW=202.06' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=1.18 cfs @ 12.14 hrs HW=203.37' (Free Discharge)

↑2=Culvert (Inlet Controls 1.18 cfs @ 1.85 fps)

Summary for Pond LC 4C: Leaching Chamber Bed #4C

Inflow Area = 1.007 ac, 47.31% Impervious, Inflow Depth = 1.27" for 2 yr event
 Inflow = 1.46 cfs @ 12.10 hrs, Volume= 0.107 af
 Outflow = 1.45 cfs @ 12.10 hrs, Volume= 0.107 af, Atten= 1%, Lag= 0.5 min
 Discarded = 0.05 cfs @ 11.29 hrs, Volume= 0.049 af
 Primary = 1.40 cfs @ 12.10 hrs, Volume= 0.057 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 204.86' @ 12.10 hrs Surf.Area= 0.006 ac Storage= 0.008 af

Plug-Flow detention time=27.3 min calculated for 0.107 af (100% of inflow)
 Center-of-Mass det. time= 27.3 min (876.6 - 849.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	202.50'	0.007 af	7.92'W x 33.00'L x 3.71'H Field A 0.022 af Overall - 0.004 af Embedded = 0.018 af x 40.0% Voids
#2A	203.50'	0.004 af	Cultec R-280HD x 4 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 1 rows
		0.011 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	202.50'	8.270 in/hr Exfiltration over Surface area
#2	Primary	204.40'	8.0" Round Culvert X 3.00 L= 8.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 204.40' / 203.20' S= 0.1500 '/ n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf Cc= 0.900

Discarded OutFlow Max=0.05 cfs @ 11.29 hrs HW=202.54' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=1.40 cfs @ 12.10 hrs HW=204.86' (Free Discharge)

↑2=Culvert (Inlet Controls 1.40 cfs @ 1.82 fps)

Summary for Pond LC-1: Leaching Chamber Bed #1

Inflow Area = 0.236 ac, 66.05% Impervious, Inflow Depth = 1.76" for 2 yr event
 Inflow = 0.49 cfs @ 12.09 hrs, Volume= 0.035 af
 Outflow = 0.07 cfs @ 11.74 hrs, Volume= 0.035 af, Atten= 86%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 11.74 hrs, Volume= 0.035 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 192.86' @ 12.65 hrs Surf.Area= 0.028 ac Storage= 0.011 af

Plug-Flow detention time=51.0 min calculated for 0.035 af (100% of inflow)
 Center-of-Mass det. time= 51.0 min (877.1 - 826.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	192.00'	0.029 af	14.50'W x 84.75'L x 3.29'H Field A 0.093 af Overall - 0.020 af Embedded = 0.073 af x 40.0% Voids
#2A	192.75'	0.020 af	Cultec R-150XLHD x 32 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.049 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	192.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 11.74 hrs HW=192.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Summary for Pond LC-2A(1): Leaching Chamber Bed #2A(1)

Inflow Area = 0.413 ac, 59.48% Impervious, Inflow Depth = 1.61" for 2 yr event
 Inflow = 0.72 cfs @ 12.12 hrs, Volume= 0.055 af
 Outflow = 0.08 cfs @ 13.01 hrs, Volume= 0.039 af, Atten= 88%, Lag= 53.2 min
 Discarded = 0.02 cfs @ 10.74 hrs, Volume= 0.028 af
 Primary = 0.07 cfs @ 13.01 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 198.82' @ 13.01 hrs Surf.Area= 0.016 ac Storage= 0.028 af

Plug-Flow detention time=364.9 min calculated for 0.039 af (71% of inflow)
 Center-of-Mass det. time= 268.3 min (1,103.4 - 835.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	196.00'	0.023 af	13.17'W x 54.50'L x 4.54'H Field A 0.075 af Overall - 0.017 af Embedded = 0.058 af x 40.0% Voids
#2A	197.00'	0.017 af	Cultec R-330XLHD x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

0.040 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	196.00'	1.020 in/hr Exfiltration over Surface area
#2	Primary	198.70'	6.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 198.70' / 198.00' S= 0.0700'/' Cc= 0.900 n= 0.015 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 10.74 hrs HW=196.05' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.07 cfs @ 13.01 hrs HW=198.82' (Free Discharge)

↑2=Culvert (Inlet Controls 0.07 cfs @ 0.93 fps)

Summary for Pond LC-2B: Leaching Chamber Bed #2B

Inflow Area =	0.299 ac, 33.78% Impervious, Inflow Depth = 0.98" for 2 yr event
Inflow =	0.32 cfs @ 12.10 hrs, Volume= 0.024 af
Outflow =	0.03 cfs @ 11.84 hrs, Volume= 0.024 af, Atten= 91%, Lag= 0.0 min
Discarded =	0.03 cfs @ 11.84 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 199.87' @ 13.90 hrs Surf.Area= 0.028 ac Storage= 0.010 af

Plug-Flow detention time= 148.6 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 148.6 min (1,014.0 - 865.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	199.00'	0.038 af	15.17'W x 79.50'L x 4.29'H Field A 0.119 af Overall - 0.024 af Embedded = 0.094 af x 40.0% Voids
#2A	200.00'	0.024 af	Cultec R-330XLHD x 20 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

0.062 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.84 hrs HW=199.04' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-3: Leaching Chamber Bed #3

Inflow Area = 0.230 ac, 64.54% Impervious, Inflow Depth = 1.76" for 2 yr event
 Inflow = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af
 Outflow = 0.15 cfs @ 11.91 hrs, Volume= 0.034 af, Atten= 68%, Lag= 0.0 min
 Discarded = 0.15 cfs @ 11.91 hrs, Volume= 0.034 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 198.48' @ 12.42 hrs Surf.Area= 0.018 ac Storage= 0.005 af

Plug-Flow detention time=7.7 min calculated for 0.034 af (100% of inflow)
 Center-of-Mass det. time=7.7 min (833.8 - 826.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	197.85'	0.014 af	12.25'W x 65.25'L x 2.54'H Field A 0.047 af Overall - 0.011 af Embedded = 0.035 af x 40.0% Voids
#2A	198.35'	0.011 af	Cultec R-150XLHD x 18 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 3 rows
		0.025 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.85'	8.270 in/hr Exfiltration over Surface area
#2	Primary	199.00'	4.0" Round Culvert L= 34.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 199.00' / 198.40' S= 0.0176 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.15 cfs @ 11.91 hrs HW=197.88' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=197.85' (Free Discharge)

↑**2=Culvert** (Controls 0.00 cfs)

Summary for Pond LC-5: Leaching Chamber Bed #5

Inflow Area = 0.287 ac, 28.02% Impervious, Inflow Depth = 0.88" for 2 yr event
 Inflow = 0.27 cfs @ 12.10 hrs, Volume= 0.021 af
 Outflow = 0.03 cfs @ 11.90 hrs, Volume= 0.021 af, Atten= 89%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.90 hrs, Volume= 0.021 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.07' @ 13.42 hrs Surf.Area= 0.029 ac Storage= 0.007 af

Plug-Flow detention time= 101.3 min calculated for 0.021 af (100% of inflow)
 Center-of-Mass det. time= 101.3 min (973.5 - 872.2)

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Volume	Invert	Avail.Storage	Storage Description
#1A	213.50'	0.029 af	29.67'W x 42.50'L x 3.54'H Field A 0.103 af Overall - 0.031 af Embedded = 0.071 af x 40.0% Voids
#2A	214.00'	0.031 af	Cultec R-330XLHD x 25 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 5 rows
		0.060 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	213.50'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.90 hrs HW=213.54' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-5A: Leaching Chamber Bed #5A

Inflow Area = 0.411 ac, 44.91% Impervious, Inflow Depth = 1.21" for 2 yr event
 Inflow = 0.57 cfs @ 12.09 hrs, Volume= 0.041 af
 Outflow = 0.03 cfs @ 11.72 hrs, Volume= 0.041 af, Atten= 94%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.72 hrs, Volume= 0.041 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 209.16' @ 15.02 hrs Surf.Area= 0.033 ac Storage= 0.020 af

Plug-Flow detention time=275.9 min calculated for 0.041 af (100% of inflow)
 Center-of-Mass det. time= 275.9 min (1,128.2 - 852.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	208.00'	0.051 af	33.25'W x 42.70'L x 5.75'H Field A 0.187 af Overall - 0.060 af Embedded = 0.127 af x 40.0% Voids
#2A	208.75'	0.060 af	Cultec R-902HD x 40 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 4 Rows of 10 Chambers Cap Storage= +2.8 cf x 2 x 4 rows = 22.1 cf
		0.111 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.72 hrs HW=208.06' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-6: Leaching Chamber Bed #6

Inflow Area = 0.391 ac, 56.26% Impervious, Inflow Depth = 1.21" for 2 yr event
 Inflow = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af
 Outflow = 0.21 cfs @ 11.98 hrs, Volume= 0.039 af, Atten= 62%, Lag= 0.0 min
 Discarded = 0.21 cfs @ 11.98 hrs, Volume= 0.039 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 210.51' @ 12.39 hrs Surf.Area= 0.025 ac Storage= 0.005 af

Plug-Flow detention time=5.7 min calculated for 0.039 af (100% of inflow)
 Center-of-Mass det. time=5.7 min (858.0 - 852.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	210.00'	0.021 af	16.08'W x 67.33'L x 3.21'H Field A 0.080 af Overall - 0.027 af Embedded = 0.053 af x 40.0% Voids
#2A	210.50'	0.027 af	Cultec R-280HD x 27 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 3 rows
		0.048 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	210.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	212.00'	8.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 212.00' / 210.00' S= 0.0667'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.21 cfs @ 11.98 hrs HW=210.03' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=210.00' (Free Discharge)

↑**2=Culvert** (Controls 0.00 cfs)

Summary for Pond LC-6(2): Leaching Chamber Bed #6(2)

Inflow Area = 0.391 ac, 56.26% Impervious, Inflow Depth = 0.00" for 2 yr event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.50' @ 0.00 hrs Surf.Area= 0.010 ac Storage= 0.000 af

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

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Volume	Invert	Avail.Storage	Storage Description
#1A	208.50'	0.008 af	16.50'W x 25.25'L x 2.54'H Field A 0.024 af Overall - 0.005 af Embedded = 0.019 af x 40.0% Voids
#2A	209.00'	0.005 af	Cultec R-150XLHD x 8 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.013 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.50'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.50' (Free Discharge)

↑**1=Exfiltration** (Passes 0.00 cfs of 0.08 cfs potential flow)

Summary for Pond LC-6A: Leaching Chamber Bed #6A

Inflow Area = 0.243 ac, 66.13% Impervious, Inflow Depth = 1.34" for 2 yr event
 Inflow = 0.38 cfs @ 12.09 hrs, Volume= 0.027 af
 Outflow = 0.17 cfs @ 12.00 hrs, Volume= 0.027 af, Atten= 55%, Lag= 0.0 min
 Discarded = 0.17 cfs @ 12.00 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.35' @ 12.32 hrs Surf.Area= 0.020 ac Storage= 0.003 af

Plug-Flow detention time=3.9 min calculated for 0.027 af (100% of inflow)
 Center-of-Mass det. time= 3.9 min (849.9 - 846.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	214.00'	0.021 af	14.17'W x 62.50'L x 3.54'H Field A 0.072 af Overall - 0.020 af Embedded = 0.052 af x 40.0% Voids
#2A	214.50'	0.020 af	Cultec R-330XLHD x 16 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		0.041 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	214.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.17 cfs @ 12.00 hrs HW=214.04' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Summary for Pond LC-7: Leaching Chamber Bed #7

Inflow Area = 0.822 ac, 41.73% Impervious, Inflow Depth = 0.69" for 2 yr event
 Inflow = 0.55 cfs @ 12.10 hrs, Volume= 0.047 af
 Outflow = 0.42 cfs @ 12.07 hrs, Volume= 0.047 af, Atten= 24%, Lag= 0.0 min
 Discarded = 0.42 cfs @ 12.07 hrs, Volume= 0.047 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.07' @ 12.18 hrs Surf.Area= 0.050 ac Storage= 0.001 af

Plug-Flow detention time= 1.1 min calculated for 0.047 af (100% of inflow)
 Center-of-Mass det. time= 1.1 min (888.1 - 887.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	214.00'	0.037 af	39.25'W x 56.00'L x 2.54'H Field A 0.128 af Overall - 0.035 af Embedded = 0.093 af x 40.0% Voids
#2A	214.50'	0.035 af	Cultec R-150XLHD x 55 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 11 rows
		0.072 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	214.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.42 cfs @ 12.07 hrs HW=214.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.42 cfs)

Summary for Pond LC2A(2): Leaching Chamber Bed #2A(2)

Inflow Area = 0.413 ac, 59.48% Impervious, Inflow Depth = 0.32" for 2 yr event
 Inflow = 0.07 cfs @ 13.01 hrs, Volume= 0.011 af
 Outflow = 0.04 cfs @ 12.98 hrs, Volume= 0.011 af, Atten= 42%, Lag= 0.0 min
 Discarded = 0.04 cfs @ 12.98 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 194.62' @ 14.06 hrs Surf.Area= 0.037 ac Storage= 0.002 af

Plug-Flow detention time= 22.8 min calculated for 0.011 af (100% of inflow)
 Center-of-Mass det. time= 22.8 min (886.1 - 863.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	194.50'	0.046 af	18.00'W x 89.50'L x 4.29'H Field A 0.159 af Overall - 0.044 af Embedded = 0.115 af x 40.0% Voids
#2A	195.25'	0.044 af	Cultec R-330XLHD x 36 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 3 rows
		0.090 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	194.50'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.98 hrs HW=194.54' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.04 cfs)

Summary for Pond LC4A: Leaching Chamber Bed #4A

Inflow Area = 0.308 ac, 62.97% Impervious, Inflow Depth = 1.61" for 2 yr event
 Inflow = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af
 Outflow = 0.16 cfs @ 11.88 hrs, Volume= 0.041 af, Atten= 72%, Lag= 0.0 min
 Discarded = 0.16 cfs @ 11.88 hrs, Volume= 0.041 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 198.50' @ 12.46 hrs Surf.Area= 0.020 ac Storage= 0.008 af

Plug-Flow detention time= 10.8 min calculated for 0.041 af (100% of inflow)
 Center-of-Mass det. time= 10.8 min (843.7 - 832.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	197.70'	0.016 af	15.25'W x 56.00'L x 2.54'H Field A 0.050 af Overall - 0.009 af Embedded = 0.040 af x 40.0% Voids
#2A	198.20'	0.009 af	Cultec R-150XLHD x 15 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 3 rows
		0.026 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.70'	8.270 in/hr Exfiltration over Surface area
#2	Primary	199.00'	6.0" Round Culvert X 2.00 L= 23.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 199.00' / 198.00' S= 0.0435'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.16 cfs @ 11.88 hrs HW=197.73' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=197.70' (Free Discharge)
 ↑2=Culvert (Controls 0.00 cfs)

Summary for Pond RG10: Rain Garden 10

Inflow Area = 0.193 ac, 27.46% Impervious, Inflow Depth = 0.88" for 2 yr event
 Inflow = 0.19 cfs @ 12.09 hrs, Volume= 0.014 af
 Outflow = 0.18 cfs @ 12.10 hrs, Volume= 0.014 af, Atten= 2%, Lag= 0.8 min
 Discarded = 0.02 cfs @ 12.10 hrs, Volume= 0.010 af
 Primary = 0.17 cfs @ 12.10 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.82' @ 12.10 hrs Surf.Area= 283 sf Storage= 75 cf

Plug-Flow detention time=33.6 min calculated for 0.014 af (100% of inflow)
 Center-of-Mass det. time= 33.6 min (905.0 - 871.4)

Volume	Invert	Avail.Storage	Storage Description			
#1	199.50'	168 cf	Custom Stage Data (Irregular) listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
199.50	193	53.0	0	0	193	
200.10	379	72.0	168	168	386	

Device	Routing	Invert	Outlet Devices	
#1	Primary	199.80'	2.0" x 2.0" Horiz. Orifice/Grate X 36.00 C= 0.600 Limited to weir flow at low heads	
#2	Discarded	199.50'	2.410 in/hr Exfiltration over Surface area	

Discarded OutFlow Max=0.02 cfs @ 12.10 hrs HW=199.82' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.17 cfs @ 12.10 hrs HW=199.82' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.17 cfs @ 0.42 fps)

Summary for Subcatchment 1A: PDA-1A

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.037 af, Depth= 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
* 3,648	98	Pavement/sidewalks, HSG A
2,000	98	Roofs, HSG A
5,579	39	>75% Grass cover, Good, HSG A
11,227	69	Weighted Average
5,579		49.69% Pervious Area
5,648		50.31% Impervious Area

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

Summary for Subcatchment 1S: PDA-1

Runoff = 0.84 cfs @ 12.09 hrs, Volume= 0.060 af, Depth= 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
* 5,800	98	Pavement/sidewalks, HSG A
1,000	98	Roofs, HSG A
3,496	61	>75% Grass cover, Good, HSG B
10,296	85	Weighted Average
3,496		33.95% Pervious Area
6,800		66.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, ab Grass: Short n= 0.150 P2= 3.20"
1.2	200	0.0200	2.87		Shallow Concentrated Flow, bc Paved Kv= 20.3 fps
6.0	250	Total			

Summary for Subcatchment 2A: PDA-2A

Runoff = 1.27 cfs @ 12.12 hrs, Volume= 0.098 af, Depth= 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

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Type III 24-hr 10 yr Rainfall=4.65"

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Area (sf)	CN	Description
* 6,300	98	Roads/swalks, HSG B
7,290	61	>75% Grass cover, Good, HSG B
4,400	98	Roofs, HSG B
17,990	83	Weighted Average
7,290		40.52% Pervious Area
10,700		59.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
1.3	305	0.0400	4.06		Shallow Concentrated Flow, bc Paved Kv= 20.3 fps
8.4	355	Total			

Summary for Subcatchment 2B: PDA-2B

Runoff = 0.70 cfs @ 12.09 hrs, Volume= 0.050 af, Depth= 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
* 4,399	98	Roads/swalks, roofs, HSG B
4,573	61	>75% Grass cover, Good, HSG B
4,049	58	Woods/grass comb., Good, HSG B
13,021	73	Weighted Average
8,622		66.22% Pervious Area
4,399		33.78% Impervious Area

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

Summary for Subcatchment 3S: PDA-3

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.058 af, Depth= 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
* 4,430	98	Pavement, HSG B
3,551	61	>75% Grass cover, Good, HSG B
* 2,032	98	Roofs, HSG B
10,013	85	Weighted Average
3,551		35.46% Pervious Area
6,462		64.54% Impervious Area

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

Summary for Subcatchment 4A: PDA-4A

Runoff = 1.03 cfs @ 12.09 hrs, Volume= 0.073 af, Depth= 2.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
1,591	61	>75% Grass cover, Good, HSG B
* 6,155	98	Unconnected pavement, HSG B (sidewalks,road,deck,patio)
942	39	>75% Grass cover, Good, HSG A
2,440	61	>75% Grass cover, Good, HSG B
2,300	98	Unconnected roofs, HSG A
13,428	83	Weighted Average
4,973		37.03% Pervious Area
8,455		62.97% Impervious Area
8,455		100.00% Unconnected

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

Summary for Subcatchment 4S: PDA-4

Runoff = 2.83 cfs @ 12.09 hrs, Volume= 0.203 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
22,163	61	>75% Grass cover, Good, HSG B
5,355	98	Roofs, HSG B
* 15,394	98	Unconnected pavement, HSG B (sidewalks,road,deck,patio)
942	39	>75% Grass cover, Good, HSG A
43,854	78	Weighted Average
23,105		52.69% Pervious Area
20,749		47.31% Impervious Area
15,394		74.19% Unconnected

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Type III 24-hr 10 yr Rainfall=4.65"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	26	0.0580	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
0.1	5	0.0500	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.20"
1.8	19	0.0500	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
0.0	10	0.0440	3.38		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.1	11	0.0270	3.34		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	110	0.0310	2.83		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.0	7	0.0290	3.46		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.7	104	0.0250	2.55		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	59	0.0310	3.57		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	17	0.0350	3.01		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	87	0.0450	4.31		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.2	455	Total			

Summary for Subcatchment 5A: PDA-5A

Runoff = 1.12 cfs @ 12.09 hrs, Volume= 0.080 af, Depth= 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
6,896	61	>75% Grass cover, Good, HSG B
* 1,621	98	ex Roofs, HSG B
* 5,815	98	HSG B (sidewalks,road,deck,patio)
2,961	58	Woods/grass comb., Good, HSG B
* 600	98	gazebo roof
17,893	77	Weighted Average
9,857		55.09% Pervious Area
8,036		44.91% Impervious Area

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

Summary for Subcatchment 5R: front roof of unit 26

Runoff = 0.04 cfs @ 12.08 hrs, Volume= 0.003 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
* 400	98	Roofs
400		100.00% Impervious Area

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

Summary for Subcatchment 5S: PDA-5

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.044 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
6,991	61	>75% Grass cover, Good, HSG B
* 840	98	ex Roofs, HSG B
* 2,660	98	HSG B (sidewalks,road,deck,patio,roofs)
2,000	58	Woods/grass comb., Good, HSG B
12,491	71	Weighted Average
8,991		71.98% Pervious Area
3,500		28.02% Impervious Area

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

Summary for Subcatchment 6A: PDA-6A

Runoff = 0.71 cfs @ 12.09 hrs, Volume= 0.051 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

	Area (sf)	CN	Description
*	3,885	98	roads/swalks
	3,115	98	Unconnected roofs, HSG B
	3,204	39	>75% Grass cover, Good, HSG A
	382	61	>75% Grass cover, Good, HSG B
	10,586	79	Weighted Average
	3,586		33.87% Pervious Area
	7,000		66.13% Impervious Area
	3,115		44.50% Unconnected

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

Summary for Subcatchment 6S: PDA-6

Runoff = 1.07 cfs @ 12.09 hrs, Volume= 0.076 af, Depth= 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 yr Rainfall=4.65"

	Area (sf)	CN	Description
*	5,500	98	Roads HSG B
	887	98	Unconnected roofs, HSG B
*	2,400	98	Patios
	3,716	61	>75% Grass cover, Good, HSG B
	3,730	39	>75% Grass cover, Good, HSG A
*	790	98	gar roofs
	17,023	77	Weighted Average
	7,446		43.74% Pervious Area
	9,577		56.26% Impervious Area
	887		9.26% Unconnected

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

Summary for Subcatchment 7A: Units 27,28 and back of 24-26 roof area

Runoff = 0.30 cfs @ 12.08 hrs, Volume= 0.024 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10 yr Rainfall=4.65"

	Area (sf)	CN	Description
*	2,900	98	Roofs
	2,900		100.00% Impervious Area

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

Summary for Subcatchment 7S: PDA-7

Runoff = 1.44 cfs @ 12.10 hrs, Volume= 0.107 af, Depth= 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
14,248	39	>75% Grass cover, Good, HSG A
* 14,932	98	HSG A (sidewalks,road,deck,patio)
5,106	61	>75% Grass cover, Good, HSG B
1,500	55	Woods, Good, HSG B
35,786	67	Weighted Average
20,854		58.27% Pervious Area
14,932		41.73% Impervious Area

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

Summary for Subcatchment 10A: PDA-10A

Runoff = 0.54 cfs @ 12.08 hrs, Volume= 0.040 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
14,275	61	>75% Grass cover, Good, HSG B
1,078	98	Roofs, HSG B
15,353	64	Weighted Average
14,275		92.98% Pervious Area
1,078		7.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0600	0.23		Sheet Flow, ab
					Grass: Short n= 0.150 P2= 3.20"
1.5	277	0.0380	3.14		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
5.1	327	Total			

Summary for Subcatchment 10S: FLOW to rain garden (PDA-10)

Runoff = 0.43 cfs @ 12.08 hrs, Volume= 0.030 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
6,108	61	>75% Grass cover, Good, HSG B
2,312	98	Roofs, HSG B
8,420	71	Weighted Average
6,108		72.54% Pervious Area
2,312		27.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0600	0.23		Sheet Flow, ab Grass: Short n= 0.150 P2= 3.20"
1.5	277	0.0380	3.14		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
5.1	327	Total			

Summary for Subcatchment 11S: PDA-11

Runoff = 0.48 cfs @ 12.18 hrs, Volume= 0.058 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
9,901	39	>75% Grass cover, Good, HSG A
14,000	61	>75% Grass cover, Good, HSG B
5,000	30	Woods, Good, HSG A
12,000	55	Woods, Good, HSG B
* 2,400	98	Roofs/drives, HSG B
43,301	53	Weighted Average
40,901		94.46% Pervious Area
2,400		5.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0870	0.12		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
3.0	530	0.0330	2.92		Shallow Concentrated Flow, bc Unpaved Kv= 16.1 fps
9.9	580	Total			

Summary for Subcatchment 13S: PDA-12

Runoff = 0.03 cfs @ 13.85 hrs, Volume= 0.020 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Adj	Description
31,415	39		>75% Grass cover, Good, HSG A
2,676	98		Roofs, HSG A
10,740	30		Woods, Good, HSG A
* 4,009	98		Unconnected roofs, HSG A (deck,patio)
13,912	32		Woods/grass comb., Good, HSG A
62,752	42	40	Weighted Average, UI Adjusted
56,067			89.35% Pervious Area
6,685			10.65% Impervious Area
4,009			59.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0156	0.06		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
6.6	320	0.0025	0.81		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
20.2	370	Total			

Summary for Reach 3R: Existing. Rect. Concrete Channel

Inflow Area = 2.539 ac, 34.42% Impervious, Inflow Depth = 0.60" for 10 yr event
 Inflow = 2.78 cfs @ 12.16 hrs, Volume= 0.127 af
 Outflow = 2.77 cfs @ 12.18 hrs, Volume= 0.127 af, Atten= 0%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Max. Velocity= 4.92 fps, Min. Travel Time= 0.5 min
 Avg. Velocity = 1.14 fps, Avg. Travel Time= 2.1 min

Peak Storage= 82 cf @ 12.17 hrs
 Average Depth at Peak Storage= 0.28'
 Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 17.02 cfs

2.00' x 1.00' deep channel, n= 0.011 Concrete pipe, straight & clean
 Length= 145.0' Slope= 0.0100 '/'
 Inlet Invert= 193.98', Outlet Invert= 192.53'



Summary for Pond 2P: Leaching Chamber Bed #10A

Inflow Area = 0.352 ac, 7.02% Impervious, Inflow Depth = 0.34" for 10 yr event
 Inflow = 0.35 cfs @ 12.16 hrs, Volume= 0.010 af
 Outflow = 0.04 cfs @ 12.15 hrs, Volume= 0.010 af, Atten= 89%, Lag= 0.0 min
 Discarded = 0.04 cfs @ 12.15 hrs, Volume= 0.010 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 191.86' @ 12.82 hrs Surf.Area= 0.016 ac Storage= 0.006 af

Plug-Flow detention time=70.7 min calculated for 0.010 af (100% of inflow)
 Center-of-Mass det. time= 70.7 min (821.9 - 751.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	191.00'	0.021 af	14.33'W x 49.00'L x 3.96'H Field A 0.064 af Overall - 0.012 af Embedded = 0.052 af x 40.0% Voids
#2A	191.75'	0.012 af	Cultec R-280HD x 12 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 2 rows
		0.033 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	191.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.15 hrs HW=191.06' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Summary for Pond 10P: Leaching Chamber Bed #1A

Inflow Area = 0.451 ac, 40.52% Impervious, Inflow Depth = 1.39" for 10 yr event
 Inflow = 0.91 cfs @ 12.09 hrs, Volume= 0.052 af
 Outflow = 0.05 cfs @ 11.78 hrs, Volume= 0.052 af, Atten= 94%, Lag= 0.0 min
 Discarded = 0.05 cfs @ 11.78 hrs, Volume= 0.052 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 193.77' @ 14.08 hrs Surf.Area= 0.021 ac Storage= 0.027 af

Plug-Flow detention time=230.7 min calculated for 0.052 af (100% of inflow)
 Center-of-Mass det. time= 230.6 min (1,055.7 - 825.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	191.50'	0.038 af	19.50'W x 47.37'L x 6.00'H Field A 0.127 af Overall - 0.033 af Embedded = 0.094 af x 40.0% Voids
#2A	192.50'	0.033 af	Cultec R-902HD x 22 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 2 Rows of 11 Chambers Cap Storage= +2.8 cf x 2 x 2 rows = 11.0 cf

0.071 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	191.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 11.78 hrs HW=191.56' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.05 cfs)

Summary for Pond 13P: Rain Garden 10A

Inflow Area = 0.352 ac, 7.02% Impervious, Inflow Depth = 1.36" for 10 yr event
 Inflow = 0.54 cfs @ 12.08 hrs, Volume= 0.040 af
 Outflow = 0.39 cfs @ 12.16 hrs, Volume= 0.040 af, Atten= 27%, Lag= 4.6 min
 Discarded = 0.04 cfs @ 12.16 hrs, Volume= 0.030 af
 Primary = 0.35 cfs @ 12.16 hrs, Volume= 0.010 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 197.53' @ 12.16 hrs Surf.Area= 736 sf Storage= 312 cf

Plug-Flow detention time=60.6 min calculated for 0.040 af (100% of inflow)
 Center-of-Mass det. time= 60.6 min (928.2 - 867.6)

Volume	Invert	Avail.Storage	Storage Description
#1	197.00'	448 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.00	460	118.0	0	0	460
197.70	840	136.0	448	448	835

Device	Routing	Invert	Outlet Devices
#1	Primary	197.50'	2.0" x 2.0" Horiz. Orifice/Grate X 36.00 C= 0.600 Limited to weir flow at low heads
#2	Discarded	197.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.16 hrs HW=197.53' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.35 cfs @ 12.16 hrs HW=197.53' (Free Discharge)
 ↑1=Orifice/Grate (Weir Controls 0.35 cfs @ 0.54 fps)

Summary for Pond 14P: existing detention basin

Inflow Area = 1.441 ac, 10.65% Impervious, Inflow Depth = 0.16" for 10 yr event
 Inflow = 0.03 cfs @ 13.85 hrs, Volume= 0.020 af
 Outflow = 0.03 cfs @ 13.90 hrs, Volume= 0.020 af, Atten= 0%, Lag= 3.1 min
 Discarded = 0.03 cfs @ 13.90 hrs, Volume= 0.020 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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Type III 24-hr 10 yr Rainfall=4.65"

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Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.00' @ 13.90 hrs Surf.Area= 1,892 sf Storage= 5 cf

Plug-Flow detention time=2.9 min calculated for 0.020 af (100% of inflow)
 Center-of-Mass det. time=2.9 min (1,037.7 - 1,034.8)

Volume	Invert	Avail.Storage	Storage Description			
#1	208.00'	42,696 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
208.00	1,882	211.0	0	0	1,882	
209.00	7,002	471.0	4,171	4,171	15,997	
213.00	12,526	578.0	38,524	42,696	25,172	

Device	Routing	Invert	Outlet Devices
#1	Primary	208.42'	30.0" Round Culvert L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 208.42' / 207.92' S= 0.0100 '/ Cc= 0.900 n= 0.030 Corrugated metal, Flow Area= 4.91 sf
#2	Discarded	208.00'	12.060 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.53 cfs @ 13.90 hrs HW=208.00' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.53 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.00' (Free Discharge)
 ↑**1=Culvert** (Controls 0.00 cfs)

Summary for Pond LC 4: Leaching Chamber Bed #4

Inflow Area = 1.007 ac, 47.31% Impervious, Inflow Depth = 1.12" for 10 yr event
 Inflow = 2.58 cfs @ 12.13 hrs, Volume= 0.094 af
 Outflow = 2.41 cfs @ 12.16 hrs, Volume= 0.094 af, Atten= 6%, Lag= 2.0 min
 Discarded = 0.11 cfs @ 11.87 hrs, Volume= 0.033 af
 Primary = 2.31 cfs @ 12.16 hrs, Volume= 0.061 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 201.91' @ 12.16 hrs Surf.Area= 0.013 ac Storage= 0.021 af

Plug-Flow detention time=25.8 min calculated for 0.094 af (100% of inflow)
 Center-of-Mass det. time=25.8 min (770.4 - 744.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	199.30'	0.014 af	16.75'W x 33.00'L x 3.71'H Field A 0.047 af Overall - 0.012 af Embedded = 0.035 af x 40.0% Voids
#2A	199.80'	0.012 af	Cultec R-280HD x 12 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 3 rows
		0.026 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.30'	8.270 in/hr Exfiltration over Surface area
#2	Primary	200.90'	12.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 200.90' / 198.80' S= 0.0350'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf
#3	Primary	201.50'	4.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 201.50' / 199.80' S= 0.0340'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.11 cfs @ 11.87 hrs HW=199.35' (Free Discharge)

←1=Exfiltration (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=2.30 cfs @ 12.16 hrs HW=201.91' (Free Discharge)

←2=Culvert (Inlet Controls 2.14 cfs @ 2.72 fps)

←3=Culvert (Inlet Controls 0.16 cfs @ 1.89 fps)

Summary for Pond LC 4B: Leaching Chamber Bed #4B

[79] Warning: Submerged Pond LC 4C Primary device # 2 OUTLET by 0.50'

Inflow Area =	1.007 ac, 47.31% Impervious, Inflow Depth = 1.66" for 10 yr event
Inflow =	2.75 cfs @ 12.11 hrs, Volume= 0.139 af
Outflow =	2.67 cfs @ 12.13 hrs, Volume= 0.139 af, Atten= 3%, Lag= 1.2 min
Discarded =	0.09 cfs @ 11.58 hrs, Volume= 0.045 af
Primary =	2.58 cfs @ 12.13 hrs, Volume= 0.094 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 203.70' @ 12.13 hrs Surf.Area= 0.011 ac Storage= 0.012 af

Plug-Flow detention time= 13.5 min calculated for 0.139 af (100% of inflow)
Center-of-Mass det. time= 13.5 min (786.3 - 772.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	202.00'	0.008 af	14.50'W x 33.50'L x 2.54'H Field A 0.028 af Overall - 0.008 af Embedded = 0.021 af x 40.0% Voids
#2A	202.50'	0.008 af	Cultec R-150XLHD x 12 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.016 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	202.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	202.90'	10.0" Round Culvert X 2.00 L= 20.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 202.90' / 202.00' S= 0.0450 '/ Cc= 0.900
 n= 0.011 PVC, smooth interior, Flow Area= 0.55 sf

Discarded OutFlow Max=0.09 cfs @ 11.58 hrs HW=202.03' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=2.57 cfs @ 12.13 hrs HW=203.70' (Free Discharge)

↑2=Culvert (Inlet Controls 2.57 cfs @ 2.40 fps)

Summary for Pond LC 4C: Leaching Chamber Bed #4C

Inflow Area = 1.007 ac, 47.31% Impervious, Inflow Depth = 2.42" for 10 yr event
 Inflow = 2.83 cfs @ 12.09 hrs, Volume= 0.203 af
 Outflow = 2.80 cfs @ 12.11 hrs, Volume= 0.203 af, Atten= 1%, Lag= 0.8 min
 Discarded = 0.05 cfs @ 10.24 hrs, Volume= 0.064 af
 Primary = 2.75 cfs @ 12.11 hrs, Volume= 0.139 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 205.21' @ 12.11 hrs Surf.Area= 0.006 ac Storage= 0.009 af

Plug-Flow detention time=22.9 min calculated for 0.203 af (100% of inflow)
 Center-of-Mass det. time= 22.9 min (853.5 - 830.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	202.50'	0.007 af	7.92'W x 33.00'L x 3.71'H Field A 0.022 af Overall - 0.004 af Embedded = 0.018 af x 40.0% Voids
#2A	203.50'	0.004 af	Cultec R-280HD x 4 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 1 rows
		0.011 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	202.50'	8.270 in/hr Exfiltration over Surface area
#2	Primary	204.40'	8.0" Round Culvert X 3.00 L= 8.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 204.40' / 203.20' S= 0.1500 '/ Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.05 cfs @ 10.24 hrs HW=202.54' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=2.74 cfs @ 12.11 hrs HW=205.21' (Free Discharge)

↑2=Culvert (Inlet Controls 2.74 cfs @ 2.62 fps)

Summary for Pond LC-1: Leaching Chamber Bed #1

Inflow Area = 0.236 ac, 66.05% Impervious, Inflow Depth = 3.05" for 10 yr event
 Inflow = 0.84 cfs @ 12.09 hrs, Volume= 0.060 af
 Outflow = 0.07 cfs @ 11.53 hrs, Volume= 0.060 af, Atten= 92%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 11.53 hrs, Volume= 0.060 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 193.46' @ 13.18 hrs Surf.Area= 0.028 ac Storage= 0.024 af

Plug-Flow detention time= 128.7 min calculated for 0.060 af (100% of inflow)
 Center-of-Mass det. time= 128.7 min (939.1 - 810.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	192.00'	0.029 af	14.50'W x 84.75'L x 3.29'H Field A 0.093 af Overall - 0.020 af Embedded = 0.073 af x 40.0% Voids
#2A	192.75'	0.020 af	Cultec R-150XLHD x 32 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.049 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	192.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 11.53 hrs HW=192.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Summary for Pond LC-2A(1): Leaching Chamber Bed #2A(1)

Inflow Area = 0.413 ac, 59.48% Impervious, Inflow Depth = 2.86" for 10 yr event
 Inflow = 1.27 cfs @ 12.12 hrs, Volume= 0.098 af
 Outflow = 0.81 cfs @ 12.24 hrs, Volume= 0.080 af, Atten= 36%, Lag= 7.4 min
 Discarded = 0.02 cfs @ 9.42 hrs, Volume= 0.030 af
 Primary = 0.79 cfs @ 12.24 hrs, Volume= 0.050 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.23' @ 12.24 hrs Surf.Area= 0.016 ac Storage= 0.031 af

Plug-Flow detention time= 201.0 min calculated for 0.080 af (82% of inflow)
 Center-of-Mass det. time= 128.0 min (946.6 - 818.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	196.00'	0.023 af	13.17'W x 54.50'L x 4.54'H Field A 0.075 af Overall - 0.017 af Embedded = 0.058 af x 40.0% Voids
#2A	197.00'	0.017 af	Cultec R-330XLHD x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

0.040 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	196.00'	1.020 in/hr Exfiltration over Surface area
#2	Primary	198.70'	6.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 198.70' / 198.00' S= 0.0700'/' Cc= 0.900 n= 0.015 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 9.42 hrs HW=196.05' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.79 cfs @ 12.24 hrs HW=199.23' (Free Discharge)
 ↑2=Culvert (Inlet Controls 0.79 cfs @ 2.02 fps)

Summary for Pond LC-2B: Leaching Chamber Bed #2B

Inflow Area = 0.299 ac, 33.78% Impervious, Inflow Depth = 2.01" for 10 yr event
 Inflow = 0.70 cfs @ 12.09 hrs, Volume= 0.050 af
 Outflow = 0.03 cfs @ 11.47 hrs, Volume= 0.045 af, Atten= 96%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.47 hrs, Volume= 0.045 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 200.90' @ 15.92 hrs Surf.Area= 0.028 ac Storage= 0.028 af

Plug-Flow detention time= 429.5 min calculated for 0.045 af (90% of inflow)
 Center-of-Mass det. time= 381.2 min (1,224.9 - 843.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	199.00'	0.038 af	15.17'W x 79.50'L x 4.29'H Field A 0.119 af Overall - 0.024 af Embedded = 0.094 af x 40.0% Voids
#2A	200.00'	0.024 af	Cultec R-330XLHD x 20 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		0.062 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.47 hrs HW=199.04' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-3: Leaching Chamber Bed #3

Inflow Area = 0.230 ac, 64.54% Impervious, Inflow Depth = 3.05" for 10 yr event
 Inflow = 0.82 cfs @ 12.09 hrs, Volume= 0.058 af
 Outflow = 0.21 cfs @ 12.47 hrs, Volume= 0.058 af, Atten= 74%, Lag= 23.0 min
 Discarded = 0.15 cfs @ 11.73 hrs, Volume= 0.057 af
 Primary = 0.05 cfs @ 12.47 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.18' @ 12.47 hrs Surf.Area= 0.018 ac Storage= 0.015 af

Plug-Flow detention time=22.5 min calculated for 0.058 af (100% of inflow)
 Center-of-Mass det. time= 22.5 min (832.9 - 810.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	197.85'	0.014 af	12.25'W x 65.25'L x 2.54'H Field A 0.047 af Overall - 0.011 af Embedded = 0.035 af x 40.0% Voids
#2A	198.35'	0.011 af	Cultec R-150XLHD x 18 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 3 rows
		0.025 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.85'	8.270 in/hr Exfiltration over Surface area
#2	Primary	199.00'	4.0" Round Culvert L= 34.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 199.00' / 198.40' S= 0.0176 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.15 cfs @ 11.73 hrs HW=197.88' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=0.05 cfs @ 12.47 hrs HW=199.18' (Free Discharge)

↑**2=Culvert** (Inlet Controls 0.05 cfs @ 1.14 fps)

Summary for Pond LC-5: Leaching Chamber Bed #5

Inflow Area = 0.287 ac, 28.02% Impervious, Inflow Depth = 1.86" for 10 yr event
 Inflow = 0.61 cfs @ 12.09 hrs, Volume= 0.044 af
 Outflow = 0.03 cfs @ 11.61 hrs, Volume= 0.044 af, Atten= 95%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.61 hrs, Volume= 0.044 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.81' @ 15.56 hrs Surf.Area= 0.029 ac Storage= 0.023 af

Plug-Flow detention time= 356.0 min calculated for 0.044 af (100% of inflow)
 Center-of-Mass det. time= 356.0 min (1,205.0 - 849.0)

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Type III 24-hr 10 yr Rainfall=4.65"

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Volume	Invert	Avail.Storage	Storage Description
#1A	213.50'	0.029 af	29.67'W x 42.50'L x 3.54'H Field A 0.103 af Overall - 0.031 af Embedded = 0.071 af x 40.0% Voids
#2A	214.00'	0.031 af	Cultec R-330XLHD x 25 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 5 rows
		0.060 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	213.50'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.61 hrs HW=213.54' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-5A: Leaching Chamber Bed #5A

Inflow Area = 0.411 ac, 44.91% Impervious, Inflow Depth = 2.33" for 10 yr event
 Inflow = 1.12 cfs @ 12.09 hrs, Volume= 0.080 af
 Outflow = 0.03 cfs @ 11.10 hrs, Volume= 0.055 af, Atten= 97%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.10 hrs, Volume= 0.055 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 210.38' @ 16.91 hrs Surf.Area= 0.033 ac Storage= 0.049 af

Plug-Flow detention time=473.9 min calculated for 0.055 af (69% of inflow)
 Center-of-Mass det. time= 374.0 min (1,207.1 - 833.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	208.00'	0.051 af	33.25'W x 42.70'L x 5.75'H Field A 0.187 af Overall - 0.060 af Embedded = 0.127 af x 40.0% Voids
#2A	208.75'	0.060 af	Cultec R-902HD x 40 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 4 Rows of 10 Chambers Cap Storage= +2.8 cf x 2 x 4 rows = 22.1 cf
		0.111 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.10 hrs HW=208.06' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-6: Leaching Chamber Bed #6

Inflow Area = 0.391 ac, 56.26% Impervious, Inflow Depth = 2.33" for 10 yr event
 Inflow = 1.07 cfs @ 12.09 hrs, Volume= 0.076 af
 Outflow = 0.21 cfs @ 11.78 hrs, Volume= 0.076 af, Atten= 81%, Lag= 0.0 min
 Discarded = 0.21 cfs @ 11.78 hrs, Volume= 0.076 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 211.25' @ 12.55 hrs Surf.Area= 0.025 ac Storage= 0.020 af

Plug-Flow detention time=25.1 min calculated for 0.076 af (100% of inflow)
 Center-of-Mass det. time= 25.1 min (858.2 - 833.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	210.00'	0.021 af	16.08'W x 67.33'L x 3.21'H Field A 0.080 af Overall - 0.027 af Embedded = 0.053 af x 40.0% Voids
#2A	210.50'	0.027 af	Cultec R-280HD x 27 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 3 rows
		0.048 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	210.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	212.00'	8.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 212.00' / 210.00' S= 0.0667'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.21 cfs @ 11.78 hrs HW=210.03' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=210.00' (Free Discharge)

↑**2=Culvert** (Controls 0.00 cfs)

Summary for Pond LC-6(2): Leaching Chamber Bed #6(2)

Inflow Area = 0.391 ac, 56.26% Impervious, Inflow Depth = 0.00" for 10 yr event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.50' @ 0.00 hrs Surf.Area= 0.010 ac Storage= 0.000 af

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

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Type III 24-hr 10 yr Rainfall=4.65"

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Volume	Invert	Avail.Storage	Storage Description
#1A	208.50'	0.008 af	16.50'W x 25.25'L x 2.54'H Field A 0.024 af Overall - 0.005 af Embedded = 0.019 af x 40.0% Voids
#2A	209.00'	0.005 af	Cultec R-150XLHD x 8 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.013 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.50'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.50' (Free Discharge)

↑**1=Exfiltration** (Passes 0.00 cfs of 0.08 cfs potential flow)

Summary for Pond LC-6A: Leaching Chamber Bed #6A

Inflow Area = 0.243 ac, 66.13% Impervious, Inflow Depth = 2.50" for 10 yr event
 Inflow = 0.71 cfs @ 12.09 hrs, Volume= 0.051 af
 Outflow = 0.17 cfs @ 11.83 hrs, Volume= 0.051 af, Atten= 76%, Lag= 0.0 min
 Discarded = 0.17 cfs @ 11.83 hrs, Volume= 0.051 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 215.00' @ 12.50 hrs Surf.Area= 0.020 ac Storage= 0.011 af

Plug-Flow detention time= 16.1 min calculated for 0.051 af (100% of inflow)
 Center-of-Mass det. time= 16.1 min (843.8 - 827.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	214.00'	0.021 af	14.17'W x 62.50'L x 3.54'H Field A 0.072 af Overall - 0.020 af Embedded = 0.052 af x 40.0% Voids
#2A	214.50'	0.020 af	Cultec R-330XLHD x 16 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		0.041 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	214.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.17 cfs @ 11.83 hrs HW=214.04' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Summary for Pond LC-7: Leaching Chamber Bed #7

Inflow Area = 0.822 ac, 41.73% Impervious, Inflow Depth = 1.56" for 10 yr event
 Inflow = 1.44 cfs @ 12.10 hrs, Volume= 0.107 af
 Outflow = 0.42 cfs @ 11.94 hrs, Volume= 0.107 af, Atten= 71%, Lag= 0.0 min
 Discarded = 0.42 cfs @ 11.94 hrs, Volume= 0.107 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 214.74' @ 12.49 hrs Surf.Area= 0.050 ac Storage= 0.019 af

Plug-Flow detention time= 10.4 min calculated for 0.107 af (100% of inflow)
 Center-of-Mass det. time= 10.4 min (870.3 - 859.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	214.00'	0.037 af	39.25'W x 56.00'L x 2.54'H Field A 0.128 af Overall - 0.035 af Embedded = 0.093 af x 40.0% Voids
#2A	214.50'	0.035 af	Cultec R-150XLHD x 55 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 11 rows
		0.072 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	214.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.42 cfs @ 11.94 hrs HW=214.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.42 cfs)

Summary for Pond LC2A(2): Leaching Chamber Bed #2A(2)

Inflow Area = 0.413 ac, 59.48% Impervious, Inflow Depth = 1.46" for 10 yr event
 Inflow = 0.79 cfs @ 12.24 hrs, Volume= 0.050 af
 Outflow = 0.04 cfs @ 12.17 hrs, Volume= 0.050 af, Atten= 95%, Lag= 0.0 min
 Discarded = 0.04 cfs @ 12.17 hrs, Volume= 0.050 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 195.99' @ 15.70 hrs Surf.Area= 0.037 ac Storage= 0.032 af

Plug-Flow detention time= 388.2 min calculated for 0.050 af (100% of inflow)
 Center-of-Mass det. time= 388.2 min (1,209.7 - 821.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	194.50'	0.046 af	18.00'W x 89.50'L x 4.29'H Field A 0.159 af Overall - 0.044 af Embedded = 0.115 af x 40.0% Voids
#2A	195.25'	0.044 af	Cultec R-330XLHD x 36 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 3 rows
		0.090 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	194.50'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.17 hrs HW=194.57' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.04 cfs)

Summary for Pond LC4A: Leaching Chamber Bed #4A

Inflow Area = 0.308 ac, 62.97% Impervious, Inflow Depth = 2.86" for 10 yr event
 Inflow = 1.03 cfs @ 12.09 hrs, Volume= 0.073 af
 Outflow = 0.41 cfs @ 12.33 hrs, Volume= 0.073 af, Atten= 60%, Lag= 14.5 min
 Discarded = 0.16 cfs @ 11.70 hrs, Volume= 0.067 af
 Primary = 0.25 cfs @ 12.33 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.24' @ 12.33 hrs Surf.Area= 0.020 ac Storage= 0.017 af

Plug-Flow detention time=22.8 min calculated for 0.073 af (100% of inflow)
 Center-of-Mass det. time= 22.8 min (839.2 - 816.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	197.70'	0.016 af	15.25'W x 56.00'L x 2.54'H Field A 0.050 af Overall - 0.009 af Embedded = 0.040 af x 40.0% Voids
#2A	198.20'	0.009 af	Cultec R-150XLHD x 15 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 3 rows
		0.026 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.70'	8.270 in/hr Exfiltration over Surface area
#2	Primary	199.00'	6.0" Round Culvert X 2.00 L= 23.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 199.00' / 198.00' S= 0.0435'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.16 cfs @ 11.70 hrs HW=197.73' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=0.25 cfs @ 12.33 hrs HW=199.24' (Free Discharge)
 ↑2=Culvert (Inlet Controls 0.25 cfs @ 1.32 fps)

Summary for Pond RG10: Rain Garden 10

Inflow Area = 0.193 ac, 27.46% Impervious, Inflow Depth = 1.86" for 10 yr event
 Inflow = 0.43 cfs @ 12.08 hrs, Volume= 0.030 af
 Outflow = 0.43 cfs @ 12.08 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.2 min
 Discarded = 0.02 cfs @ 12.08 hrs, Volume= 0.014 af
 Primary = 0.41 cfs @ 12.08 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.83' @ 12.08 hrs Surf.Area= 288 sf Storage= 79 cf

Plug-Flow detention time=25.5 min calculated for 0.030 af (100% of inflow)
 Center-of-Mass det. time= 25.4 min (873.6 - 848.2)

Volume	Invert	Avail.Storage	Storage Description			
#1	199.50'	168 cf	Custom Stage Data (Irregular) listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
199.50	193	53.0	0	0	193	
200.10	379	72.0	168	168	386	

Device	Routing	Invert	Outlet Devices	
#1	Primary	199.80'	2.0" x 2.0" Horiz. Orifice/Grate X 36.00 C= 0.600 Limited to weir flow at low heads	
#2	Discarded	199.50'	2.410 in/hr Exfiltration over Surface area	

Discarded OutFlow Max=0.02 cfs @ 12.08 hrs HW=199.83' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.41 cfs @ 12.08 hrs HW=199.83' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.41 cfs @ 0.57 fps)

Summary for Subcatchment 1A: PDA-1A

Runoff = 0.69 cfs @ 12.09 hrs, Volume= 0.050 af, Depth= 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
* 3,648	98	Pavement/sidewalks, HSG A
2,000	98	Roofs, HSG A
5,579	39	>75% Grass cover, Good, HSG A
11,227	69	Weighted Average
5,579		49.69% Pervious Area
5,648		50.31% Impervious Area

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

Summary for Subcatchment 1S: PDA-1

Runoff = 1.05 cfs @ 12.09 hrs, Volume= 0.075 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
* 5,800	98	Pavement/sidewalks, HSG A
1,000	98	Roofs, HSG A
3,496	61	>75% Grass cover, Good, HSG B
10,296	85	Weighted Average
3,496		33.95% Pervious Area
6,800		66.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, ab Grass: Short n= 0.150 P2= 3.20"
1.2	200	0.0200	2.87		Shallow Concentrated Flow, bc Paved Kv= 20.3 fps
6.0	250	Total			

Summary for Subcatchment 2A: PDA-2A

Runoff = 1.61 cfs @ 12.12 hrs, Volume= 0.125 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
* 6,300	98	Roads/swalks, HSG B
7,290	61	>75% Grass cover, Good, HSG B
4,400	98	Roofs, HSG B
17,990	83	Weighted Average
7,290		40.52% Pervious Area
10,700		59.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
1.3	305	0.0400	4.06		Shallow Concentrated Flow, bc Paved Kv= 20.3 fps
8.4	355	Total			

Summary for Subcatchment 2B: PDA-2B

Runoff = 0.94 cfs @ 12.09 hrs, Volume= 0.067 af, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
* 4,399	98	Roads/swalks, roofs, HSG B
4,573	61	>75% Grass cover, Good, HSG B
4,049	58	Woods/grass comb., Good, HSG B
13,021	73	Weighted Average
8,622		66.22% Pervious Area
4,399		33.78% Impervious Area

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

Summary for Subcatchment 3S: PDA-3

Runoff = 1.02 cfs @ 12.09 hrs, Volume= 0.073 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
* 4,430	98	Pavement, HSG B
3,551	61	>75% Grass cover, Good, HSG B
* 2,032	98	Roofs, HSG B
10,013	85	Weighted Average
3,551		35.46% Pervious Area
6,462		64.54% Impervious Area

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

Summary for Subcatchment 4A: PDA-4A

Runoff = 1.30 cfs @ 12.09 hrs, Volume= 0.093 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
1,591	61	>75% Grass cover, Good, HSG B
* 6,155	98	Unconnected pavement, HSG B (sidewalks,road,deck,patio)
942	39	>75% Grass cover, Good, HSG A
2,440	61	>75% Grass cover, Good, HSG B
2,300	98	Unconnected roofs, HSG A
13,428	83	Weighted Average
4,973		37.03% Pervious Area
8,455		62.97% Impervious Area
8,455		100.00% Unconnected

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

Summary for Subcatchment 4S: PDA-4

Runoff = 3.68 cfs @ 12.09 hrs, Volume= 0.264 af, Depth= 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
22,163	61	>75% Grass cover, Good, HSG B
5,355	98	Roofs, HSG B
* 15,394	98	Unconnected pavement, HSG B (sidewalks,road,deck,patio)
942	39	>75% Grass cover, Good, HSG A
43,854	78	Weighted Average
23,105		52.69% Pervious Area
20,749		47.31% Impervious Area
15,394		74.19% Unconnected

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Type III 24-hr 25 yr Rainfall=5.50"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	26	0.0580	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
0.1	5	0.0500	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.20"
1.8	19	0.0500	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
0.0	10	0.0440	3.38		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.1	11	0.0270	3.34		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	110	0.0310	2.83		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.0	7	0.0290	3.46		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.7	104	0.0250	2.55		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	59	0.0310	3.57		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	17	0.0350	3.01		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	87	0.0450	4.31		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.2	455	Total			

Summary for Subcatchment 5A: PDA-5A

Runoff = 1.47 cfs @ 12.09 hrs, Volume= 0.104 af, Depth= 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
6,896	61	>75% Grass cover, Good, HSG B
* 1,621	98	ex Roofs, HSG B
* 5,815	98	HSG B (sidewalks,road,deck,patio)
2,961	58	Woods/grass comb., Good, HSG B
* 600	98	gazebo roof
17,893	77	Weighted Average
9,857		55.09% Pervious Area
8,036		44.91% Impervious Area

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

Summary for Subcatchment 5R: front roof of unit 26

Runoff = 0.05 cfs @ 12.08 hrs, Volume= 0.004 af, Depth= 5.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
* 400	98	Roofs
400		100.00% Impervious Area

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

Summary for Subcatchment 5S: PDA-5

Runoff = 0.84 cfs @ 12.09 hrs, Volume= 0.060 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
6,991	61	>75% Grass cover, Good, HSG B
* 840	98	ex Roofs, HSG B
* 2,660	98	HSG B (sidewalks,road,deck,patio,roofs)
2,000	58	Woods/grass comb., Good, HSG B
12,491	71	Weighted Average
8,991		71.98% Pervious Area
3,500		28.02% Impervious Area

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

Summary for Subcatchment 6A: PDA-6A

Runoff = 0.92 cfs @ 12.09 hrs, Volume= 0.066 af, Depth= 3.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

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Type III 24-hr 25 yr Rainfall=5.50"

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	Area (sf)	CN	Description
*	3,885	98	roads/swalks
	3,115	98	Unconnected roofs, HSG B
	3,204	39	>75% Grass cover, Good, HSG A
	382	61	>75% Grass cover, Good, HSG B
	10,586	79	Weighted Average
	3,586		33.87% Pervious Area
	7,000		66.13% Impervious Area
	3,115		44.50% Unconnected

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

Summary for Subcatchment 6S: PDA-6

Runoff = 1.40 cfs @ 12.09 hrs, Volume= 0.099 af, Depth= 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

	Area (sf)	CN	Description
*	5,500	98	Roads HSG B
	887	98	Unconnected roofs, HSG B
*	2,400	98	Patios
	3,716	61	>75% Grass cover, Good, HSG B
	3,730	39	>75% Grass cover, Good, HSG A
*	790	98	gar roofs
	17,023	77	Weighted Average
	7,446		43.74% Pervious Area
	9,577		56.26% Impervious Area
	887		9.26% Unconnected

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

Summary for Subcatchment 7A: Units 27,28 and back of 24-26 roof area

Runoff = 0.36 cfs @ 12.08 hrs, Volume= 0.029 af, Depth= 5.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

	Area (sf)	CN	Description
*	2,900	98	Roofs
	2,900		100.00% Impervious Area

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

Summary for Subcatchment 7S: PDA-7

Runoff = 2.03 cfs @ 12.09 hrs, Volume= 0.148 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
14,248	39	>75% Grass cover, Good, HSG A
* 14,932	98	HSG A (sidewalks,road,deck,patio)
5,106	61	>75% Grass cover, Good, HSG B
1,500	55	Woods, Good, HSG B
35,786	67	Weighted Average
20,854		58.27% Pervious Area
14,932		41.73% Impervious Area

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

Summary for Subcatchment 10A: PDA-10A

Runoff = 0.78 cfs @ 12.08 hrs, Volume= 0.056 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
14,275	61	>75% Grass cover, Good, HSG B
1,078	98	Roofs, HSG B
15,353	64	Weighted Average
14,275		92.98% Pervious Area
1,078		7.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0600	0.23		Sheet Flow, ab
					Grass: Short n= 0.150 P2= 3.20"
1.5	277	0.0380	3.14		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
5.1	327	Total			

Summary for Subcatchment 10S: FLOW to rain garden (PDA-10)

Runoff = 0.58 cfs @ 12.08 hrs, Volume= 0.040 af, Depth= 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
6,108	61	>75% Grass cover, Good, HSG B
2,312	98	Roofs, HSG B
8,420	71	Weighted Average
6,108		72.54% Pervious Area
2,312		27.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0600	0.23		Sheet Flow, ab
					Grass: Short n= 0.150 P2= 3.20"
1.5	277	0.0380	3.14		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
5.1	327	Total			

Summary for Subcatchment 11S: PDA-11

Runoff = 0.90 cfs @ 12.16 hrs, Volume= 0.091 af, Depth= 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
9,901	39	>75% Grass cover, Good, HSG A
14,000	61	>75% Grass cover, Good, HSG B
5,000	30	Woods, Good, HSG A
12,000	55	Woods, Good, HSG B
* 2,400	98	Roofs/drives, HSG B
43,301	53	Weighted Average
40,901		94.46% Pervious Area
2,400		5.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0870	0.12		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
3.0	530	0.0330	2.92		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
9.9	580	Total			

Summary for Subcatchment 13S: PDA-12

Runoff = 0.15 cfs @ 12.59 hrs, Volume= 0.043 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Adj	Description
31,415	39		>75% Grass cover, Good, HSG A
2,676	98		Roofs, HSG A
10,740	30		Woods, Good, HSG A
* 4,009	98		Unconnected roofs, HSG A (deck,patio)
13,912	32		Woods/grass comb., Good, HSG A
62,752	42	40	Weighted Average, UI Adjusted
56,067			89.35% Pervious Area
6,685			10.65% Impervious Area
4,009			59.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0156	0.06		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
6.6	320	0.0025	0.81		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
20.2	370	Total			

Summary for Reach 3R: Existing. Rect. Concrete Channel

Inflow Area = 2.539 ac, 34.42% Impervious, Inflow Depth = 1.01" for 25 yr event
 Inflow = 4.56 cfs @ 12.17 hrs, Volume= 0.213 af
 Outflow = 4.55 cfs @ 12.18 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Max. Velocity= 5.81 fps, Min. Travel Time= 0.4 min
 Avg. Velocity = 1.33 fps, Avg. Travel Time= 1.8 min

Peak Storage= 114 cf @ 12.18 hrs
 Average Depth at Peak Storage= 0.39'
 Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 17.02 cfs

2.00' x 1.00' deep channel, n= 0.011 Concrete pipe, straight & clean
 Length= 145.0' Slope= 0.0100 '/'
 Inlet Invert= 193.98', Outlet Invert= 192.53'



Summary for Pond 2P: Leaching Chamber Bed #10A

Inflow Area = 0.352 ac, 7.02% Impervious, Inflow Depth = 0.74" for 25 yr event
 Inflow = 0.74 cfs @ 12.09 hrs, Volume= 0.022 af
 Outflow = 0.04 cfs @ 12.07 hrs, Volume= 0.022 af, Atten= 95%, Lag= 0.0 min
 Discarded = 0.04 cfs @ 12.07 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 192.68' @ 13.21 hrs Surf.Area= 0.016 ac Storage= 0.015 af

Plug-Flow detention time= 169.8 min calculated for 0.022 af (100% of inflow)
 Center-of-Mass det. time= 169.8 min (925.0 - 755.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	191.00'	0.021 af	14.33'W x 49.00'L x 3.96'H Field A 0.064 af Overall - 0.012 af Embedded = 0.052 af x 40.0% Voids
#2A	191.75'	0.012 af	Cultec R-280HD x 12 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 2 rows
		0.033 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	191.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.07 hrs HW=191.09' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Summary for Pond 10P: Leaching Chamber Bed #1A

Inflow Area = 0.451 ac, 40.52% Impervious, Inflow Depth = 1.97" for 25 yr event
 Inflow = 1.26 cfs @ 12.09 hrs, Volume= 0.074 af
 Outflow = 0.05 cfs @ 11.68 hrs, Volume= 0.074 af, Atten= 96%, Lag= 0.0 min
 Discarded = 0.05 cfs @ 11.68 hrs, Volume= 0.074 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 194.93' @ 15.11 hrs Surf.Area= 0.021 ac Storage= 0.044 af

Plug-Flow detention time= 373.0 min calculated for 0.074 af (100% of inflow)
 Center-of-Mass det. time= 373.0 min (1,190.8 - 817.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	191.50'	0.038 af	19.50'W x 47.37'L x 6.00'H Field A 0.127 af Overall - 0.033 af Embedded = 0.094 af x 40.0% Voids
#2A	192.50'	0.033 af	Cultec R-902HD x 22 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 2 Rows of 11 Chambers Cap Storage= +2.8 cf x 2 x 2 rows = 11.0 cf

0.071 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	191.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 11.68 hrs HW=191.56' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Summary for Pond 13P: Rain Garden 10A

Inflow Area = 0.352 ac, 7.02% Impervious, Inflow Depth = 1.91" for 25 yr event
 Inflow = 0.78 cfs @ 12.08 hrs, Volume= 0.056 af
 Outflow = 0.78 cfs @ 12.09 hrs, Volume= 0.056 af, Atten= 1%, Lag= 0.8 min
 Discarded = 0.04 cfs @ 12.09 hrs, Volume= 0.034 af
 Primary = 0.74 cfs @ 12.09 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 197.54' @ 12.09 hrs Surf.Area= 746 sf Storage= 325 cf

Plug-Flow detention time=52.3 min calculated for 0.056 af (100% of inflow)
 Center-of-Mass det. time= 52.3 min (909.2 - 856.9)

Volume	Invert	Avail.Storage	Storage Description
#1	197.00'	448 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.00	460	118.0	0	0	460
197.70	840	136.0	448	448	835

Device	Routing	Invert	Outlet Devices
#1	Primary	197.50'	2.0" x 2.0" Horiz. Orifice/Grate X 36.00 C= 0.600 Limited to weir flow at low heads
#2	Discarded	197.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.09 hrs HW=197.54' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.73 cfs @ 12.09 hrs HW=197.54' (Free Discharge)

↑**1=Orifice/Grate** (Weir Controls 0.73 cfs @ 0.69 fps)

Summary for Pond 14P: existing detention basin

Inflow Area = 1.441 ac, 10.65% Impervious, Inflow Depth = 0.36" for 25 yr event
 Inflow = 0.15 cfs @ 12.59 hrs, Volume= 0.043 af
 Outflow = 0.15 cfs @ 12.63 hrs, Volume= 0.043 af, Atten= 2%, Lag= 2.8 min
 Discarded = 0.15 cfs @ 12.63 hrs, Volume= 0.043 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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Type III 24-hr 25 yr Rainfall=5.50"

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Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.01' @ 12.63 hrs Surf.Area= 1,927 sf Storage= 24 cf

Plug-Flow detention time=2.9 min calculated for 0.043 af (100% of inflow)
 Center-of-Mass det. time=2.9 min (986.1 - 983.2)

Volume	Invert	Avail.Storage	Storage Description			
#1	208.00'	42,696 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
208.00	1,882	211.0	0	0	1,882	
209.00	7,002	471.0	4,171	4,171	15,997	
213.00	12,526	578.0	38,524	42,696	25,172	

Device	Routing	Invert	Outlet Devices	
#1	Primary	208.42'	30.0" Round Culvert L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 208.42' / 207.92' S= 0.0100 '/ Cc= 0.900 n= 0.030 Corrugated metal, Flow Area= 4.91 sf	
#2	Discarded	208.00'	12.060 in/hr Exfiltration over Surface area	

Discarded OutFlow Max=0.54 cfs @ 12.63 hrs HW=208.01' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.54 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.00' (Free Discharge)
 ↳ **1=Culvert** (Controls 0.00 cfs)

Summary for Pond LC 4: Leaching Chamber Bed #4

[79] Warning: Submerged Pond LC 4B Primary device # 2 OUTLET by 0.30'

Inflow Area = 1.007 ac, 47.31% Impervious, Inflow Depth = 1.65" for 25 yr event
 Inflow = 3.37 cfs @ 12.13 hrs, Volume= 0.139 af
 Outflow = 3.21 cfs @ 12.16 hrs, Volume= 0.139 af, Atten= 5%, Lag= 1.7 min
 Discarded = 0.11 cfs @ 11.74 hrs, Volume= 0.040 af
 Primary = 3.10 cfs @ 12.16 hrs, Volume= 0.098 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 202.30' @ 12.16 hrs Surf.Area= 0.013 ac Storage= 0.023 af

Plug-Flow detention time=22.7 min calculated for 0.139 af (100% of inflow)
 Center-of-Mass det. time=22.7 min (770.6 - 747.9)

Volume	Invert	Avail.Storage	Storage Description	
#1A	199.30'	0.014 af	16.75'W x 33.00'L x 3.71'H Field A 0.047 af Overall - 0.012 af Embedded = 0.035 af x 40.0% Voids	
#2A	199.80'	0.012 af	Cultec R-280HD x 12 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 3 rows	

0.026 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.30'	8.270 in/hr Exfiltration over Surface area
#2	Primary	200.90'	12.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 200.90' / 198.80' S= 0.0350'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf
#3	Primary	201.50'	4.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 201.50' / 199.80' S= 0.0340'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.11 cfs @ 11.74 hrs HW=199.34' (Free Discharge)

←1=Exfiltration (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=3.10 cfs @ 12.16 hrs HW=202.30' (Free Discharge)

←2=Culvert (Inlet Controls 2.84 cfs @ 3.61 fps)

←3=Culvert (Inlet Controls 0.26 cfs @ 3.03 fps)

Summary for Pond LC 4B: Leaching Chamber Bed #4B

[79] Warning: Submerged Pond LC 4C Primary device # 2 OUTLET by 0.78'

Inflow Area =	1.007 ac, 47.31% Impervious, Inflow Depth = 2.33" for 25 yr event
Inflow =	3.58 cfs @ 12.11 hrs, Volume= 0.195 af
Outflow =	3.46 cfs @ 12.13 hrs, Volume= 0.195 af, Atten= 3%, Lag= 1.3 min
Discarded =	0.09 cfs @ 11.17 hrs, Volume= 0.057 af
Primary =	3.37 cfs @ 12.13 hrs, Volume= 0.139 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 203.98' @ 12.13 hrs Surf.Area= 0.011 ac Storage= 0.013 af

Plug-Flow detention time= 11.9 min calculated for 0.195 af (100% of inflow)
Center-of-Mass det. time= 11.9 min (790.8 - 778.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	202.00'	0.008 af	14.50"W x 33.50"L x 2.54"H Field A 0.028 af Overall - 0.008 af Embedded = 0.021 af x 40.0% Voids
#2A	202.50'	0.008 af	Cultec R-150XLHD x 12 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.016 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	202.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	202.90'	10.0" Round Culvert X 2.00 L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 202.90' / 202.00' S= 0.0450'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.55 sf

Discarded OutFlow Max=0.09 cfs @ 11.17 hrs HW=202.03' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=3.37 cfs @ 12.13 hrs HW=203.98' (Free Discharge)

↑**2=Culvert** (Inlet Controls 3.37 cfs @ 3.09 fps)

Summary for Pond LC 4C: Leaching Chamber Bed #4C

Inflow Area =	1.007 ac, 47.31% Impervious, Inflow Depth = 3.14" for 25 yr event
Inflow =	3.68 cfs @ 12.09 hrs, Volume= 0.264 af
Outflow =	3.63 cfs @ 12.11 hrs, Volume= 0.264 af, Atten= 2%, Lag= 0.9 min
Discarded =	0.05 cfs @ 9.62 hrs, Volume= 0.068 af
Primary =	3.58 cfs @ 12.11 hrs, Volume= 0.195 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 205.54' @ 12.11 hrs Surf.Area= 0.006 ac Storage= 0.010 af

Plug-Flow detention time= 19.8 min calculated for 0.263 af (100% of inflow)
Center-of-Mass det. time= 19.8 min (842.9 - 823.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	202.50'	0.007 af	7.92'W x 33.00'L x 3.71'H Field A 0.022 af Overall - 0.004 af Embedded = 0.018 af x 40.0% Voids
#2A	203.50'	0.004 af	Cultec R-280HD x 4 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 1 rows
		0.011 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	202.50'	8.270 in/hr Exfiltration over Surface area
#2	Primary	204.40'	8.0" Round Culvert X 3.00 L= 8.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 204.40' / 203.20' S= 0.1500'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.05 cfs @ 9.62 hrs HW=202.54' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=3.57 cfs @ 12.11 hrs HW=205.54' (Free Discharge)

↑**2=Culvert** (Inlet Controls 3.57 cfs @ 3.41 fps)

Summary for Pond LC-1: Leaching Chamber Bed #1

Inflow Area = 0.236 ac, 66.05% Impervious, Inflow Depth = 3.83" for 25 yr event
 Inflow = 1.05 cfs @ 12.09 hrs, Volume= 0.075 af
 Outflow = 0.07 cfs @ 11.29 hrs, Volume= 0.075 af, Atten= 93%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 11.29 hrs, Volume= 0.075 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 193.92' @ 13.73 hrs Surf.Area= 0.028 ac Storage= 0.033 af

Plug-Flow detention time= 184.0 min calculated for 0.075 af (100% of inflow)
 Center-of-Mass det. time= 184.0 min (987.9 - 803.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	192.00'	0.029 af	14.50'W x 84.75'L x 3.29'H Field A 0.093 af Overall - 0.020 af Embedded = 0.073 af x 40.0% Voids
#2A	192.75'	0.020 af	Cultec R-150XLHD x 32 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.049 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	192.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 11.29 hrs HW=192.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Summary for Pond LC-2A(1): Leaching Chamber Bed #2A(1)

Inflow Area = 0.413 ac, 59.48% Impervious, Inflow Depth = 3.63" for 25 yr event
 Inflow = 1.61 cfs @ 12.12 hrs, Volume= 0.125 af
 Outflow = 1.27 cfs @ 12.19 hrs, Volume= 0.107 af, Atten= 21%, Lag= 4.5 min
 Discarded = 0.02 cfs @ 8.81 hrs, Volume= 0.031 af
 Primary = 1.25 cfs @ 12.19 hrs, Volume= 0.076 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.65' @ 12.19 hrs Surf.Area= 0.016 ac Storage= 0.034 af

Plug-Flow detention time= 162.4 min calculated for 0.107 af (85% of inflow)
 Center-of-Mass det. time= 99.5 min (911.4 - 811.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	196.00'	0.023 af	13.17'W x 54.50'L x 4.54'H Field A 0.075 af Overall - 0.017 af Embedded = 0.058 af x 40.0% Voids
#2A	197.00'	0.017 af	Cultec R-330XLHD x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

0.040 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	196.00'	1.020 in/hr Exfiltration over Surface area
#2	Primary	198.70'	6.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 198.70' / 198.00' S= 0.0700'/' Cc= 0.900 n= 0.015 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 8.81 hrs HW=196.05' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.25 cfs @ 12.19 hrs HW=199.65' (Free Discharge)

↑**2=Culvert** (Inlet Controls 1.25 cfs @ 3.18 fps)

Summary for Pond LC-2B: Leaching Chamber Bed #2B

Inflow Area = 0.299 ac, 33.78% Impervious, Inflow Depth = 2.68" for 25 yr event
 Inflow = 0.94 cfs @ 12.09 hrs, Volume= 0.067 af
 Outflow = 0.03 cfs @ 11.12 hrs, Volume= 0.046 af, Atten= 97%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.12 hrs, Volume= 0.046 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 201.64' @ 16.91 hrs Surf.Area= 0.028 ac Storage= 0.041 af

Plug-Flow detention time= 472.6 min calculated for 0.046 af (69% of inflow)
 Center-of-Mass det. time= 373.4 min (1,208.7 - 835.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	199.00'	0.038 af	15.17'W x 79.50'L x 4.29'H Field A 0.119 af Overall - 0.024 af Embedded = 0.094 af x 40.0% Voids
#2A	200.00'	0.024 af	Cultec R-330XLHD x 20 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
			0.062 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.12 hrs HW=199.04' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-3: Leaching Chamber Bed #3

Inflow Area = 0.230 ac, 64.54% Impervious, Inflow Depth = 3.83" for 25 yr event
 Inflow = 1.02 cfs @ 12.09 hrs, Volume= 0.073 af
 Outflow = 0.33 cfs @ 12.39 hrs, Volume= 0.073 af, Atten= 68%, Lag= 18.4 min
 Discarded = 0.15 cfs @ 11.67 hrs, Volume= 0.066 af
 Primary = 0.18 cfs @ 12.39 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.45' @ 12.39 hrs Surf.Area= 0.018 ac Storage= 0.018 af

Plug-Flow detention time=23.2 min calculated for 0.073 af (100% of inflow)
 Center-of-Mass det. time= 23.2 min (827.1 - 803.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	197.85'	0.014 af	12.25'W x 65.25'L x 2.54'H Field A 0.047 af Overall - 0.011 af Embedded = 0.035 af x 40.0% Voids
#2A	198.35'	0.011 af	Cultec R-150XLHD x 18 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 3 rows
		0.025 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.85'	8.270 in/hr Exfiltration over Surface area
#2	Primary	199.00'	4.0" Round Culvert L= 34.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 199.00' / 198.40' S= 0.0176 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.15 cfs @ 11.67 hrs HW=197.88' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=0.18 cfs @ 12.39 hrs HW=199.45' (Free Discharge)

↑**2=Culvert** (Inlet Controls 0.18 cfs @ 2.02 fps)

Summary for Pond LC-5: Leaching Chamber Bed #5

Inflow Area = 0.287 ac, 28.02% Impervious, Inflow Depth = 2.50" for 25 yr event
 Inflow = 0.84 cfs @ 12.09 hrs, Volume= 0.060 af
 Outflow = 0.03 cfs @ 11.30 hrs, Volume= 0.048 af, Atten= 96%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.30 hrs, Volume= 0.048 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 215.39' @ 16.30 hrs Surf.Area= 0.029 ac Storage= 0.035 af

Plug-Flow detention time=456.7 min calculated for 0.048 af (80% of inflow)
 Center-of-Mass det. time= 377.3 min (1,217.5 - 840.2)

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Type III 24-hr 25 yr Rainfall=5.50"

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Volume	Invert	Avail.Storage	Storage Description
#1A	213.50'	0.029 af	29.67'W x 42.50'L x 3.54'H Field A 0.103 af Overall - 0.031 af Embedded = 0.071 af x 40.0% Voids
#2A	214.00'	0.031 af	Cultec R-330XLHD x 25 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 5 rows
		0.060 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	213.50'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 11.30 hrs HW=213.54' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-5A: Leaching Chamber Bed #5A

Inflow Area = 0.411 ac, 44.91% Impervious, Inflow Depth = 3.05" for 25 yr event
 Inflow = 1.47 cfs @ 12.09 hrs, Volume= 0.104 af
 Outflow = 0.03 cfs @ 10.57 hrs, Volume= 0.056 af, Atten= 98%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 10.57 hrs, Volume= 0.056 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 211.25' @ 17.79 hrs Surf.Area= 0.033 ac Storage= 0.069 af

Plug-Flow detention time=476.5 min calculated for 0.056 af (54% of inflow)
 Center-of-Mass det. time= 363.7 min (1,189.1 - 825.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	208.00'	0.051 af	33.25'W x 42.70'L x 5.75'H Field A 0.187 af Overall - 0.060 af Embedded = 0.127 af x 40.0% Voids
#2A	208.75'	0.060 af	Cultec R-902HD x 40 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 4 Rows of 10 Chambers Cap Storage= +2.8 cf x 2 x 4 rows = 22.1 cf
		0.111 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 10.57 hrs HW=208.06' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-6: Leaching Chamber Bed #6

Inflow Area = 0.391 ac, 56.26% Impervious, Inflow Depth = 3.05" for 25 yr event
 Inflow = 1.40 cfs @ 12.09 hrs, Volume= 0.099 af
 Outflow = 0.21 cfs @ 11.71 hrs, Volume= 0.099 af, Atten= 85%, Lag= 0.0 min
 Discarded = 0.21 cfs @ 11.71 hrs, Volume= 0.099 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 211.82' @ 12.62 hrs Surf.Area= 0.025 ac Storage= 0.030 af

Plug-Flow detention time=43.4 min calculated for 0.099 af (100% of inflow)
 Center-of-Mass det. time= 43.4 min (868.8 - 825.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	210.00'	0.021 af	16.08'W x 67.33'L x 3.21'H Field A 0.080 af Overall - 0.027 af Embedded = 0.053 af x 40.0% Voids
#2A	210.50'	0.027 af	Cultec R-280HD x 27 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 3 rows
		0.048 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	210.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	212.00'	8.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 212.00' / 210.00' S= 0.0667'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.21 cfs @ 11.71 hrs HW=210.03' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=210.00' (Free Discharge)

↑**2=Culvert** (Controls 0.00 cfs)

Summary for Pond LC-6(2): Leaching Chamber Bed #6(2)

Inflow Area = 0.391 ac, 56.26% Impervious, Inflow Depth = 0.00" for 25 yr event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.50' @ 0.00 hrs Surf.Area= 0.010 ac Storage= 0.000 af

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

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Type III 24-hr 25 yr Rainfall=5.50"

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Volume	Invert	Avail.Storage	Storage Description
#1A	208.50'	0.008 af	16.50'W x 25.25'L x 2.54'H Field A 0.024 af Overall - 0.005 af Embedded = 0.019 af x 40.0% Voids
#2A	209.00'	0.005 af	Cultec R-150XLHD x 8 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.013 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.50'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.50' (Free Discharge)

↑**1=Exfiltration** (Passes 0.00 cfs of 0.08 cfs potential flow)

Summary for Pond LC-6A: Leaching Chamber Bed #6A

Inflow Area = 0.243 ac, 66.13% Impervious, Inflow Depth = 3.24" for 25 yr event
 Inflow = 0.92 cfs @ 12.09 hrs, Volume= 0.066 af
 Outflow = 0.17 cfs @ 11.75 hrs, Volume= 0.066 af, Atten= 82%, Lag= 0.0 min
 Discarded = 0.17 cfs @ 11.75 hrs, Volume= 0.066 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 215.46' @ 12.55 hrs Surf.Area= 0.020 ac Storage= 0.018 af

Plug-Flow detention time=27.6 min calculated for 0.066 af (100% of inflow)
 Center-of-Mass det. time= 27.6 min (847.9 - 820.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	214.00'	0.021 af	14.17'W x 62.50'L x 3.54'H Field A 0.072 af Overall - 0.020 af Embedded = 0.052 af x 40.0% Voids
#2A	214.50'	0.020 af	Cultec R-330XLHD x 16 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		0.041 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	214.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.17 cfs @ 11.75 hrs HW=214.04' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Summary for Pond LC-7: Leaching Chamber Bed #7

Inflow Area = 0.822 ac, 41.73% Impervious, Inflow Depth = 2.16" for 25 yr event
 Inflow = 2.03 cfs @ 12.09 hrs, Volume= 0.148 af
 Outflow = 0.42 cfs @ 11.84 hrs, Volume= 0.148 af, Atten= 79%, Lag= 0.0 min
 Discarded = 0.42 cfs @ 11.84 hrs, Volume= 0.148 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 215.18' @ 12.55 hrs Surf.Area= 0.050 ac Storage= 0.036 af

Plug-Flow detention time=22.5 min calculated for 0.148 af (100% of inflow)
 Center-of-Mass det. time= 22.5 min (872.6 - 850.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	214.00'	0.037 af	39.25'W x 56.00'L x 2.54'H Field A 0.128 af Overall - 0.035 af Embedded = 0.093 af x 40.0% Voids
#2A	214.50'	0.035 af	Cultec R-150XLHD x 55 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 11 rows
		0.072 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	214.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.42 cfs @ 11.84 hrs HW=214.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.42 cfs)

Summary for Pond LC2A(2): Leaching Chamber Bed #2A(2)

Inflow Area = 0.413 ac, 59.48% Impervious, Inflow Depth = 2.20" for 25 yr event
 Inflow = 1.25 cfs @ 12.19 hrs, Volume= 0.076 af
 Outflow = 0.04 cfs @ 12.08 hrs, Volume= 0.056 af, Atten= 97%, Lag= 0.0 min
 Discarded = 0.04 cfs @ 12.08 hrs, Volume= 0.056 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 196.79' @ 16.24 hrs Surf.Area= 0.037 ac Storage= 0.054 af

Plug-Flow detention time=505.9 min calculated for 0.056 af (74% of inflow)
 Center-of-Mass det. time= 442.7 min (1,262.0 - 819.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	194.50'	0.046 af	18.00'W x 89.50'L x 4.29'H Field A 0.159 af Overall - 0.044 af Embedded = 0.115 af x 40.0% Voids
#2A	195.25'	0.044 af	Cultec R-330XLHD x 36 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 3 rows
		0.090 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	194.50'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.08 hrs HW=194.56' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.04 cfs)

Summary for Pond LC4A: Leaching Chamber Bed #4A

Inflow Area = 0.308 ac, 62.97% Impervious, Inflow Depth = 3.63" for 25 yr event
 Inflow = 1.30 cfs @ 12.09 hrs, Volume= 0.093 af
 Outflow = 0.74 cfs @ 12.20 hrs, Volume= 0.093 af, Atten= 43%, Lag= 7.1 min
 Discarded = 0.16 cfs @ 11.65 hrs, Volume= 0.078 af
 Primary = 0.58 cfs @ 12.20 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.40' @ 12.20 hrs Surf.Area= 0.020 ac Storage= 0.019 af

Plug-Flow detention time=21.6 min calculated for 0.093 af (100% of inflow)
 Center-of-Mass det. time= 21.6 min (831.3 - 809.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	197.70'	0.016 af	15.25'W x 56.00'L x 2.54'H Field A 0.050 af Overall - 0.009 af Embedded = 0.040 af x 40.0% Voids
#2A	198.20'	0.009 af	Cultec R-150XLHD x 15 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 3 rows
		0.026 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.70'	8.270 in/hr Exfiltration over Surface area
#2	Primary	199.00'	6.0" Round Culvert X 2.00 L= 23.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 199.00' / 198.00' S= 0.0435'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.16 cfs @ 11.65 hrs HW=197.73' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=0.58 cfs @ 12.20 hrs HW=199.40' (Free Discharge)
 ↑2=Culvert (Inlet Controls 0.58 cfs @ 1.70 fps)

Summary for Pond RG10: Rain Garden 10

Inflow Area = 0.193 ac, 27.46% Impervious, Inflow Depth = 2.50" for 25 yr event
 Inflow = 0.58 cfs @ 12.08 hrs, Volume= 0.040 af
 Outflow = 0.58 cfs @ 12.08 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.2 min
 Discarded = 0.02 cfs @ 12.08 hrs, Volume= 0.016 af
 Primary = 0.56 cfs @ 12.08 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.84' @ 12.08 hrs Surf.Area= 290 sf Storage= 81 cf

Plug-Flow detention time=23.2 min calculated for 0.040 af (100% of inflow)
 Center-of-Mass det. time= 23.2 min (862.6 - 839.3)

Volume	Invert	Avail.Storage	Storage Description			
#1	199.50'	168 cf	Custom Stage Data (Irregular) listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
199.50	193	53.0	0	0	193	
200.10	379	72.0	168	168	386	

Device	Routing	Invert	Outlet Devices	
#1	Primary	199.80'	2.0" x 2.0" Horiz. Orifice/Grate X 36.00 C= 0.600 Limited to weir flow at low heads	
#2	Discarded	199.50'	2.410 in/hr Exfiltration over Surface area	

Discarded OutFlow Max=0.02 cfs @ 12.08 hrs HW=199.84' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.56 cfs @ 12.08 hrs HW=199.84' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.56 cfs @ 0.63 fps)

Summary for Subcatchment 1A: PDA-1A

Runoff = 0.99 cfs @ 12.09 hrs, Volume= 0.070 af, Depth= 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 3,648	98	Pavement/sidewalks, HSG A
2,000	98	Roofs, HSG A
5,579	39	>75% Grass cover, Good, HSG A
11,227	69	Weighted Average
5,579		49.69% Pervious Area
5,648		50.31% Impervious Area

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

Summary for Subcatchment 1S: PDA-1

Runoff = 1.34 cfs @ 12.09 hrs, Volume= 0.098 af, Depth= 4.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 5,800	98	Pavement/sidewalks, HSG A
1,000	98	Roofs, HSG A
3,496	61	>75% Grass cover, Good, HSG B
10,296	85	Weighted Average
3,496		33.95% Pervious Area
6,800		66.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, ab
					Grass: Short n= 0.150 P2= 3.20"
1.2	200	0.0200	2.87		Shallow Concentrated Flow, bc
					Paved Kv= 20.3 fps
6.0	250	Total			

Summary for Subcatchment 2A: PDA-2A

Runoff = 2.08 cfs @ 12.12 hrs, Volume= 0.163 af, Depth= 4.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

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Type III 24-hr 100 yr Rainfall=6.70"

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Area (sf)	CN	Description
* 6,300	98	Roads/swalks, HSG B
7,290	61	>75% Grass cover, Good, HSG B
4,400	98	Roofs, HSG B
17,990	83	Weighted Average
7,290		40.52% Pervious Area
10,700		59.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, ab Woods: Light underbrush n= 0.400 P2= 3.20"
1.3	305	0.0400	4.06		Shallow Concentrated Flow, bc Paved Kv= 20.3 fps
8.4	355	Total			

Summary for Subcatchment 2B: PDA-2B

Runoff = 1.29 cfs @ 12.09 hrs, Volume= 0.092 af, Depth= 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 4,399	98	Roads/swalks, roofs, HSG B
4,573	61	>75% Grass cover, Good, HSG B
4,049	58	Woods/grass comb., Good, HSG B
13,021	73	Weighted Average
8,622		66.22% Pervious Area
4,399		33.78% Impervious Area

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

Summary for Subcatchment 3S: PDA-3

Runoff = 1.30 cfs @ 12.09 hrs, Volume= 0.095 af, Depth= 4.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 4,430	98	Pavement, HSG B
3,551	61	>75% Grass cover, Good, HSG B
* 2,032	98	Roofs, HSG B
10,013	85	Weighted Average
3,551		35.46% Pervious Area
6,462		64.54% Impervious Area

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

Summary for Subcatchment 4A: PDA-4A

Runoff = 1.69 cfs @ 12.09 hrs, Volume= 0.122 af, Depth= 4.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
1,591	61	>75% Grass cover, Good, HSG B
* 6,155	98	Unconnected pavement, HSG B (sidewalks,road,deck,patio)
942	39	>75% Grass cover, Good, HSG A
2,440	61	>75% Grass cover, Good, HSG B
2,300	98	Unconnected roofs, HSG A
13,428	83	Weighted Average
4,973		37.03% Pervious Area
8,455		62.97% Impervious Area
8,455		100.00% Unconnected

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

Summary for Subcatchment 4S: PDA-4

Runoff = 4.91 cfs @ 12.09 hrs, Volume= 0.353 af, Depth= 4.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
22,163	61	>75% Grass cover, Good, HSG B
5,355	98	Roofs, HSG B
* 15,394	98	Unconnected pavement, HSG B (sidewalks,road,deck,patio)
942	39	>75% Grass cover, Good, HSG A
43,854	78	Weighted Average
23,105		52.69% Pervious Area
20,749		47.31% Impervious Area
15,394		74.19% Unconnected

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Type III 24-hr 100 yr Rainfall=6.70"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	26	0.0580	0.20		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
0.1	5	0.0500	1.09		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.20"
1.8	19	0.0500	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
0.0	10	0.0440	3.38		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.1	11	0.0270	3.34		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	110	0.0310	2.83		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.0	7	0.0290	3.46		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.7	104	0.0250	2.55		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	59	0.0310	3.57		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	17	0.0350	3.01		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	87	0.0450	4.31		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.2	455	Total			

Summary for Subcatchment 5A: PDA-5A

Runoff = 1.97 cfs @ 12.09 hrs, Volume= 0.140 af, Depth= 4.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
6,896	61	>75% Grass cover, Good, HSG B
* 1,621	98	ex Roofs, HSG B
* 5,815	98	HSG B (sidewalks,road,deck,patio)
2,961	58	Woods/grass comb., Good, HSG B
* 600	98	gazebo roof
17,893	77	Weighted Average
9,857		55.09% Pervious Area
8,036		44.91% Impervious Area

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

Summary for Subcatchment 5R: front roof of unit 26

Runoff = 0.06 cfs @ 12.08 hrs, Volume= 0.005 af, Depth= 6.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 400	98	Roofs
400		100.00% Impervious Area

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

Summary for Subcatchment 5S: PDA-5

Runoff = 1.17 cfs @ 12.09 hrs, Volume= 0.083 af, Depth= 3.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
6,991	61	>75% Grass cover, Good, HSG B
* 840	98	ex Roofs, HSG B
* 2,660	98	HSG B (sidewalks,road,deck,patio,roofs)
2,000	58	Woods/grass comb., Good, HSG B
12,491	71	Weighted Average
8,991		71.98% Pervious Area
3,500		28.02% Impervious Area

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

Summary for Subcatchment 6A: PDA-6A

Runoff = 1.22 cfs @ 12.09 hrs, Volume= 0.087 af, Depth= 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

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Type III 24-hr 100 yr Rainfall=6.70"

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Area (sf)	CN	Description
* 3,885	98	roads/swalks
3,115	98	Unconnected roofs, HSG B
3,204	39	>75% Grass cover, Good, HSG A
382	61	>75% Grass cover, Good, HSG B
10,586	79	Weighted Average
3,586		33.87% Pervious Area
7,000		66.13% Impervious Area
3,115		44.50% Unconnected

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

Summary for Subcatchment 6S: PDA-6

Runoff = 1.87 cfs @ 12.09 hrs, Volume= 0.133 af, Depth= 4.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 5,500	98	Roads HSG B
887	98	Unconnected roofs, HSG B
* 2,400	98	Patios
3,716	61	>75% Grass cover, Good, HSG B
3,730	39	>75% Grass cover, Good, HSG A
* 790	98	gar roofs
17,023	77	Weighted Average
7,446		43.74% Pervious Area
9,577		56.26% Impervious Area
887		9.26% Unconnected

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

Summary for Subcatchment 7A: Units 27,28 and back of 24-26 roof area

Runoff = 0.44 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 6.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
* 2,900	98	Roofs
2,900		100.00% Impervious Area

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

Summary for Subcatchment 7S: PDA-7

Runoff = 2.94 cfs @ 12.09 hrs, Volume= 0.210 af, Depth= 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
14,248	39	>75% Grass cover, Good, HSG A
* 14,932	98	HSG A (sidewalks,road,deck,patio)
5,106	61	>75% Grass cover, Good, HSG B
1,500	55	Woods, Good, HSG B
35,786	67	Weighted Average
20,854		58.27% Pervious Area
14,932		41.73% Impervious Area

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

Summary for Subcatchment 10A: PDA-10A

Runoff = 1.17 cfs @ 12.08 hrs, Volume= 0.082 af, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
14,275	61	>75% Grass cover, Good, HSG B
1,078	98	Roofs, HSG B
15,353	64	Weighted Average
14,275		92.98% Pervious Area
1,078		7.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0600	0.23		Sheet Flow, ab
					Grass: Short n= 0.150 P2= 3.20"
1.5	277	0.0380	3.14		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
5.1	327	Total			

Summary for Subcatchment 10S: FLOW to rain garden (PDA-10)

Runoff = 0.81 cfs @ 12.08 hrs, Volume= 0.056 af, Depth= 3.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
6,108	61	>75% Grass cover, Good, HSG B
2,312	98	Roofs, HSG B
8,420	71	Weighted Average
6,108		72.54% Pervious Area
2,312		27.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0600	0.23		Sheet Flow, ab
					Grass: Short n= 0.150 P2= 3.20"
1.5	277	0.0380	3.14		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
5.1	327	Total			

Summary for Subcatchment 11S: PDA-11

Runoff = 1.60 cfs @ 12.15 hrs, Volume= 0.146 af, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
9,901	39	>75% Grass cover, Good, HSG A
14,000	61	>75% Grass cover, Good, HSG B
5,000	30	Woods, Good, HSG A
12,000	55	Woods, Good, HSG B
* 2,400	98	Roofs/drives, HSG B
43,301	53	Weighted Average
40,901		94.46% Pervious Area
2,400		5.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0870	0.12		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
3.0	530	0.0330	2.92		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
9.9	580	Total			

Summary for Subcatchment 13S: PDA-12

Runoff = 0.47 cfs @ 12.46 hrs, Volume= 0.088 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Adj	Description
31,415	39		>75% Grass cover, Good, HSG A
2,676	98		Roofs, HSG A
10,740	30		Woods, Good, HSG A
* 4,009	98		Unconnected roofs, HSG A (deck,patio)
13,912	32		Woods/grass comb., Good, HSG A
62,752	42	40	Weighted Average, UI Adjusted
56,067			89.35% Pervious Area
6,685			10.65% Impervious Area
4,009			59.97% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0156	0.06		Sheet Flow, ab
					Woods: Light underbrush n= 0.400 P2= 3.20"
6.6	320	0.0025	0.81		Shallow Concentrated Flow, bc
					Unpaved Kv= 16.1 fps
20.2	370	Total			

Summary for Reach 3R: Existing. Rect. Concrete Channel

Inflow Area = 2.539 ac, 34.42% Impervious, Inflow Depth = 1.65" for 100 yr event
 Inflow = 6.96 cfs @ 12.16 hrs, Volume= 0.350 af
 Outflow = 6.95 cfs @ 12.17 hrs, Volume= 0.350 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Max. Velocity= 6.63 fps, Min. Travel Time= 0.4 min
 Avg. Velocity = 1.56 fps, Avg. Travel Time= 1.5 min

Peak Storage= 152 cf @ 12.17 hrs
 Average Depth at Peak Storage= 0.52'
 Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 17.02 cfs

2.00' x 1.00' deep channel, n= 0.011 Concrete pipe, straight & clean
 Length= 145.0' Slope= 0.0100 '/'
 Inlet Invert= 193.98', Outlet Invert= 192.53'



Summary for Pond 2P: Leaching Chamber Bed #10A

Inflow Area = 0.352 ac, 7.02% Impervious, Inflow Depth = 1.40" for 100 yr event
 Inflow = 1.12 cfs @ 12.09 hrs, Volume= 0.041 af
 Outflow = 0.04 cfs @ 11.97 hrs, Volume= 0.041 af, Atten= 96%, Lag= 0.0 min
 Discarded = 0.04 cfs @ 11.97 hrs, Volume= 0.041 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 194.63' @ 14.10 hrs Surf.Area= 0.016 ac Storage= 0.031 af

Plug-Flow detention time=340.2 min calculated for 0.041 af (100% of inflow)
 Center-of-Mass det. time= 340.1 min (1,099.7 - 759.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	191.00'	0.021 af	14.33'W x 49.00'L x 3.96'H Field A 0.064 af Overall - 0.012 af Embedded = 0.052 af x 40.0% Voids
#2A	191.75'	0.012 af	Cultec R-280HD x 12 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 2 rows
		0.033 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	191.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 11.97 hrs HW=191.04' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Summary for Pond 10P: Leaching Chamber Bed #1A

Inflow Area = 0.451 ac, 40.52% Impervious, Inflow Depth = 2.86" for 100 yr event
 Inflow = 1.78 cfs @ 12.09 hrs, Volume= 0.108 af
 Outflow = 0.05 cfs @ 11.45 hrs, Volume= 0.082 af, Atten= 97%, Lag= 0.0 min
 Discarded = 0.05 cfs @ 11.45 hrs, Volume= 0.082 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 197.46' @ 15.92 hrs Surf.Area= 0.021 ac Storage= 0.070 af

Plug-Flow detention time=479.6 min calculated for 0.082 af (77% of inflow)
 Center-of-Mass det. time= 408.5 min (1,219.4 - 810.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	191.50'	0.038 af	19.50'W x 47.37'L x 6.00'H Field A 0.127 af Overall - 0.033 af Embedded = 0.094 af x 40.0% Voids
#2A	192.50'	0.033 af	Cultec R-902HD x 22 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 2 Rows of 11 Chambers Cap Storage= +2.8 cf x 2 x 2 rows = 11.0 cf

0.071 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	191.50'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 11.45 hrs HW=191.56' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.05 cfs)

Summary for Pond 13P: Rain Garden 10A

Inflow Area = 0.352 ac, 7.02% Impervious, Inflow Depth = 2.78" for 100 yr event
 Inflow = 1.17 cfs @ 12.08 hrs, Volume= 0.082 af
 Outflow = 1.16 cfs @ 12.09 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.5 min
 Discarded = 0.04 cfs @ 12.09 hrs, Volume= 0.040 af
 Primary = 1.12 cfs @ 12.09 hrs, Volume= 0.041 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 197.56' @ 12.09 hrs Surf.Area= 754 sf Storage= 336 cf

Plug-Flow detention time= 45.3 min calculated for 0.081 af (100% of inflow)
 Center-of-Mass det. time= 45.3 min (891.0 - 845.7)

Volume	Invert	Avail.Storage	Storage Description
#1	197.00'	448 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
197.00	460	118.0	0	0	460
197.70	840	136.0	448	448	835

Device	Routing	Invert	Outlet Devices
#1	Primary	197.50'	2.0" x 2.0" Horiz. Orifice/Grate X 36.00 C= 0.600 Limited to weir flow at low heads
#2	Discarded	197.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.09 hrs HW=197.56' (Free Discharge)
 ↑2=Exfiltration (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=1.12 cfs @ 12.09 hrs HW=197.56' (Free Discharge)
 ↑1=Orifice/Grate (Weir Controls 1.12 cfs @ 0.79 fps)

Summary for Pond 14P: existing detention basin

Inflow Area = 1.441 ac, 10.65% Impervious, Inflow Depth = 0.73" for 100 yr event
 Inflow = 0.47 cfs @ 12.46 hrs, Volume= 0.088 af
 Outflow = 0.46 cfs @ 12.52 hrs, Volume= 0.088 af, Atten= 1%, Lag= 3.5 min
 Discarded = 0.46 cfs @ 12.52 hrs, Volume= 0.088 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

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Type III 24-hr 100 yr Rainfall=6.70"

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Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 208.04' @ 12.52 hrs Surf.Area= 2,024 sf Storage= 78 cf

Plug-Flow detention time=2.9 min calculated for 0.088 af (100% of inflow)
 Center-of-Mass det. time=2.9 min (947.1 - 944.2)

Volume	Invert	Avail.Storage	Storage Description			
#1	208.00'	42,696 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
208.00	1,882	211.0	0	0	1,882	
209.00	7,002	471.0	4,171	4,171	15,997	
213.00	12,526	578.0	38,524	42,696	25,172	

Device	Routing	Invert	Outlet Devices	
#1	Primary	208.42'	30.0" Round Culvert L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 208.42' / 207.92' S= 0.0100 '/ Cc= 0.900 n= 0.030 Corrugated metal, Flow Area= 4.91 sf	
#2	Discarded	208.00'	12.060 in/hr Exfiltration over Surface area	

Discarded OutFlow Max=0.57 cfs @ 12.52 hrs HW=208.04' (Free Discharge)
 ↳ **2=Exfiltration** (Exfiltration Controls 0.57 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=208.00' (Free Discharge)
 ↳ **1=Culvert** (Controls 0.00 cfs)

Summary for Pond LC 4: Leaching Chamber Bed #4

[79] Warning: Submerged Pond LC 4B Primary device # 2 INLET by 0.07'

Inflow Area = 1.007 ac, 47.31% Impervious, Inflow Depth = 2.47" for 100 yr event
 Inflow = 4.50 cfs @ 12.13 hrs, Volume= 0.207 af
 Outflow = 4.22 cfs @ 12.16 hrs, Volume= 0.207 af, Atten= 6%, Lag= 2.1 min
 Discarded = 0.11 cfs @ 11.45 hrs, Volume= 0.050 af
 Primary = 4.12 cfs @ 12.16 hrs, Volume= 0.157 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 202.97' @ 12.16 hrs Surf.Area= 0.013 ac Storage= 0.026 af

Plug-Flow detention time= 19.8 min calculated for 0.207 af (100% of inflow)
 Center-of-Mass det. time= 19.8 min (770.7 - 750.9)

Volume	Invert	Avail.Storage	Storage Description	
#1A	199.30'	0.014 af	16.75'W x 33.00'L x 3.71'H Field A 0.047 af Overall - 0.012 af Embedded = 0.035 af x 40.0% Voids	
#2A	199.80'	0.012 af	Cultec R-280HD x 12 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 3 rows	

0.026 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.30'	8.270 in/hr Exfiltration over Surface area
#2	Primary	200.90'	12.0" Round Culvert L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 200.90' / 198.80' S= 0.0350'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf
#3	Primary	201.50'	4.0" Round Culvert L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 201.50' / 199.80' S= 0.0340'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.11 cfs @ 11.45 hrs HW=199.34' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=4.11 cfs @ 12.16 hrs HW=202.96' (Free Discharge)

↳ **2=Culvert** (Inlet Controls 3.73 cfs @ 4.75 fps)

↳ **3=Culvert** (Inlet Controls 0.38 cfs @ 4.33 fps)

Summary for Pond LC 4B: Leaching Chamber Bed #4B

[79] Warning: Submerged Pond LC 4C Primary device # 2 INLET by 0.09'

Inflow Area =	1.007 ac, 47.31% Impervious, Inflow Depth = 3.34" for 100 yr event
Inflow =	4.77 cfs @ 12.11 hrs, Volume= 0.281 af
Outflow =	4.59 cfs @ 12.13 hrs, Volume= 0.281 af, Atten= 4%, Lag= 1.4 min
Discarded =	0.09 cfs @ 10.53 hrs, Volume= 0.073 af
Primary =	4.50 cfs @ 12.13 hrs, Volume= 0.207 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 204.49' @ 12.13 hrs Surf.Area= 0.011 ac Storage= 0.016 af

Plug-Flow detention time= 10.7 min calculated for 0.281 af (100% of inflow)
Center-of-Mass det. time= 10.7 min (796.0 - 785.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	202.00'	0.008 af	14.50"W x 33.50"L x 2.54"H Field A 0.028 af Overall - 0.008 af Embedded = 0.021 af x 40.0% Voids
#2A	202.50'	0.008 af	Cultec R-150XLHD x 12 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.016 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	202.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	202.90'	10.0" Round Culvert X 2.00 L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 202.90' / 202.00' S= 0.0450'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.55 sf

Discarded OutFlow Max=0.09 cfs @ 10.53 hrs HW=202.03' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=4.50 cfs @ 12.13 hrs HW=204.49' (Free Discharge)

↑**2=Culvert** (Inlet Controls 4.50 cfs @ 4.13 fps)

Summary for Pond LC 4C: Leaching Chamber Bed #4C

Inflow Area =	1.007 ac, 47.31% Impervious, Inflow Depth = 4.20" for 100 yr event
Inflow =	4.91 cfs @ 12.09 hrs, Volume= 0.353 af
Outflow =	4.82 cfs @ 12.11 hrs, Volume= 0.353 af, Atten= 2%, Lag= 1.0 min
Discarded =	0.05 cfs @ 8.89 hrs, Volume= 0.072 af
Primary =	4.77 cfs @ 12.11 hrs, Volume= 0.281 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 206.17' @ 12.11 hrs Surf.Area= 0.006 ac Storage= 0.011 af

Plug-Flow detention time= 16.0 min calculated for 0.353 af (100% of inflow)
Center-of-Mass det. time= 16.0 min (830.8 - 814.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	202.50'	0.007 af	7.92'W x 33.00'L x 3.71'H Field A 0.022 af Overall - 0.004 af Embedded = 0.018 af x 40.0% Voids
#2A	203.50'	0.004 af	Cultec R-280HD x 4 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 1 rows
		0.011 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	202.50'	8.270 in/hr Exfiltration over Surface area
#2	Primary	204.40'	8.0" Round Culvert X 3.00 L= 8.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 204.40' / 203.20' S= 0.1500'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.05 cfs @ 8.89 hrs HW=202.54' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=4.76 cfs @ 12.11 hrs HW=206.16' (Free Discharge)

↑**2=Culvert** (Inlet Controls 4.76 cfs @ 4.55 fps)

Summary for Pond LC-1: Leaching Chamber Bed #1

Inflow Area = 0.236 ac, 66.05% Impervious, Inflow Depth = 4.97" for 100 yr event
 Inflow = 1.34 cfs @ 12.09 hrs, Volume= 0.098 af
 Outflow = 0.07 cfs @ 10.89 hrs, Volume= 0.098 af, Atten= 95%, Lag= 0.0 min
 Discarded = 0.07 cfs @ 10.89 hrs, Volume= 0.098 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 195.06' @ 14.36 hrs Surf.Area= 0.028 ac Storage= 0.047 af

Plug-Flow detention time=270.2 min calculated for 0.098 af (100% of inflow)
 Center-of-Mass det. time=270.1 min (1,066.8 - 796.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	192.00'	0.029 af	14.50'W x 84.75'L x 3.29'H Field A 0.093 af Overall - 0.020 af Embedded = 0.073 af x 40.0% Voids
#2A	192.75'	0.020 af	Cultec R-150XLHD x 32 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.049 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	192.00'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 10.89 hrs HW=192.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Summary for Pond LC-2A(1): Leaching Chamber Bed #2A(1)

Inflow Area = 0.413 ac, 59.48% Impervious, Inflow Depth = 4.75" for 100 yr event
 Inflow = 2.08 cfs @ 12.12 hrs, Volume= 0.163 af
 Outflow = 1.69 cfs @ 12.18 hrs, Volume= 0.145 af, Atten= 19%, Lag= 4.1 min
 Discarded = 0.02 cfs @ 8.08 hrs, Volume= 0.032 af
 Primary = 1.67 cfs @ 12.18 hrs, Volume= 0.113 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 200.21' @ 12.18 hrs Surf.Area= 0.016 ac Storage= 0.038 af

Plug-Flow detention time= 130.9 min calculated for 0.145 af (89% of inflow)
 Center-of-Mass det. time= 78.0 min (882.3 - 804.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	196.00'	0.023 af	13.17'W x 54.50'L x 4.54'H Field A 0.075 af Overall - 0.017 af Embedded = 0.058 af x 40.0% Voids
#2A	197.00'	0.017 af	Cultec R-330XLHD x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

0.040 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	196.00'	1.020 in/hr Exfiltration over Surface area
#2	Primary	198.70'	6.0" Round Culvert X 2.00 L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 198.70' / 198.00' S= 0.0700'/' Cc= 0.900 n= 0.015 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.02 cfs @ 8.08 hrs HW=196.05' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.67 cfs @ 12.18 hrs HW=200.21' (Free Discharge)

↑2=Culvert (Inlet Controls 1.67 cfs @ 4.26 fps)

Summary for Pond LC-2B: Leaching Chamber Bed #2B

Inflow Area = 0.299 ac, 33.78% Impervious, Inflow Depth = 3.68" for 100 yr event
 Inflow = 1.29 cfs @ 12.09 hrs, Volume= 0.092 af
 Outflow = 0.03 cfs @ 10.50 hrs, Volume= 0.048 af, Atten= 98%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 10.50 hrs, Volume= 0.048 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 203.23' @ 17.92 hrs Surf.Area= 0.028 ac Storage= 0.061 af

Plug-Flow detention time= 475.9 min calculated for 0.048 af (52% of inflow)
 Center-of-Mass det. time= 361.5 min (1,187.6 - 826.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	199.00'	0.038 af	15.17'W x 79.50'L x 4.29'H Field A 0.119 af Overall - 0.024 af Embedded = 0.094 af x 40.0% Voids
#2A	200.00'	0.024 af	Cultec R-330XLHD x 20 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		0.062 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	199.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 10.50 hrs HW=199.04' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-3: Leaching Chamber Bed #3

Inflow Area = 0.230 ac, 64.54% Impervious, Inflow Depth = 4.97" for 100 yr event
 Inflow = 1.30 cfs @ 12.09 hrs, Volume= 0.095 af
 Outflow = 0.46 cfs @ 12.36 hrs, Volume= 0.095 af, Atten= 65%, Lag= 16.3 min
 Discarded = 0.15 cfs @ 11.61 hrs, Volume= 0.078 af
 Primary = 0.31 cfs @ 12.36 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 200.02' @ 12.36 hrs Surf.Area= 0.018 ac Storage= 0.023 af

Plug-Flow detention time=23.8 min calculated for 0.095 af (100% of inflow)
 Center-of-Mass det. time= 23.8 min (820.4 - 796.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	197.85'	0.014 af	12.25'W x 65.25'L x 2.54'H Field A 0.047 af Overall - 0.011 af Embedded = 0.035 af x 40.0% Voids
#2A	198.35'	0.011 af	Cultec R-150XLHD x 18 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 3 rows
		0.025 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.85'	8.270 in/hr Exfiltration over Surface area
#2	Primary	199.00'	4.0" Round Culvert L= 34.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 199.00' / 198.40' S= 0.0176 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.09 sf

Discarded OutFlow Max=0.15 cfs @ 11.61 hrs HW=197.88' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=0.31 cfs @ 12.36 hrs HW=200.02' (Free Discharge)

↑**2=Culvert** (Inlet Controls 0.31 cfs @ 3.51 fps)

Summary for Pond LC-5: Leaching Chamber Bed #5

Inflow Area = 0.287 ac, 28.02% Impervious, Inflow Depth = 3.47" for 100 yr event
 Inflow = 1.17 cfs @ 12.09 hrs, Volume= 0.083 af
 Outflow = 0.03 cfs @ 10.76 hrs, Volume= 0.049 af, Atten= 97%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 10.76 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.50' @ 17.51 hrs Surf.Area= 0.029 ac Storage= 0.053 af

Plug-Flow detention time=476.5 min calculated for 0.049 af (60% of inflow)
 Center-of-Mass det. time= 366.5 min (1,197.2 - 830.7)

OE-3012 Post Prelim 6.15.17

Type III 24-hr 100 yr Rainfall=6.70"

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Volume	Invert	Avail.Storage	Storage Description
#1A	213.50'	0.029 af	29.67'W x 42.50'L x 3.54'H Field A 0.103 af Overall - 0.031 af Embedded = 0.071 af x 40.0% Voids
#2A	214.00'	0.031 af	Cultec R-330XLHD x 25 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 5 rows
		0.060 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	213.50'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 10.76 hrs HW=213.54' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-5A: Leaching Chamber Bed #5A

Inflow Area = 0.411 ac, 44.91% Impervious, Inflow Depth = 4.10" for 100 yr event
 Inflow = 1.97 cfs @ 12.09 hrs, Volume= 0.140 af
 Outflow = 0.03 cfs @ 9.89 hrs, Volume= 0.058 af, Atten= 98%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 9.89 hrs, Volume= 0.058 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 212.95' @ 19.65 hrs Surf.Area= 0.033 ac Storage= 0.101 af

Plug-Flow detention time=469.9 min calculated for 0.058 af (42% of inflow)
 Center-of-Mass det. time= 349.7 min (1,166.6 - 816.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	208.00'	0.051 af	33.25'W x 42.70'L x 5.75'H Field A 0.187 af Overall - 0.060 af Embedded = 0.127 af x 40.0% Voids
#2A	208.75'	0.060 af	Cultec R-902HD x 40 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 4 Rows of 10 Chambers Cap Storage= +2.8 cf x 2 x 4 rows = 22.1 cf
		0.111 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.00'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 9.89 hrs HW=208.06' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond LC-6: Leaching Chamber Bed #6

Inflow Area = 0.391 ac, 56.26% Impervious, Inflow Depth = 4.10" for 100 yr event
 Inflow = 1.87 cfs @ 12.09 hrs, Volume= 0.133 af
 Outflow = 0.57 cfs @ 12.43 hrs, Volume= 0.133 af, Atten= 70%, Lag= 20.3 min
 Discarded = 0.21 cfs @ 11.64 hrs, Volume= 0.122 af
 Primary = 0.36 cfs @ 12.43 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 212.39' @ 12.43 hrs Surf.Area= 0.025 ac Storage= 0.039 af

Plug-Flow detention time=50.4 min calculated for 0.133 af (100% of inflow)
 Center-of-Mass det. time= 50.4 min (867.3 - 816.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	210.00'	0.021 af	16.08'W x 67.33'L x 3.21'H Field A 0.080 af Overall - 0.027 af Embedded = 0.053 af x 40.0% Voids
#2A	210.50'	0.027 af	Cultec R-280HD x 27 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 3 rows
		0.048 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	210.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	212.00'	8.0" Round Culvert L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 212.00' / 210.00' S= 0.0667'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.21 cfs @ 11.64 hrs HW=210.03' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Primary OutFlow Max=0.36 cfs @ 12.43 hrs HW=212.39' (Free Discharge)

↑**2=Culvert** (Inlet Controls 0.36 cfs @ 1.68 fps)

Summary for Pond LC-6(2): Leaching Chamber Bed #6(2)

Inflow Area = 0.391 ac, 56.26% Impervious, Inflow Depth = 0.36" for 100 yr event
 Inflow = 0.36 cfs @ 12.43 hrs, Volume= 0.012 af
 Outflow = 0.08 cfs @ 12.28 hrs, Volume= 0.012 af, Atten= 78%, Lag= 0.0 min
 Discarded = 0.08 cfs @ 12.28 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 209.76' @ 12.82 hrs Surf.Area= 0.010 ac Storage= 0.007 af

Plug-Flow detention time=36.1 min calculated for 0.012 af (100% of inflow)
 Center-of-Mass det. time= 36.1 min (788.8 - 752.6)

OE-3012 Post Prelim 6.15.17

Type III 24-hr 100 yr Rainfall=6.70"

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Volume	Invert	Avail.Storage	Storage Description
#1A	208.50'	0.008 af	16.50'W x 25.25'L x 2.54'H Field A 0.024 af Overall - 0.005 af Embedded = 0.019 af x 40.0% Voids
#2A	209.00'	0.005 af	Cultec R-150XLHD x 8 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 4 rows
		0.013 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	208.50'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.08 cfs @ 12.28 hrs HW=208.53' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Summary for Pond LC-6A: Leaching Chamber Bed #6A

Inflow Area = 0.243 ac, 66.13% Impervious, Inflow Depth = 4.31" for 100 yr event
 Inflow = 1.22 cfs @ 12.09 hrs, Volume= 0.087 af
 Outflow = 0.17 cfs @ 11.67 hrs, Volume= 0.087 af, Atten= 86%, Lag= 0.0 min
 Discarded = 0.17 cfs @ 11.67 hrs, Volume= 0.087 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.18' @ 12.63 hrs Surf.Area= 0.020 ac Storage= 0.027 af

Plug-Flow detention time=48.1 min calculated for 0.087 af (100% of inflow)
 Center-of-Mass det. time= 48.1 min (860.2 - 812.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	214.00'	0.021 af	14.17'W x 62.50'L x 3.54'H Field A 0.072 af Overall - 0.020 af Embedded = 0.052 af x 40.0% Voids
#2A	214.50'	0.020 af	Cultec R-330XLHD x 16 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		0.041 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	214.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.17 cfs @ 11.67 hrs HW=214.04' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Summary for Pond LC-7: Leaching Chamber Bed #7

Inflow Area = 0.822 ac, 41.73% Impervious, Inflow Depth = 3.07" for 100 yr event
 Inflow = 2.94 cfs @ 12.09 hrs, Volume= 0.210 af
 Outflow = 0.42 cfs @ 11.73 hrs, Volume= 0.210 af, Atten= 86%, Lag= 0.0 min
 Discarded = 0.42 cfs @ 11.73 hrs, Volume= 0.210 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.16' @ 12.69 hrs Surf.Area= 0.050 ac Storage= 0.064 af

Plug-Flow detention time=48.4 min calculated for 0.210 af (100% of inflow)
 Center-of-Mass det. time= 48.4 min (888.1 - 839.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	214.00'	0.037 af	39.25'W x 56.00'L x 2.54'H Field A 0.128 af Overall - 0.035 af Embedded = 0.093 af x 40.0% Voids
#2A	214.50'	0.035 af	Cultec R-150XLHD x 55 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 11 rows
		0.072 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	214.00'	8.270 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.42 cfs @ 11.73 hrs HW=214.03' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.42 cfs)

Summary for Pond LC2A(2): Leaching Chamber Bed #2A(2)

[79] Warning: Submerged Pond LC-2A(1) Primary device # 2 OUTLET by 0.54'

Inflow Area = 0.413 ac, 59.48% Impervious, Inflow Depth = 3.28" for 100 yr event
 Inflow = 1.67 cfs @ 12.18 hrs, Volume= 0.113 af
 Outflow = 0.04 cfs @ 11.94 hrs, Volume= 0.057 af, Atten= 98%, Lag= 0.0 min
 Discarded = 0.04 cfs @ 11.94 hrs, Volume= 0.057 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 198.54' @ 17.24 hrs Surf.Area= 0.037 ac Storage= 0.086 af

Plug-Flow detention time=524.2 min calculated for 0.057 af (50% of inflow)
 Center-of-Mass det. time= 440.5 min (1,257.5 - 817.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	194.50'	0.046 af	18.00'W x 89.50'L x 4.29'H Field A 0.159 af Overall - 0.044 af Embedded = 0.115 af x 40.0% Voids
#2A	195.25'	0.044 af	Cultec R-330XLHD x 36 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap

Row Length Adjustment= +1.50' x 7.45 sf x 3 rows

0.090 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	194.50'	1.020 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 11.94 hrs HW=194.56' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Summary for Pond LC4A: Leaching Chamber Bed #4A

Inflow Area = 0.308 ac, 62.97% Impervious, Inflow Depth = 4.75" for 100 yr event
 Inflow = 1.69 cfs @ 12.09 hrs, Volume= 0.122 af
 Outflow = 1.19 cfs @ 12.16 hrs, Volume= 0.122 af, Atten= 30%, Lag= 4.7 min
 Discarded = 0.16 cfs @ 11.57 hrs, Volume= 0.092 af
 Primary = 1.02 cfs @ 12.16 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.72' @ 12.16 hrs Surf.Area= 0.020 ac Storage= 0.022 af

Plug-Flow detention time=20.6 min calculated for 0.122 af (100% of inflow)
 Center-of-Mass det. time= 20.6 min (822.7 - 802.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	197.70'	0.016 af	15.25'W x 56.00'L x 2.54'H Field A 0.050 af Overall - 0.009 af Embedded = 0.040 af x 40.0% Voids
#2A	198.20'	0.009 af	Cultec R-150XLHD x 15 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 3 rows
			0.026 af Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	197.70'	8.270 in/hr Exfiltration over Surface area
#2	Primary	199.00'	6.0" Round Culvert X 2.00 L= 23.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 199.00' / 198.00' S= 0.0435'/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.16 cfs @ 11.57 hrs HW=197.73' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=1.02 cfs @ 12.16 hrs HW=199.72' (Free Discharge)

↑**2=Culvert** (Inlet Controls 1.02 cfs @ 2.61 fps)

Summary for Pond RG10: Rain Garden 10

Inflow Area = 0.193 ac, 27.46% Impervious, Inflow Depth = 3.47" for 100 yr event
 Inflow = 0.81 cfs @ 12.08 hrs, Volume= 0.056 af
 Outflow = 0.81 cfs @ 12.08 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.2 min
 Discarded = 0.02 cfs @ 12.08 hrs, Volume= 0.019 af
 Primary = 0.80 cfs @ 12.08 hrs, Volume= 0.037 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 199.85' @ 12.08 hrs Surf.Area= 293 sf Storage= 84 cf

Plug-Flow detention time=21.3 min calculated for 0.056 af (100% of inflow)
 Center-of-Mass det. time= 21.3 min (851.1 - 829.8)

Volume	Invert	Avail.Storage	Storage Description			
#1	199.50'	168 cf	Custom Stage Data (Irregular) listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
199.50	193	53.0	0	0	193	
200.10	379	72.0	168	168	386	

Device	Routing	Invert	Outlet Devices	
#1	Primary	199.80'	2.0" x 2.0" Horiz. Orifice/Grate X 36.00 C= 0.600 Limited to weir flow at low heads	
#2	Discarded	199.50'	2.410 in/hr Exfiltration over Surface area	

Discarded OutFlow Max=0.02 cfs @ 12.08 hrs HW=199.85' (Free Discharge)
 ↑ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.79 cfs @ 12.08 hrs HW=199.85' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.79 cfs @ 0.71 fps)



PDA-8

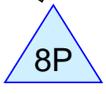


PDA-13



2R

Rockwood Road



8P

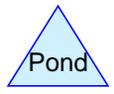
Flow to depression at
stone wall



Subcat



Reach



Pond



Link

Routing Diagram for OE-3012 Post Flow to PDA-8, PDA-12-13
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OE-3012 Post Flow to PDA-8, PDA-12-13

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.406	39	>75% Grass cover, Good, HSG A (on site) (8S)
0.294	39	>75% Grass cover, Good, HSG A(off site) (8S)
0.014	61	>75% Grass cover, Good, HSG B (9S)
0.126	61	>75% Grass cover, Good, HSG B (off site) (8S)
0.050	61	>75% Grass cover, Good, HSG B(on site) (8S)
0.076	98	Unconnected roofs, HSG B (deck,patio) (8S)
0.111	30	Woods, Good, HSG A (8S)
0.061	98	ex roofs (8S)
1.138	49	TOTAL AREA

OE-3012 Post Flow to PDA-8, PDA-12-13

Type III 24-hr 2 yr Rainfall=3.20"

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Summary for Subcatchment 8S: PDA-8

Runoff = 0.01 cfs @ 14.78 hrs, Volume= 0.007 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Adj	Description
4,852	30		Woods, Good, HSG A
* 12,812	39		>75% Grass cover, Good, HSG A(off site)
* 5,472	61		>75% Grass cover, Good, HSG B (off site)
* 17,678	39		>75% Grass cover, Good, HSG A (on site)
* 2,167	61		>75% Grass cover, Good, HSG B(on site)
* 3,305	98		Unconnected roofs, HSG B (deck,patio)
* 2,665	98		ex roofs
48,951	49	47	Weighted Average, UI Adjusted
42,981			87.80% Pervious Area
5,970			12.20% Impervious Area
3,305			55.36% Unconnected

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

Summary for Subcatchment 9S: PDA-13

Runoff = 0.00 cfs @ 12.12 hrs, Volume= 0.001 af, Depth= 0.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
602	61	>75% Grass cover, Good, HSG B
602		100.00% Pervious Area

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

Summary for Reach 2R: Rockwood Road

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

Inflow Area = 0.014 ac, 0.00% Impervious, Inflow Depth = 0.44" for 2 yr event
 Inflow = 0.00 cfs @ 12.12 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 12.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond 8P: Flow to depression at stone wall

Inflow Area = 1.124 ac, 12.20% Impervious, Inflow Depth = 0.07" for 2 yr event
 Inflow = 0.01 cfs @ 14.78 hrs, Volume= 0.007 af
 Outflow = 0.01 cfs @ 14.84 hrs, Volume= 0.007 af, Atten= 0%, Lag= 3.5 min
 Discarded = 0.01 cfs @ 14.84 hrs, Volume= 0.007 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 215.40' @ 14.84 hrs Surf.Area= 501 sf Storage= 2 cf

Plug-Flow detention time=3.2 min calculated for 0.007 af (100% of inflow)
 Center-of-Mass det. time= 3.2 min (1,063.8 - 1,060.6)

Volume	Invert	Avail.Storage	Storage Description			
#1	215.40'	2,082 cf	Custom Stage Data (Irregular) listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
215.40	494	95.0	0	0	494	
216.50	3,813	278.0	2,082	2,082	5,930	

Device	Routing	Invert	Outlet Devices
#1	Discarded	215.40'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 14.84 hrs HW=215.40' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Subcatchment 8S: PDA-8

Runoff = 0.21 cfs @ 12.30 hrs, Volume= 0.039 af, Depth= 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Adj	Description
4,852	30		Woods, Good, HSG A
* 12,812	39		>75% Grass cover, Good, HSG A(off site)
* 5,472	61		>75% Grass cover, Good, HSG B (off site)
* 17,678	39		>75% Grass cover, Good, HSG A (on site)
* 2,167	61		>75% Grass cover, Good, HSG B(on site)
* 3,305	98		Unconnected roofs, HSG B (deck,patio)
* 2,665	98		ex roofs
48,951	49	47	Weighted Average, UI Adjusted
42,981			87.80% Pervious Area
5,970			12.20% Impervious Area
3,305			55.36% Unconnected

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

Summary for Subcatchment 9S: PDA-13

Runoff = 0.02 cfs @ 12.10 hrs, Volume= 0.001 af, Depth= 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=4.65"

Area (sf)	CN	Description
602	61	>75% Grass cover, Good, HSG B
602		100.00% Pervious Area

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

Summary for Reach 2R: Rockwood Road

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

Inflow Area = 0.014 ac, 0.00% Impervious, Inflow Depth = 1.16" for 10 yr event
 Inflow = 0.02 cfs @ 12.10 hrs, Volume= 0.001 af
 Outflow = 0.02 cfs @ 12.10 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond 8P: Flow to depression at stone wall

Inflow Area = 1.124 ac, 12.20% Impervious, Inflow Depth = 0.42" for 10 yr event
 Inflow = 0.21 cfs @ 12.30 hrs, Volume= 0.039 af
 Outflow = 0.07 cfs @ 13.51 hrs, Volume= 0.039 af, Atten= 68%, Lag= 72.6 min
 Discarded = 0.07 cfs @ 13.51 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 215.75' @ 13.51 hrs Surf.Area= 1,214 sf Storage= 291 cf

Plug-Flow detention time=45.2 min calculated for 0.039 af (100% of inflow)
 Center-of-Mass det. time= 45.2 min (990.1 - 944.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	215.40'	2,082 cf	Custom Stage Data (Irregular) listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
215.40	494	95.0	0	0	494
216.50	3,813	278.0	2,082	2,082	5,930

Device	Routing	Invert	Outlet Devices
#1	Discarded	215.40'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 13.51 hrs HW=215.75' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Summary for Subcatchment 8S: PDA-8

Runoff = 0.57 cfs @ 12.13 hrs, Volume= 0.068 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Adj	Description
4,852	30		Woods, Good, HSG A
* 12,812	39		>75% Grass cover, Good, HSG A(off site)
* 5,472	61		>75% Grass cover, Good, HSG B (off site)
* 17,678	39		>75% Grass cover, Good, HSG A (on site)
* 2,167	61		>75% Grass cover, Good, HSG B(on site)
* 3,305	98		Unconnected roofs, HSG B (deck,patio)
* 2,665	98		ex roofs
48,951	49	47	Weighted Average, UI Adjusted
42,981			87.80% Pervious Area
5,970			12.20% Impervious Area
3,305			55.36% Unconnected

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

Summary for Subcatchment 9S: PDA-13

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af, Depth= 1.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=5.50"

Area (sf)	CN	Description
602	61	>75% Grass cover, Good, HSG B
602		100.00% Pervious Area

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

Summary for Reach 2R: Rockwood Road

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

Inflow Area = 0.014 ac, 0.00% Impervious, Inflow Depth = 1.68" for 25 yr event
 Inflow = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af
 Outflow = 0.03 cfs @ 12.10 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond 8P: Flow to depression at stone wall

Inflow Area = 1.124 ac, 12.20% Impervious, Inflow Depth = 0.73" for 25 yr event
 Inflow = 0.57 cfs @ 12.13 hrs, Volume= 0.068 af
 Outflow = 0.11 cfs @ 13.45 hrs, Volume= 0.068 af, Atten= 80%, Lag= 79.6 min
 Discarded = 0.11 cfs @ 13.45 hrs, Volume= 0.068 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.03' @ 13.45 hrs Surf.Area= 2,008 sf Storage= 733 cf

Plug-Flow detention time=79.2 min calculated for 0.068 af (100% of inflow)
 Center-of-Mass det. time= 79.2 min (997.3 - 918.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	215.40'	2,082 cf	Custom Stage Data (Irregular) listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
215.40	494	95.0	0	0	494
216.50	3,813	278.0	2,082	2,082	5,930

Device	Routing	Invert	Outlet Devices
#1	Discarded	215.40'	2.410 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.11 cfs @ 13.45 hrs HW=216.03' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.11 cfs)

OE-3012 Post Flow to PDA-8, PDA-12-13

Type III 24-hr 100 yr Rainfall=6.70"

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Summary for Subcatchment 8S: PDA-8

Runoff = 1.29 cfs @ 12.11 hrs, Volume= 0.118 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Adj	Description
4,852	30		Woods, Good, HSG A
* 12,812	39		>75% Grass cover, Good, HSG A(off site)
* 5,472	61		>75% Grass cover, Good, HSG B (off site)
* 17,678	39		>75% Grass cover, Good, HSG A (on site)
* 2,167	61		>75% Grass cover, Good, HSG B(on site)
* 3,305	98		Unconnected roofs, HSG B (deck,patio)
* 2,665	98		ex roofs
48,951	49	47	Weighted Average, UI Adjusted
42,981			87.80% Pervious Area
5,970			12.20% Impervious Area
3,305			55.36% Unconnected

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

Summary for Subcatchment 9S: PDA-13

Runoff = 0.04 cfs @ 12.09 hrs, Volume= 0.003 af, Depth= 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
602	61	>75% Grass cover, Good, HSG B
602		100.00% Pervious Area

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

Summary for Reach 2R: Rockwood Road

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

Inflow Area = 0.014 ac, 0.00% Impervious, Inflow Depth = 2.49" for 100 yr event
 Inflow = 0.04 cfs @ 12.09 hrs, Volume= 0.003 af
 Outflow = 0.04 cfs @ 12.09 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Summary for Pond 8P: Flow to depression at stone wall

Inflow Area = 1.124 ac, 12.20% Impervious, Inflow Depth = 1.26" for 100 yr event
 Inflow = 1.29 cfs @ 12.11 hrs, Volume= 0.118 af
 Outflow = 0.18 cfs @ 13.44 hrs, Volume= 0.118 af, Atten= 86%, Lag= 79.7 min
 Discarded = 0.18 cfs @ 13.44 hrs, Volume= 0.118 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 216.37' @ 13.44 hrs Surf.Area= 3,258 sf Storage= 1,623 cf

Plug-Flow detention time= 116.5 min calculated for 0.118 af (100% of inflow)
 Center-of-Mass det. time= 116.5 min (1,011.9 - 895.4)

Volume	Invert	Avail.Storage	Storage Description			
#1	215.40'	2,082 cf	Custom Stage Data (Irregular) listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
215.40	494	95.0	0	0	494	
216.50	3,813	278.0	2,082	2,082	5,930	

Device	Routing	Invert	Outlet Devices
#1	Discarded	215.40'	2.410 in/hr Exfiltration over Surface area

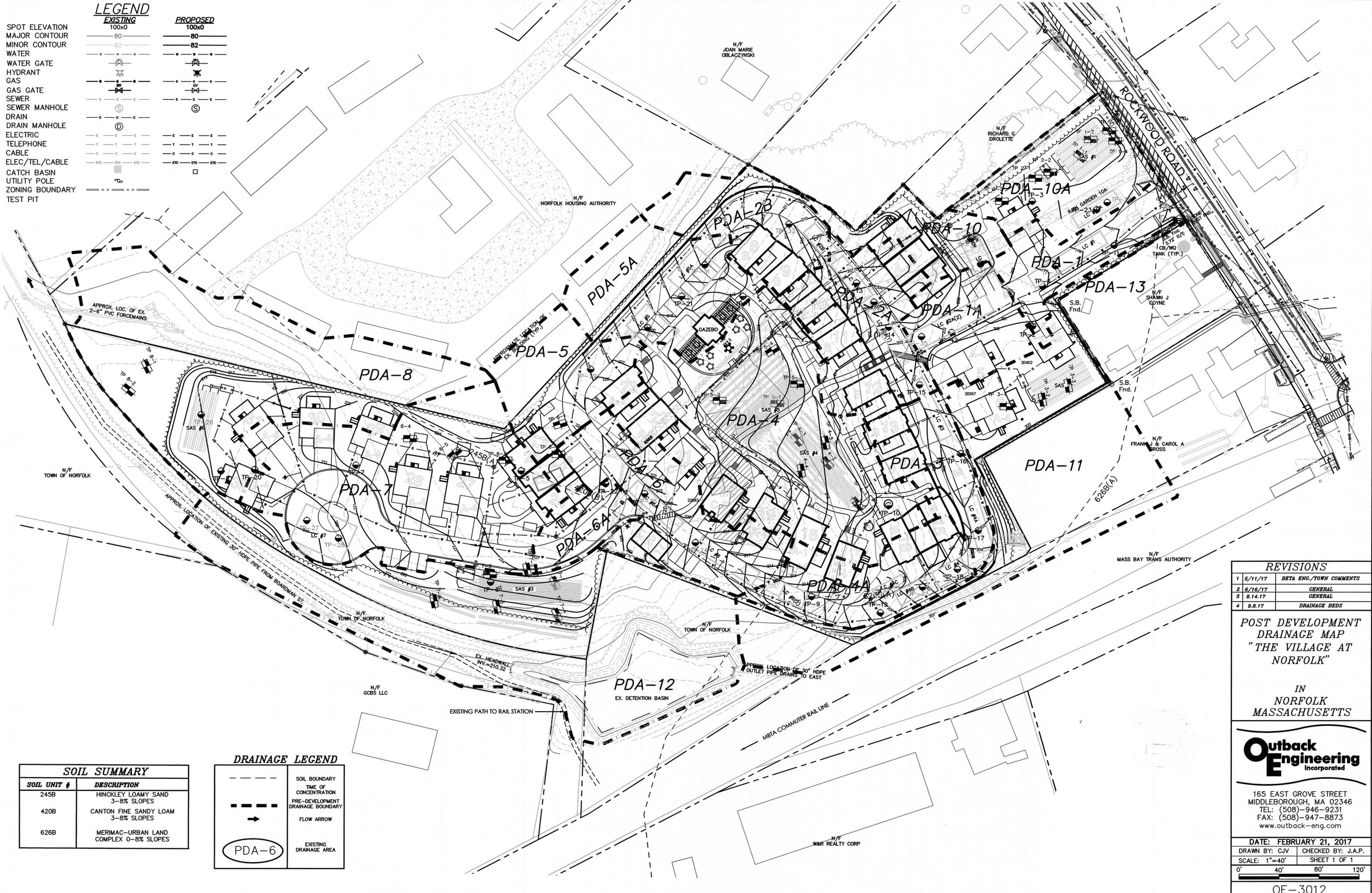
Discarded OutFlow Max=0.18 cfs @ 13.44 hrs HW=216.37' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.18 cfs)

Appendix C
POST-DEVELOPMENT DRAINAGE MAP
Based on Site Plans, revised 9/8/17

LEGEND

	EXISTING 100x0	PROPOSED 100x0
SPOT ELEVATION	80	80
MAJOR CONTOUR	82	82
MINOR CONTOUR	82	82
WATER	W	W
WATER GATE	W	W
HYDRANT	H	H
GAS	G	G
GAS GATE	G	G
SEWER	S	S
SEWER MANHOLE	S	S
DRAIN	D	D
DRAIN MANHOLE	D	D
ELECTRIC	E	E
TELEPHONE	T	T
CABLE	C	C
ELEC/TEL/CABLE	ETC	ETC
CATCH BASIN	CB	CB
UTILITY POLE	U	U
ZONING BOUNDARY	Z	Z
TEST PIT	TP	TP



SOIL SUMMARY

SOIL UNIT #	DESCRIPTION
245B	HINCKLEY LOAMY SAND 3-8% SLOPES
420B	CANTON FINE SANDY LOAM 3-8% SLOPES
626B	MERIMAC-URBAN LAND COMPLEX 0-8% SLOPES

DRAINAGE LEGEND

	SOIL BOUNDARY
	TIME OF CONCENTRATION PRE-DEVELOPMENT DRAINAGE BOUNDARY
	FLOW ARROW
	EXISTING DRAINAGE AREA

REVISIONS

1	5/11/17	BETA ENG./TOWN COMMENTS
2	6/16/17	GENERAL
3	8.14.17	GENERAL
4	9.8.17	DRAINAGE BEDS

POST DEVELOPMENT
DRAINAGE MAP
"THE VILLAGE AT
NORFOLK"

IN
NORFOLK
MASSACHUSETTS



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DATE: FEBRUARY 21, 2017

DRAWN BY: CJV	CHECKED BY: J.A.P.
SCALE: 1"=40'	SHEET 1 OF 1

0' 40' 80' 120'

OE-3012