

STORMWATER MANAGEMENT REPORT APPENDIX

For:

PROPOSED LIGHT MANUFACTURING

296 Flanders Road

East Lyme, Connecticut

Prepared for:

296 Flanders, LLC

Issued: June 17, 2024

Last revised:



PREPARED BY

BL Companies

100 Constitution Plaza

10th Floor

Hartford, CT 06103

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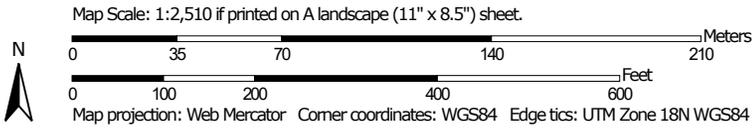
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APPENDIX A

FIGURES

Custom Soil Resource Report Soil Map



Point precipitation frequency estimates (inches)

NOAA Atlas 14 Volume 10 Version 3

Data type: Precipitation depth

Time series type: Partial duration

Project area: Northeastern States

Location n: Connecticut USA

Station Name: -

Latitude: 41.3623 Degree

Longitude: -72.2096 Degree

Elevation (USGS): 57 ft

PRECIPITATION FREQUENCY ESTIMATES

by duration	1	2	5	10	25	50	100	200	500	1000
5-min:	0.337	0.403	0.512	0.602	0.726	0.819	0.917	1.03	1.19	1.33
10-min:	0.478	0.572	0.726	0.853	1.03	1.16	1.3	1.46	1.69	1.88
15-min:	0.562	0.672	0.852	1	1.21	1.36	1.53	1.72	1.99	2.21
30-min:	0.793	0.949	1.2	1.41	1.7	1.92	2.15	2.42	2.8	3.11
60-min:	1.02	1.22	1.55	1.83	2.2	2.48	2.78	3.12	3.61	4.01
2-hr:	1.34	1.61	2.04	2.4	2.89	3.26	3.65	4.1	4.78	5.34
3-hr:	1.56	1.87	2.37	2.78	3.35	3.78	4.23	4.76	5.55	6.21
6-hr:	1.98	2.37	3	3.52	4.23	4.76	5.33	6	6.99	7.82
12-hr:	2.46	2.93	3.7	4.33	5.21	5.87	6.56	7.37	8.56	9.56
24-hr:	2.88	3.45	4.38	5.16	6.22	7.01	7.86	8.86	10.3	11.6
2-day:	3.22	3.9	5.01	5.93	7.2	8.14	9.15	10.4	12.3	13.9
3-day:	3.49	4.22	5.42	6.42	7.78	8.8	9.9	11.2	13.3	15
4-day:	3.75	4.51	5.77	6.81	8.24	9.3	10.5	11.8	14	15.8
7-day:	4.47	5.3	6.66	7.78	9.34	10.5	11.7	13.2	15.4	17.3
10-day:	5.18	6.05	7.46	8.64	10.3	11.5	12.8	14.2	16.4	18.2
20-day:	7.36	8.28	9.8	11.1	12.8	14.1	15.5	16.9	18.9	20.4
30-day:	9.17	10.1	11.7	13	14.9	16.3	17.6	19	20.8	22.2
45-day:	11.4	12.4	14.1	15.5	17.4	18.9	20.4	21.7	23.3	24.4
60-day:	13.3	14.4	16.1	17.6	19.6	21.2	22.7	24	25.5	26.4

Date/time (GMT): Tue Mar 12 19:34:58 2024

pyRunTime: 0.00765681266784668

Point precipitation frequency estimates (inches/hour)

NOAA Atlas 14 Volume 10 Version 3

Data type: Precipitation intensity

Time series type: Partial duration

Project area: Northeastern States

Location n: Connecticut USA

Station Name: -

Latitude: 41.3623 Degree

Longitude: -72.2096 Degree

Elevation (USGS): 57 ft

PRECIPITATION FREQUENCY ESTIMATES

by duration	1	2	5	10	25	50	100	200	500	1000
5-min:	4.04	4.84	6.14	7.22	8.71	9.83	11	12.3	14.3	15.9
10-min:	2.87	3.43	4.36	5.12	6.17	6.95	7.79	8.74	10.1	11.3
15-min:	2.25	2.69	3.41	4.01	4.84	5.46	6.11	6.86	7.95	8.85
30-min:	1.59	1.9	2.41	2.83	3.41	3.85	4.31	4.83	5.59	6.22
60-min:	1.02	1.22	1.55	1.83	2.2	2.48	2.78	3.12	3.61	4.01
2-hr:	0.672	0.804	1.02	1.2	1.45	1.63	1.82	2.05	2.39	2.67
3-hr:	0.52	0.622	0.788	0.926	1.12	1.26	1.41	1.59	1.85	2.07
6-hr:	0.331	0.396	0.5	0.587	0.706	0.796	0.891	1	1.17	1.31
12-hr:	0.204	0.243	0.307	0.36	0.433	0.487	0.545	0.612	0.711	0.794
24-hr:	0.12	0.144	0.183	0.215	0.259	0.292	0.328	0.369	0.431	0.483
2-day:	0.067	0.081	0.104	0.124	0.15	0.169	0.191	0.216	0.255	0.289
3-day:	0.048	0.059	0.075	0.089	0.108	0.122	0.137	0.156	0.184	0.209
4-day:	0.039	0.047	0.06	0.071	0.086	0.097	0.109	0.123	0.145	0.164
7-day:	0.027	0.032	0.04	0.046	0.056	0.062	0.07	0.079	0.092	0.103
10-day:	0.022	0.025	0.031	0.036	0.043	0.048	0.053	0.059	0.068	0.076
20-day:	0.015	0.017	0.02	0.023	0.027	0.029	0.032	0.035	0.039	0.043
30-day:	0.013	0.014	0.016	0.018	0.021	0.023	0.024	0.026	0.029	0.031
45-day:	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.02	0.022	0.023
60-day:	0.009	0.01	0.011	0.012	0.014	0.015	0.016	0.017	0.018	0.018

Date/time (GMT): Tue Mar 12 19:37:09 2024

pyRunTime: 0.007648944854736328

Natural Diversity Data Base Areas

EAST LYME, CT

June 2024

-  State and Federal Listed Species
-  Critical Habitat
-  Town Boundary

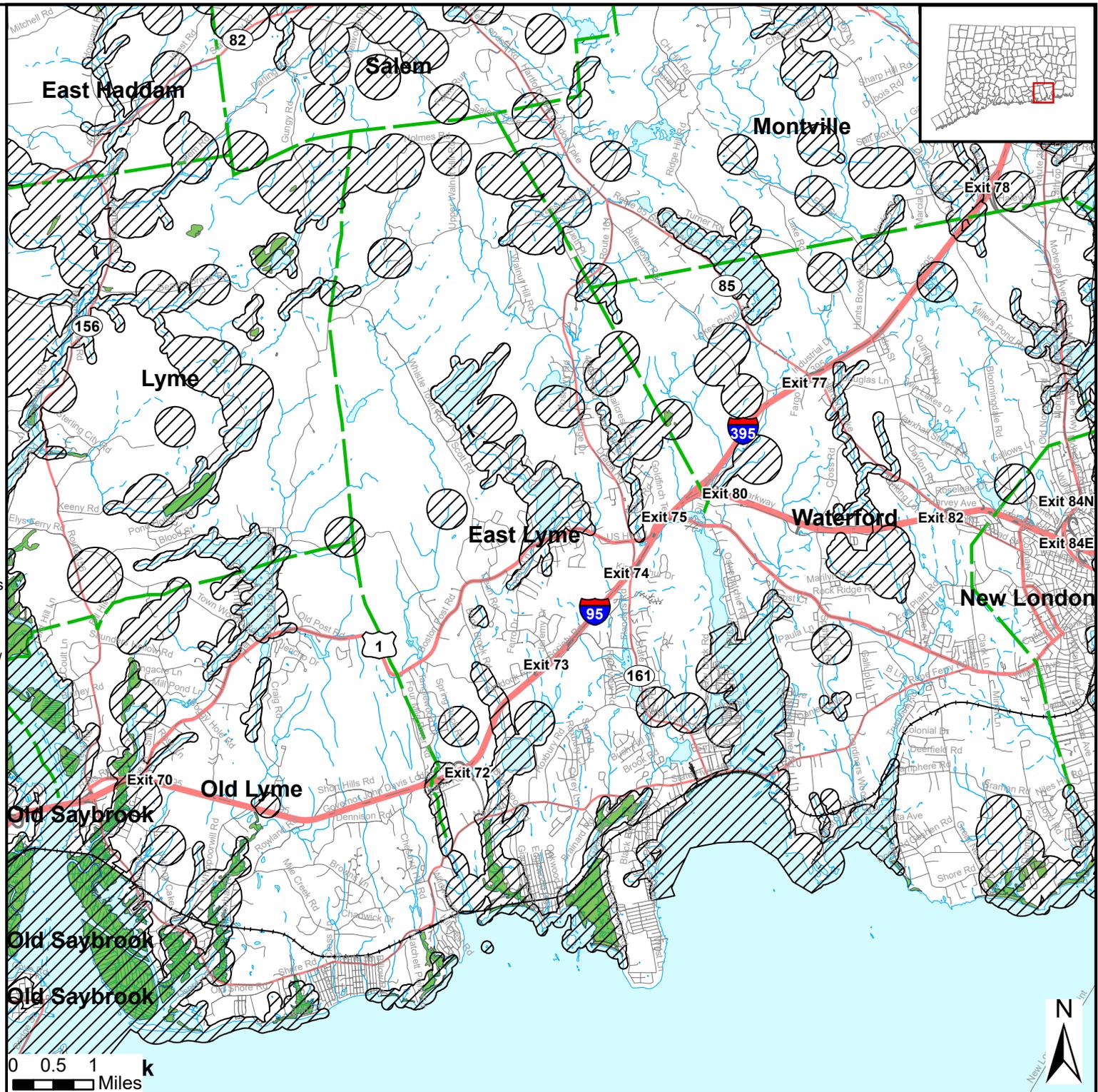
NOTE: This map shows known locations of State and Federal Listed Species and Critical Habitats. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDDB) from a variety of data sources. Exact locations of species have been buffered to produce the generalized locations.

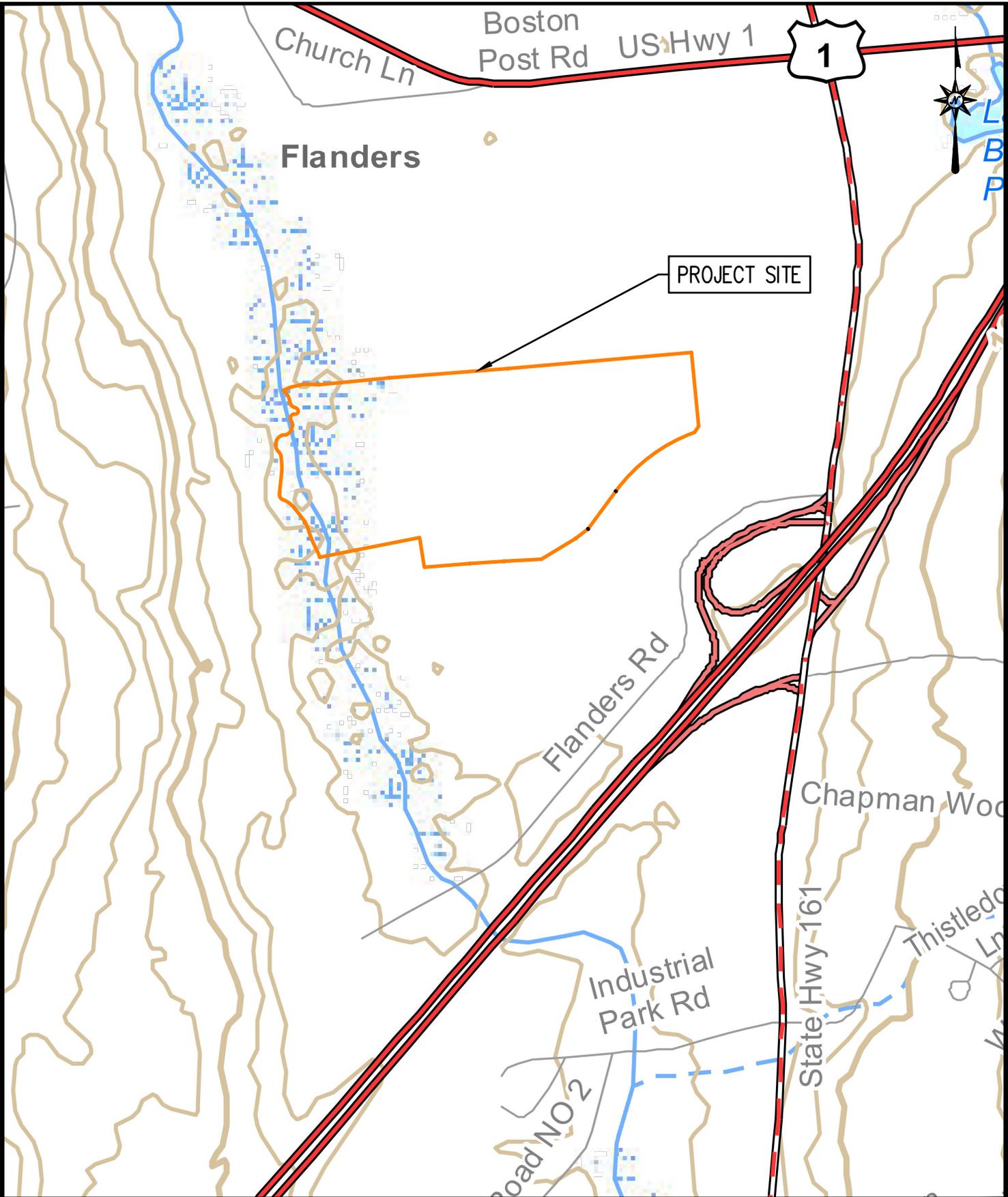
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a hatched area there may be a potential conflict with a listed species. For more information, use DEEP ezFile <https://filings.deep.ct.gov/DEEPPortal/> to submit a Request for Natural Diversity Data Base State Listed Species Review or Site Assessment. More detailed instructions are provided along with the request form on our website.

<https://portal.ct.gov/deep-nddbrequest>

Use the CTECO Interactive Map Viewers at <http://cteco.uconn.edu> to more precisely search for and locate a site and to view aerial imagery with NDDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St, Hartford, CT 06106
email: deep.nddbrequest@ct.gov
Phone: (860) 424-3011





6/14/2024, TBAGAW, G:\JOBS23\22\2302349\DWG\LOC2302349-01.DWG:FIGURE 1 8.5X11 2000SC.



Architecture
Engineering
Environmental
Land Surveying

**PROPOSED LIGHT
MANUFACTURING**
296 FLANDERS ROAD
EAST LYME, CONNECTICUT

Designed	T.L.B.
Drawn	T.L.B.
Reviewed	R.M.R.
Scale	1"=500'
Project No.	2302349
Date	06/07/2024
CAD File:	
	LOC2302349-01

FIGURE 1
USGS LOCATION MAP



BOSTON POST ROAD

FLANDERS ROAD

PROJECT SITE

INTERSTATE ROUTE 95

6/14/2024, TBAGAW, G:\JOBS23\22\2302349\DWG\LOC2302349-01.DWG:FIGURE 2 8.5X11 500SC



Architecture
Engineering
Environmental
Land Surveying

**PROPOSED LIGHT
MANUFACTURING**
296 FLANDERS ROAD
EAST LYME, CONNECTICUT

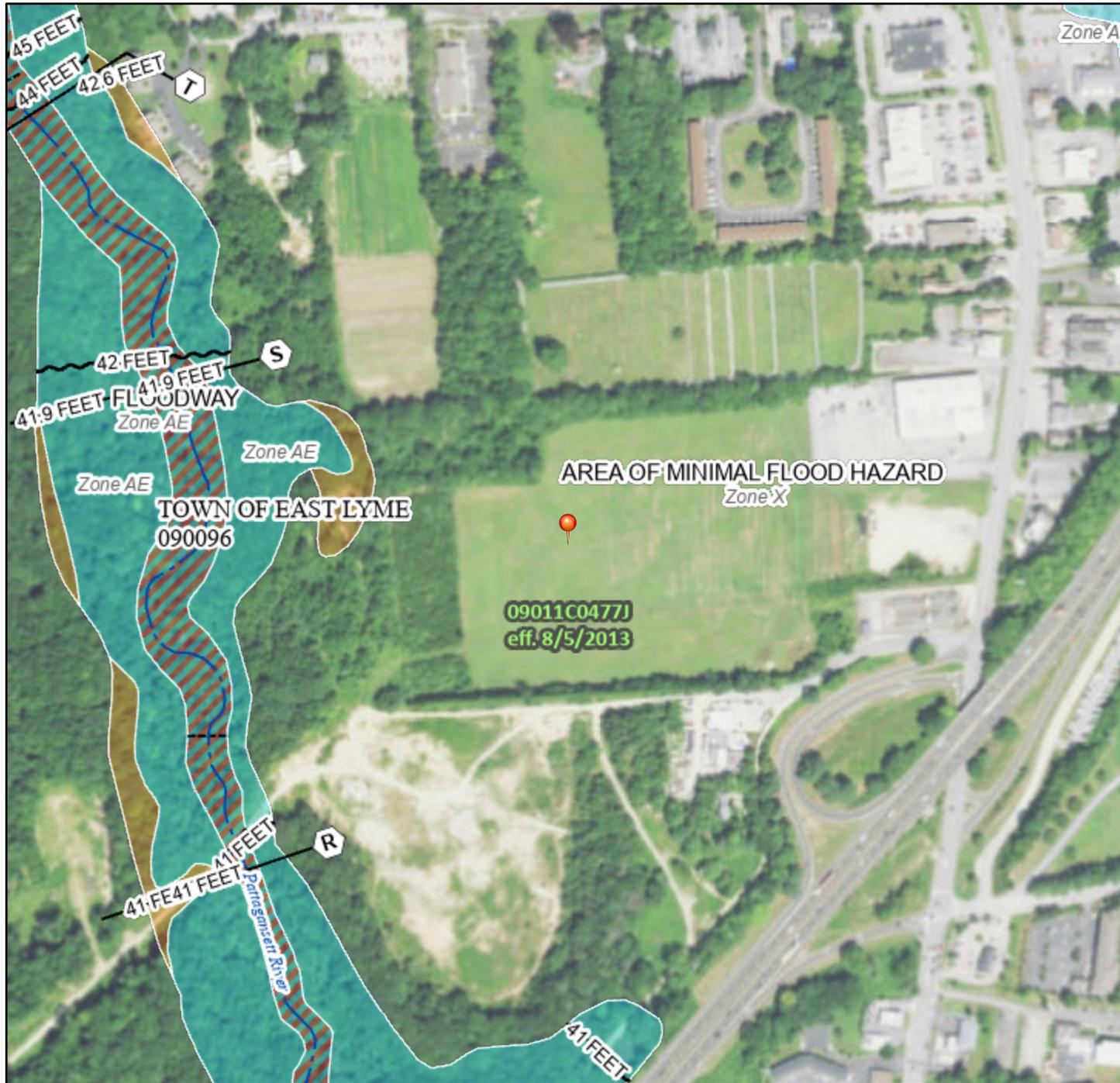
Designed T.L.B.
Drawn T.L.B.
Reviewed R.M.R.
Scale 1"=500'
Project No. 2302349
Date 06/07/2024
CAD File:
LOC2302349-01

FIGURE 2
AERIAL LOCATION MAP

National Flood Hazard Layer FIRMette



72°13'7"W 41°21'57"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation 17.5 Coastal Transect
MAP PANELS		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/11/2024 at 7:54 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



1:6,000

72°12'30"W 41°21'30"N

APPENDIX B

DRAINAGE AREA MAPS



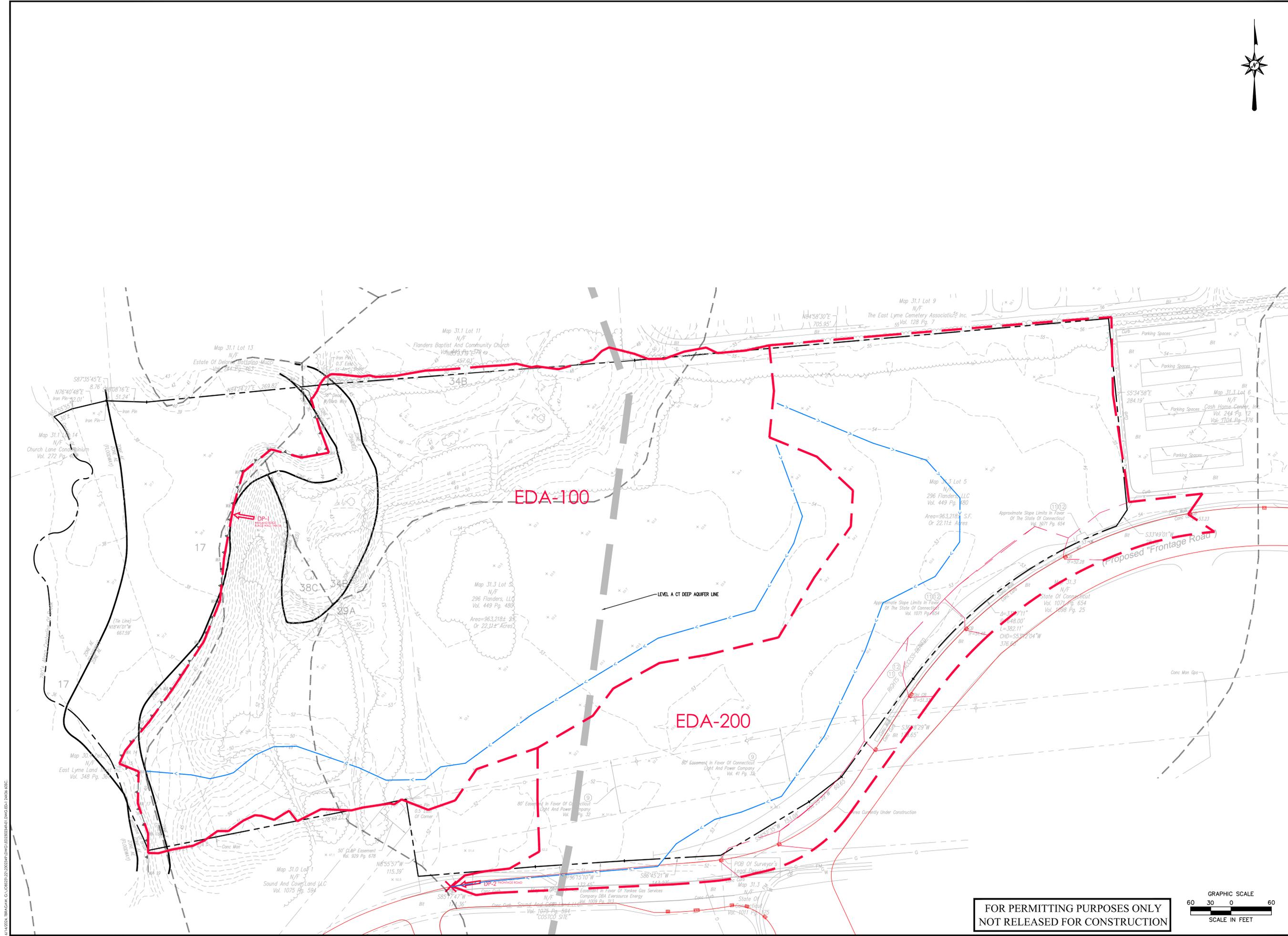
PROPOSED LIGHT MANUFACTURING
296 FLANDERS ROAD
EAST LYME, CONNECTICUT

REVISIONS	
No.	Date

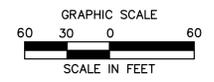
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Drawn	T.L.B.
Reviewed	R.M.R.
Scale	1"=60'
Project No.	2302349
Date	06/17/2024
CAD File:	ED2302349-01

**EXISTING
CONDITIONS
HYDROLOGY
MAP**

Sheet No. **ED-1**



**FOR PERMITTING PURPOSES ONLY
NOT RELEASED FOR CONSTRUCTION**



6/14/2024 10:48:40 AM C:\Users\jpd\OneDrive\Documents\2302349\ED1\ED1.dwg (ED-1) 24x36 40x60

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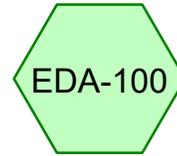
APPENDIX C

PRE-DEVELOPMENT HYDROLOGIC ANALYSIS



DP-1

Wetlands WA2 - WA18



EDA-100

EDA-100



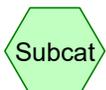
DP-2

Frontage Road



EDA-200

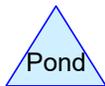
EDA-200



Subcat



Reach



Pond



Link

Routing Diagram for C-DAT-2302349-EX HYDRO

Prepared by BL Companies, Printed 6/11/2024

HydroCAD® 10.20-5a s/n 01334 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment EDA-100: EDA-100

Runoff = 0.16 cfs @ 14.31 hrs, Volume= 5,614 cf, Depth= 0.14"
 Routed to Link DP-1 : Wetlands WA2 - WA18

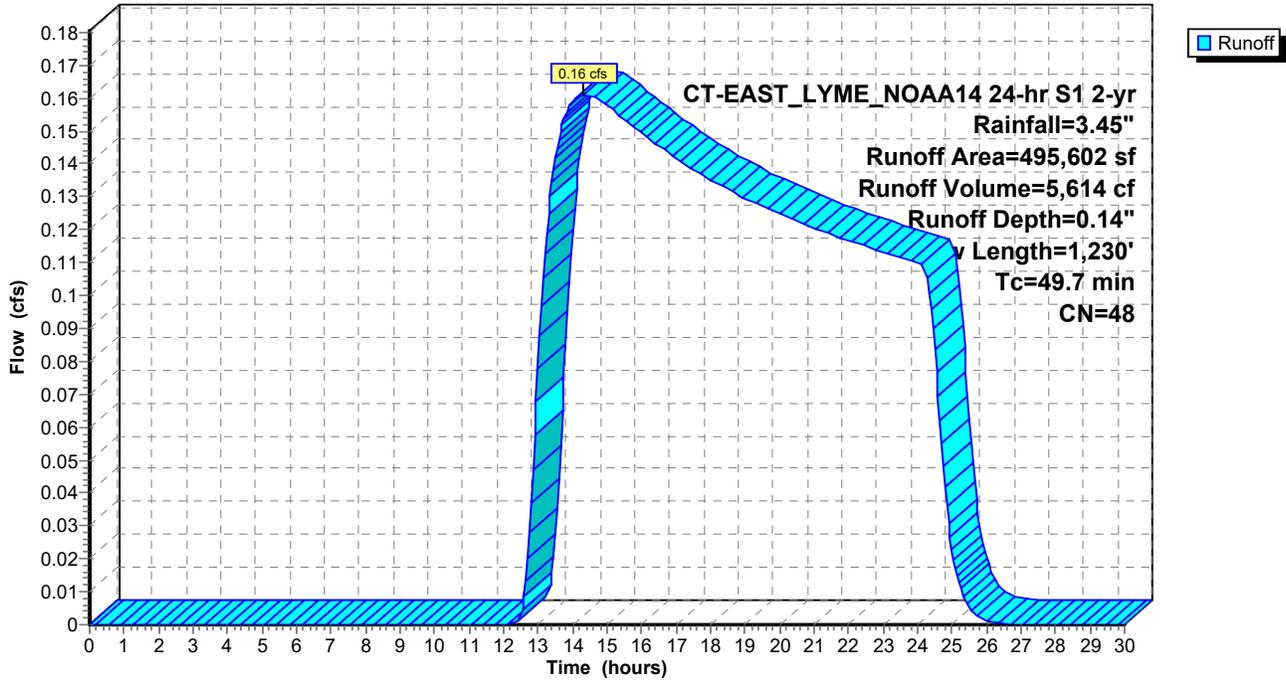
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
155,482	30	Woods, Good, HSG A
219	39	Pasture/grassland/range, Good, HSG A
67,565	39	>75% Grass cover, Good, HSG A
51,857	58	Woods/grass comb., Good, HSG B
212,761	61	Pasture/grassland/range, Good, HSG B
7,718	61	>75% Grass cover, Good, HSG B
495,602	48	Weighted Average
495,602		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
26.4	785	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
7.3	385	0.0310	0.88		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
49.7	1,230	Total			

Subcatchment EDA-100: EDA-100

Hydrograph



Summary for Subcatchment EDA-200: EDA-200

Runoff = 1.68 cfs @ 13.10 hrs, Volume= 21,222 cf, Depth= 0.68"

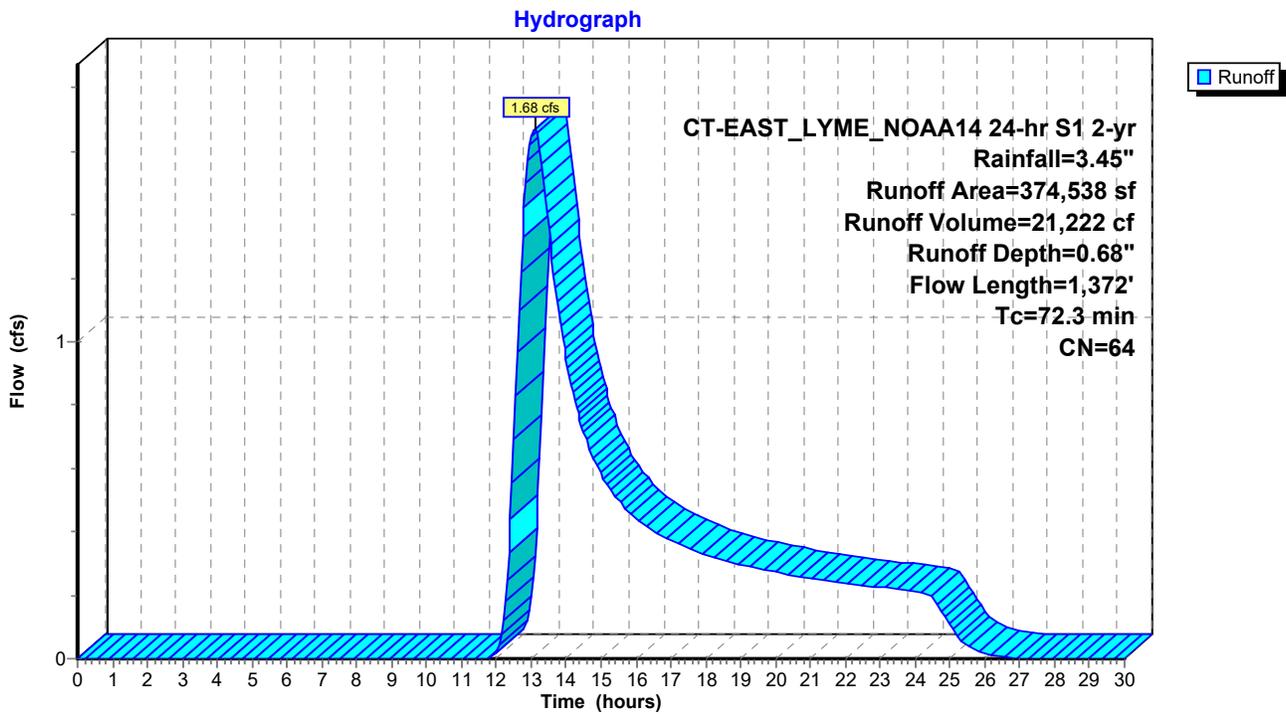
Routed to Link DP-2 : Frontage Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
25,715	55	Woods, Good, HSG B
292,444	61	Pasture/grassland/range, Good, HSG B
19,506	61	>75% Grass cover, Good, HSG B
36,873	98	Paved parking, HSG B
374,538	64	Weighted Average
337,665		90.16% Pervious Area
36,873		9.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
52.2	980	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.2	12	0.0300	1.21		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
1.8	310	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
72.3	1,372	Total			

Subcatchment EDA-200: EDA-200



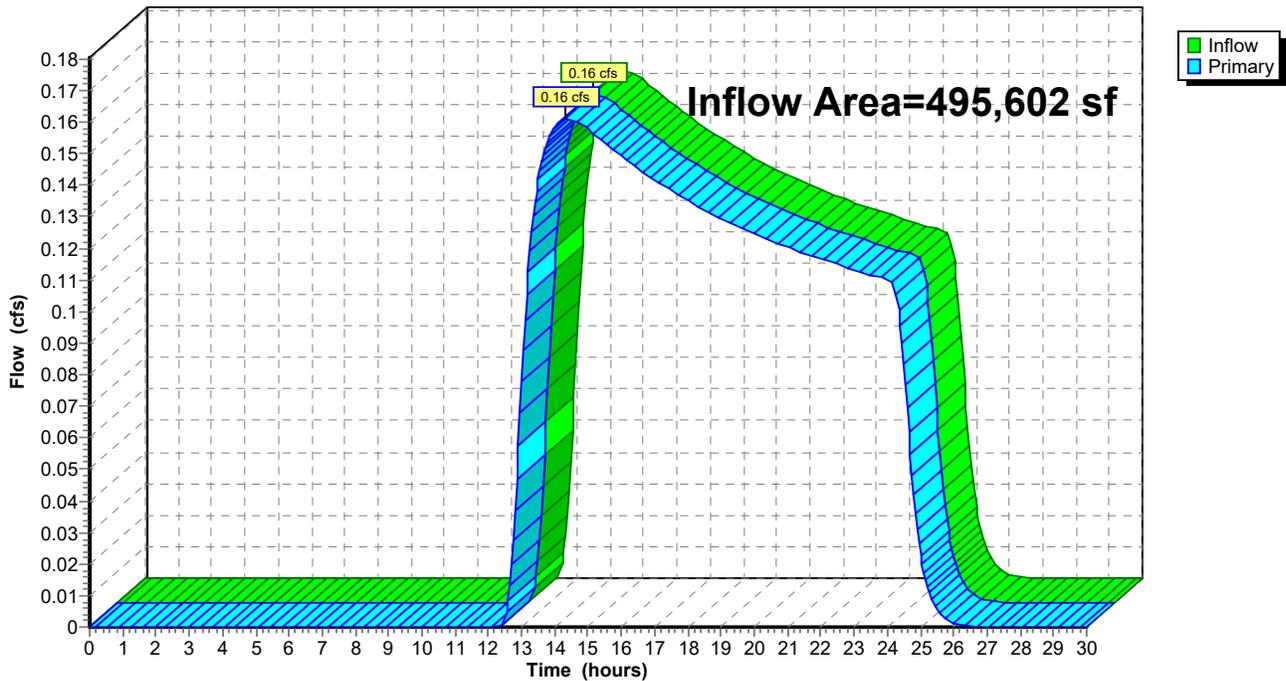
Summary for Link DP-1: Wetlands WA2 - WA18

Inflow Area = 495,602 sf, 0.00% Impervious, Inflow Depth = 0.14" for 2-yr event
Inflow = 0.16 cfs @ 14.31 hrs, Volume= 5,614 cf
Primary = 0.16 cfs @ 14.31 hrs, Volume= 5,614 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA18

Hydrograph

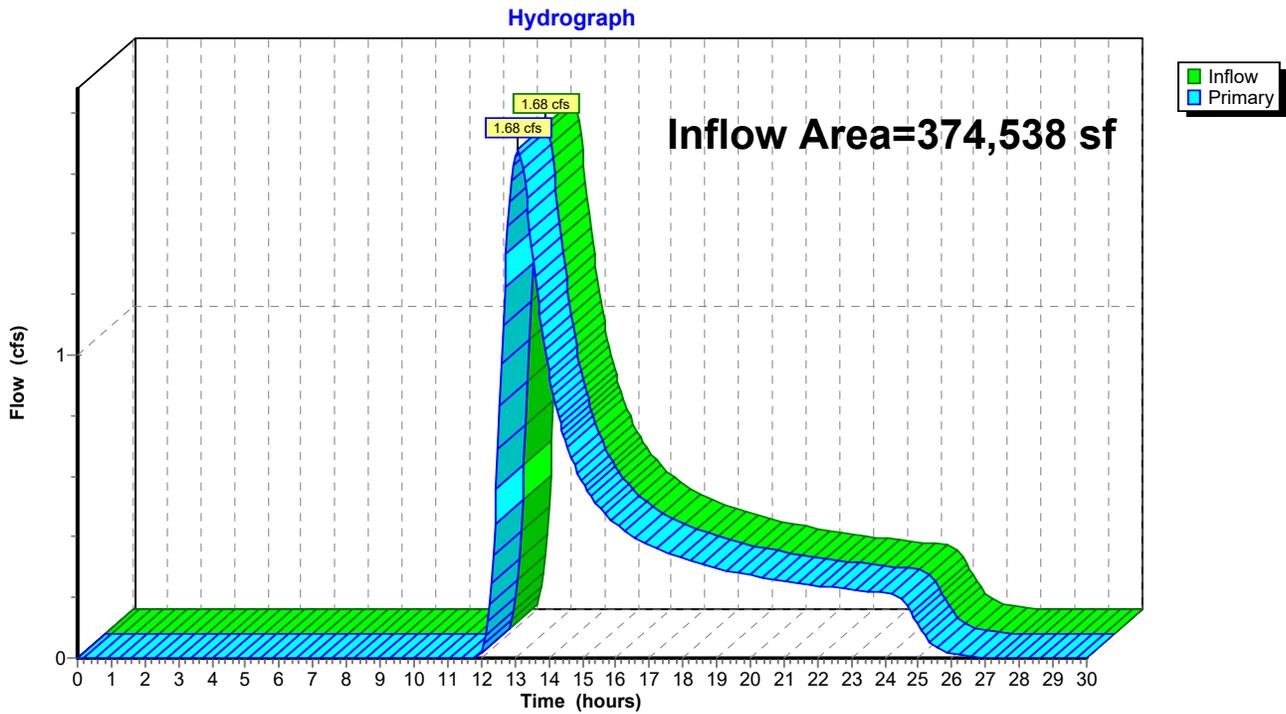


Summary for Link DP-2: Frontage Road

Inflow Area = 374,538 sf, 9.84% Impervious, Inflow Depth = 0.68" for 2-yr event
Inflow = 1.68 cfs @ 13.10 hrs, Volume= 21,222 cf
Primary = 1.68 cfs @ 13.10 hrs, Volume= 21,222 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-2: Frontage Road



Summary for Subcatchment EDA-100: EDA-100

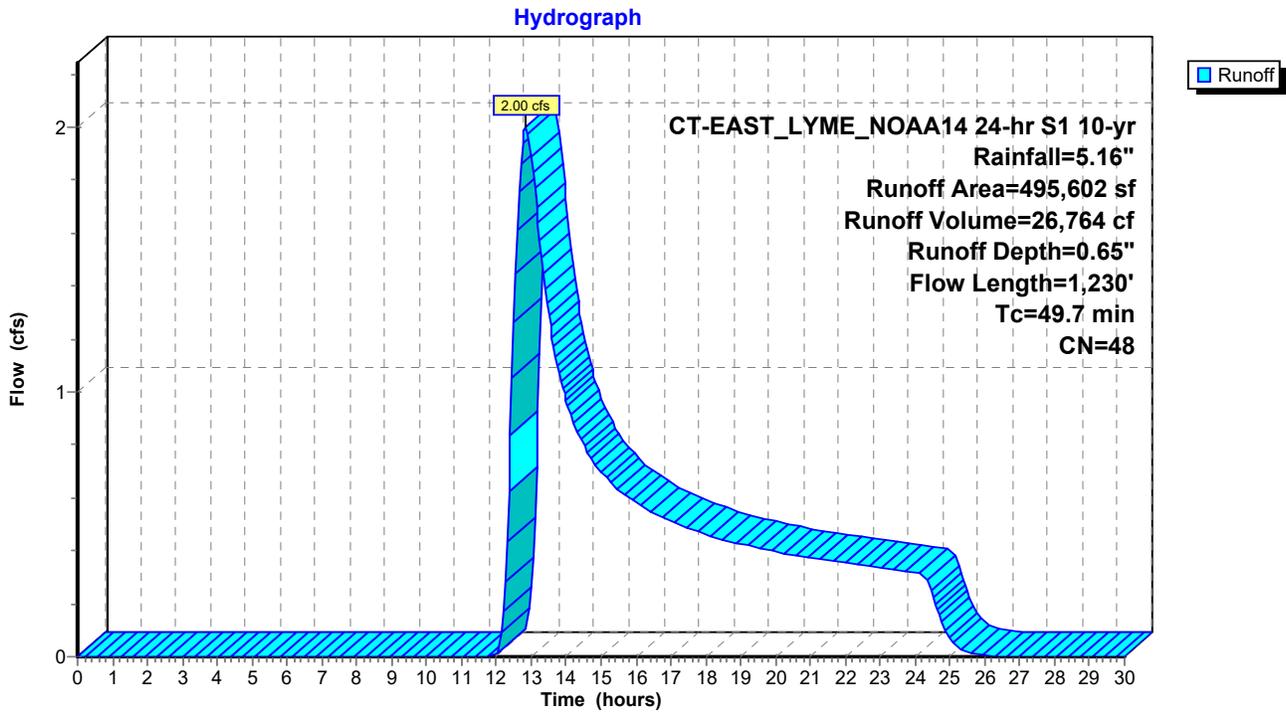
Runoff = 2.00 cfs @ 12.85 hrs, Volume= 26,764 cf, Depth= 0.65"
 Routed to Link DP-1 : Wetlands WA2 - WA18

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
155,482	30	Woods, Good, HSG A
219	39	Pasture/grassland/range, Good, HSG A
67,565	39	>75% Grass cover, Good, HSG A
51,857	58	Woods/grass comb., Good, HSG B
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495,602	48	Weighted Average
495,602		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
26.4	785	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
7.3	385	0.0310	0.88		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
49.7	1,230	Total			

Subcatchment EDA-100: EDA-100



Summary for Subcatchment EDA-200: EDA-200

Runoff = 4.94 cfs @ 12.98 hrs, Volume= 52,605 cf, Depth= 1.69"
 Routed to Link DP-2 : Frontage Road

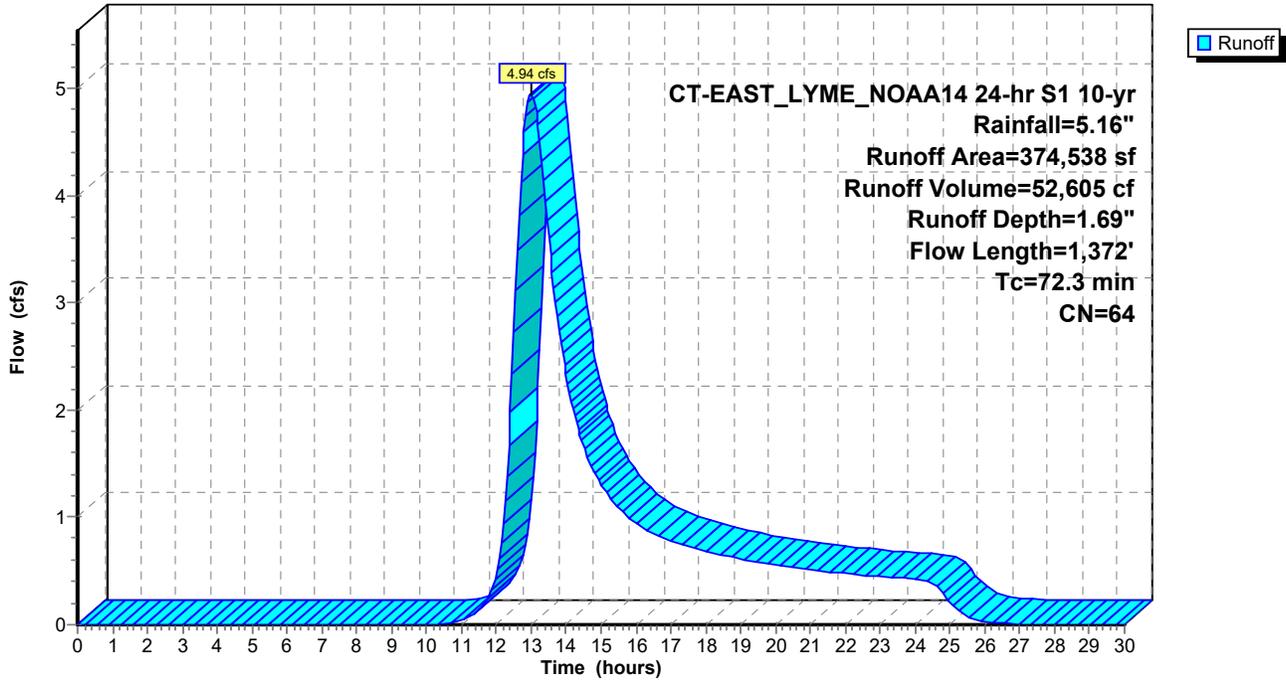
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
25,715	55	Woods, Good, HSG B
292,444	61	Pasture/grassland/range, Good, HSG B
19,506	61	>75% Grass cover, Good, HSG B
36,873	98	Paved parking, HSG B
374,538	64	Weighted Average
337,665		90.16% Pervious Area
36,873		9.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
52.2	980	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.2	12	0.0300	1.21		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
1.8	310	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
72.3	1,372	Total			

Subcatchment EDA-200: EDA-200

Hydrograph

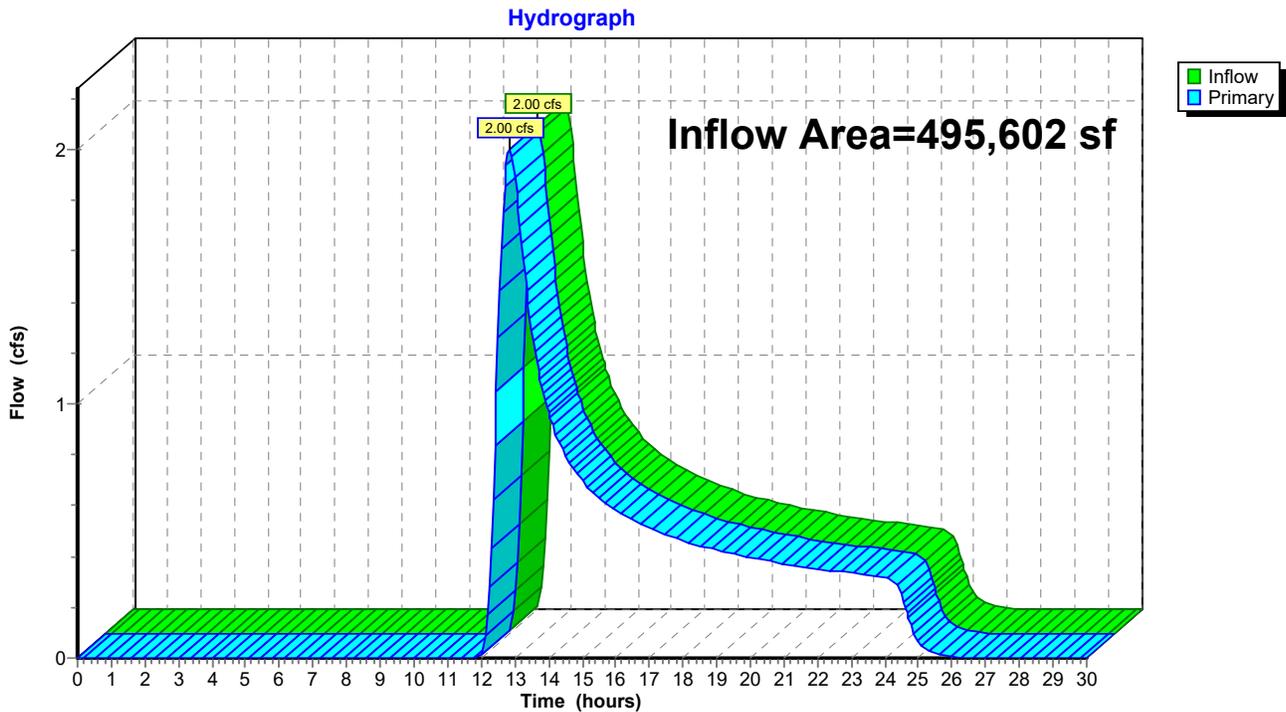


Summary for Link DP-1: Wetlands WA2 - WA18

Inflow Area = 495,602 sf, 0.00% Impervious, Inflow Depth = 0.65" for 10-yr event
Inflow = 2.00 cfs @ 12.85 hrs, Volume= 26,764 cf
Primary = 2.00 cfs @ 12.85 hrs, Volume= 26,764 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA18



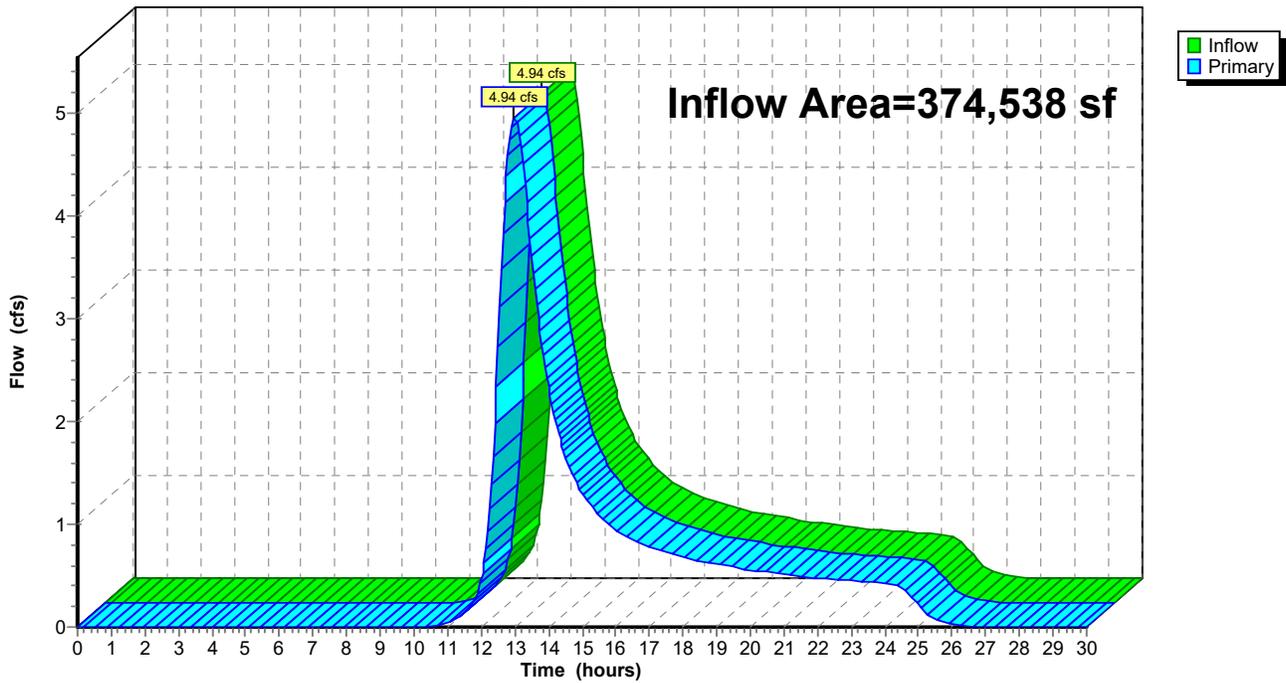
Summary for Link DP-2: Frontage Road

Inflow Area = 374,538 sf, 9.84% Impervious, Inflow Depth = 1.69" for 10-yr event
Inflow = 4.94 cfs @ 12.98 hrs, Volume= 52,605 cf
Primary = 4.94 cfs @ 12.98 hrs, Volume= 52,605 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-2: Frontage Road

Hydrograph



Summary for Subcatchment EDA-100: EDA-100

Runoff = 4.24 cfs @ 12.77 hrs, Volume= 45,580 cf, Depth= 1.10"
 Routed to Link DP-1 : Wetlands WA2 - WA18

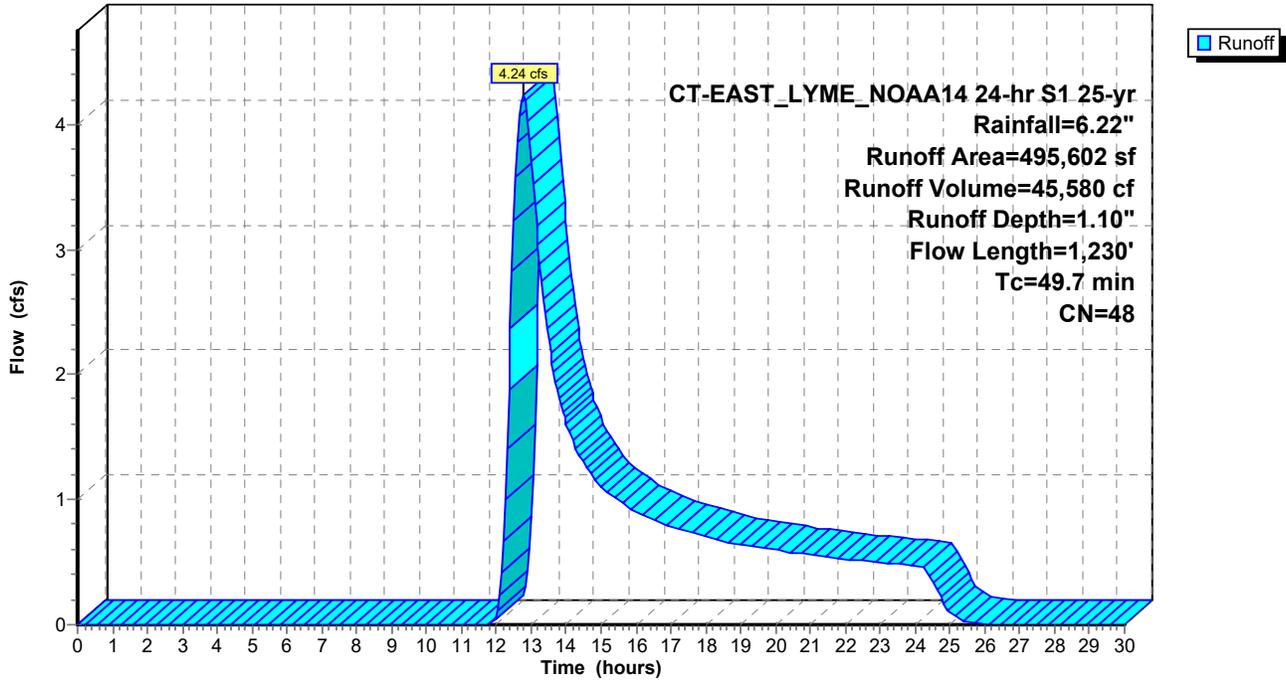
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
155,482	30	Woods, Good, HSG A
219	39	Pasture/grassland/range, Good, HSG A
67,565	39	>75% Grass cover, Good, HSG A
51,857	58	Woods/grass comb., Good, HSG B
212,761	61	Pasture/grassland/range, Good, HSG B
7,718	61	>75% Grass cover, Good, HSG B
495,602	48	Weighted Average
495,602		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
26.4	785	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
7.3	385	0.0310	0.88		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
49.7	1,230	Total			

Subcatchment EDA-100: EDA-100

Hydrograph



Summary for Subcatchment EDA-200: EDA-200

Runoff = 7.35 cfs @ 12.97 hrs, Volume= 75,580 cf, Depth= 2.42"

Routed to Link DP-2 : Frontage Road

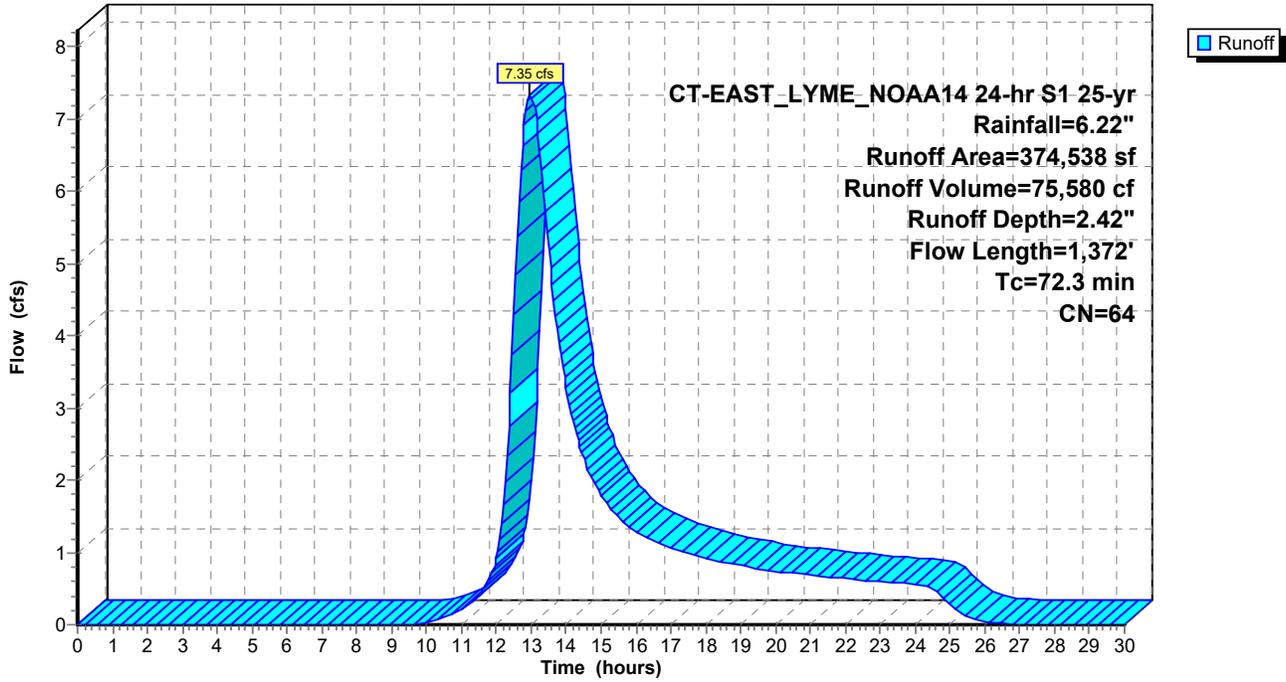
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
25,715	55	Woods, Good, HSG B
292,444	61	Pasture/grassland/range, Good, HSG B
19,506	61	>75% Grass cover, Good, HSG B
36,873	98	Paved parking, HSG B
374,538	64	Weighted Average
337,665		90.16% Pervious Area
36,873		9.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
52.2	980	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.2	12	0.0300	1.21		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
1.8	310	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
72.3	1,372	Total			

Subcatchment EDA-200: EDA-200

Hydrograph

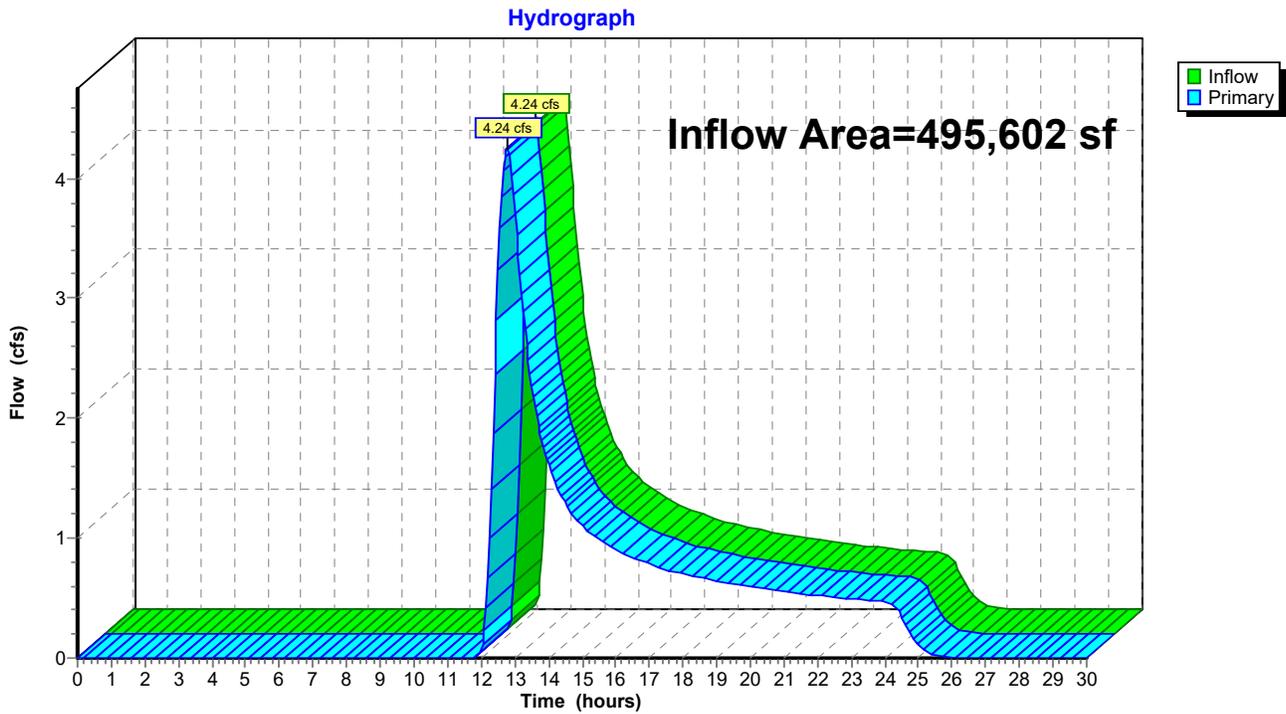


Summary for Link DP-1: Wetlands WA2 - WA18

Inflow Area = 495,602 sf, 0.00% Impervious, Inflow Depth = 1.10" for 25-yr event
Inflow = 4.24 cfs @ 12.77 hrs, Volume= 45,580 cf
Primary = 4.24 cfs @ 12.77 hrs, Volume= 45,580 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA18



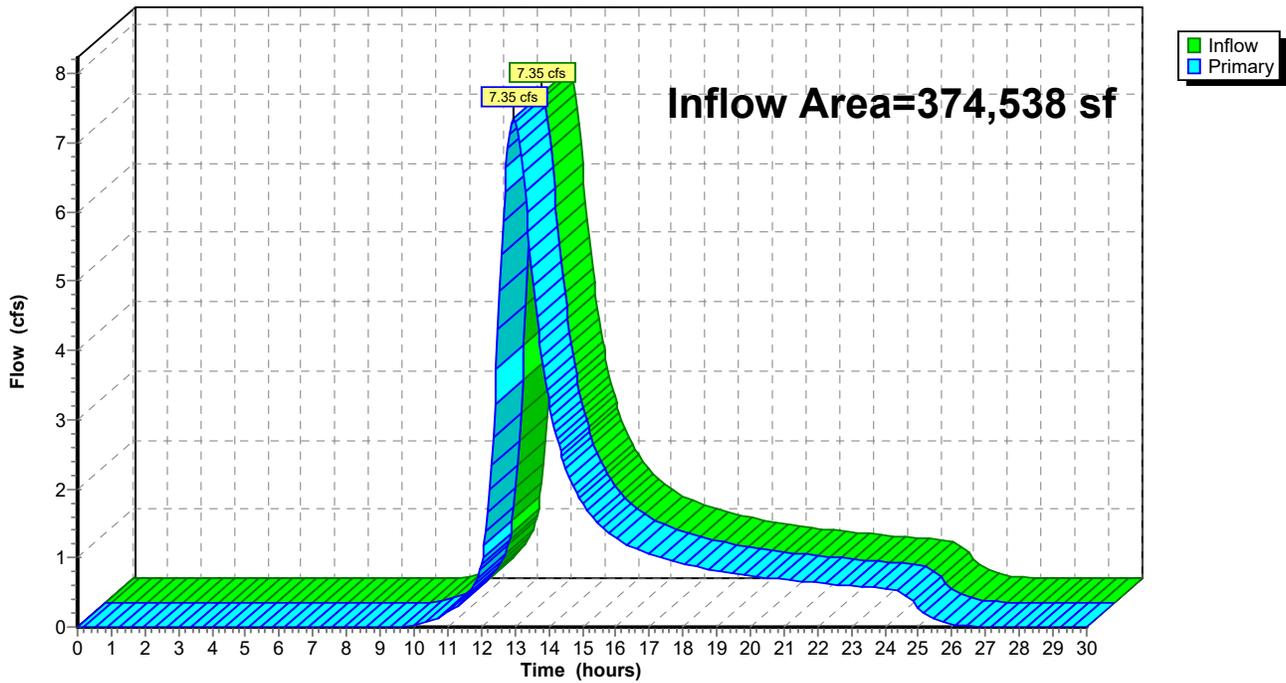
Summary for Link DP-2: Frontage Road

Inflow Area = 374,538 sf, 9.84% Impervious, Inflow Depth = 2.42" for 25-yr event
Inflow = 7.35 cfs @ 12.97 hrs, Volume= 75,580 cf
Primary = 7.35 cfs @ 12.97 hrs, Volume= 75,580 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-2: Frontage Road

Hydrograph



Summary for Subcatchment EDA-100: EDA-100

Runoff = 8.79 cfs @ 12.71 hrs, Volume= 81,003 cf, Depth= 1.96"
 Routed to Link DP-1 : Wetlands WA2 - WA18

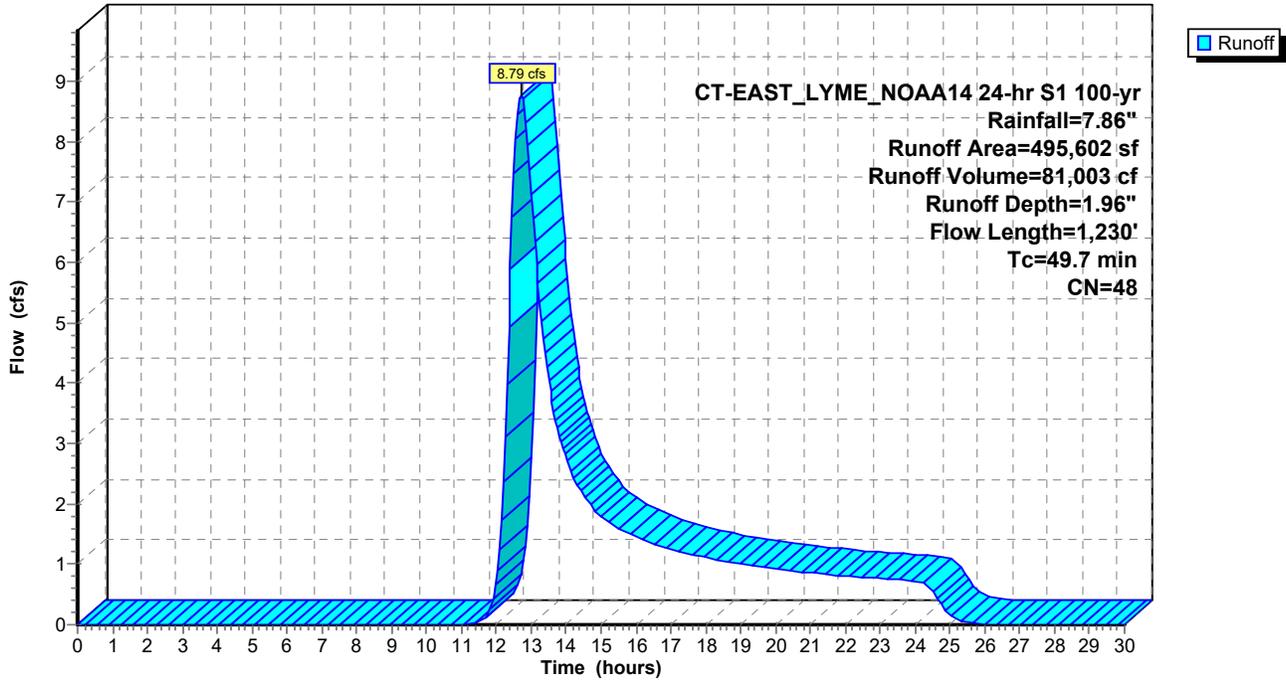
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
155,482	30	Woods, Good, HSG A
219	39	Pasture/grassland/range, Good, HSG A
67,565	39	>75% Grass cover, Good, HSG A
51,857	58	Woods/grass comb., Good, HSG B
212,761	61	Pasture/grassland/range, Good, HSG B
7,718	61	>75% Grass cover, Good, HSG B
495,602	48	Weighted Average
495,602		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
26.4	785	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
7.3	385	0.0310	0.88		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
49.7	1,230	Total			

Subcatchment EDA-100: EDA-100

Hydrograph



Summary for Subcatchment EDA-200: EDA-200

Runoff = 11.40 cfs @ 12.95 hrs, Volume= 114,544 cf, Depth= 3.67"

Routed to Link DP-2 : Frontage Road

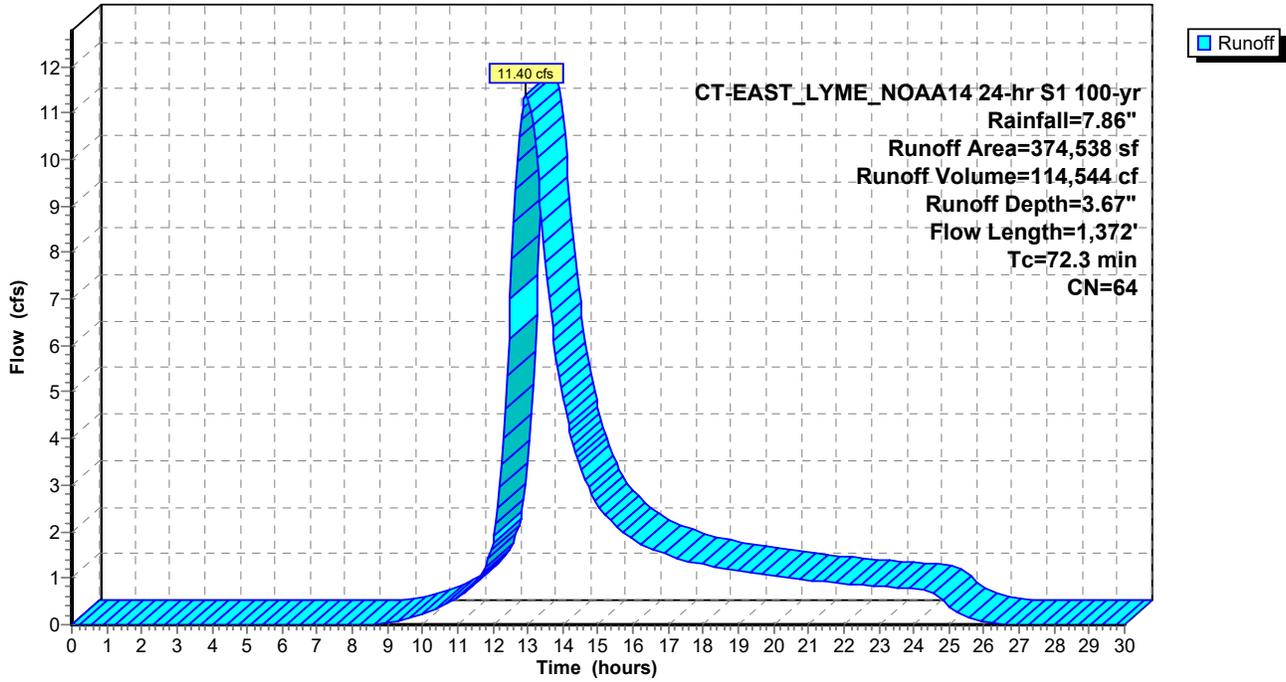
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
25,715	55	Woods, Good, HSG B
292,444	61	Pasture/grassland/range, Good, HSG B
19,506	61	>75% Grass cover, Good, HSG B
36,873	98	Paved parking, HSG B
374,538	64	Weighted Average
337,665		90.16% Pervious Area
36,873		9.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
52.2	980	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.2	12	0.0300	1.21		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
1.8	310	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
72.3	1,372	Total			

Subcatchment EDA-200: EDA-200

Hydrograph



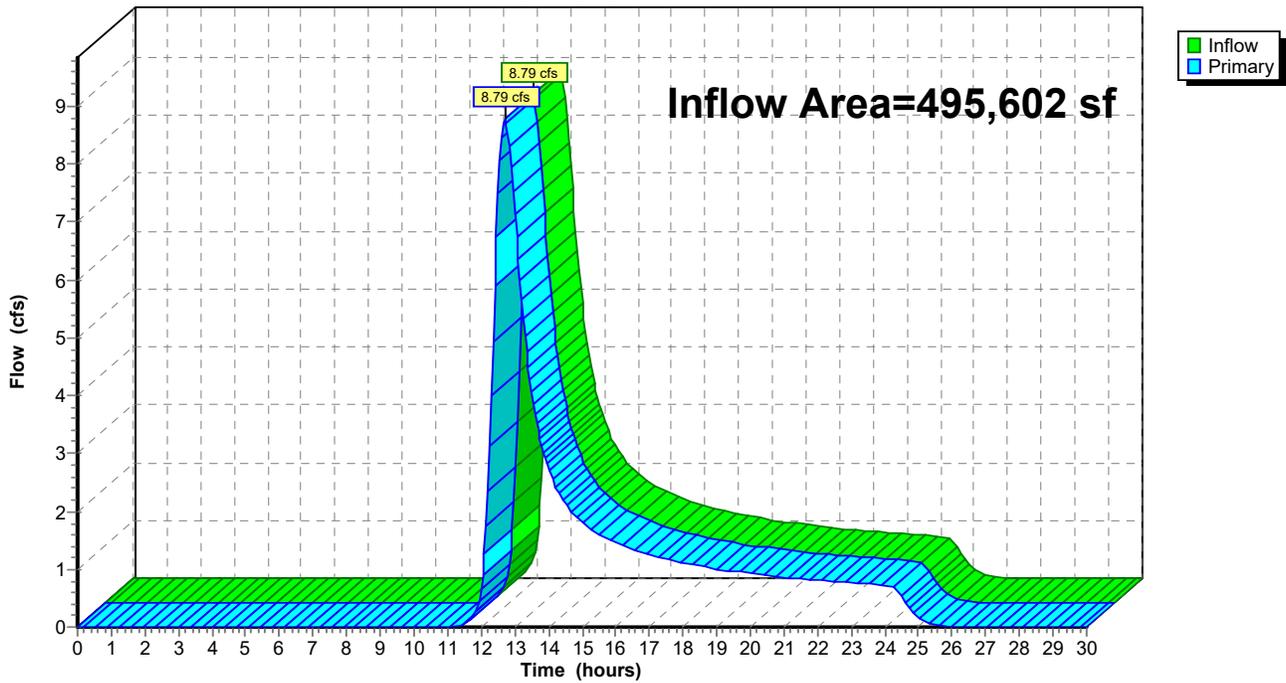
Summary for Link DP-1: Wetlands WA2 - WA18

Inflow Area = 495,602 sf, 0.00% Impervious, Inflow Depth = 1.96" for 100-yr event
Inflow = 8.79 cfs @ 12.71 hrs, Volume= 81,003 cf
Primary = 8.79 cfs @ 12.71 hrs, Volume= 81,003 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA18

Hydrograph



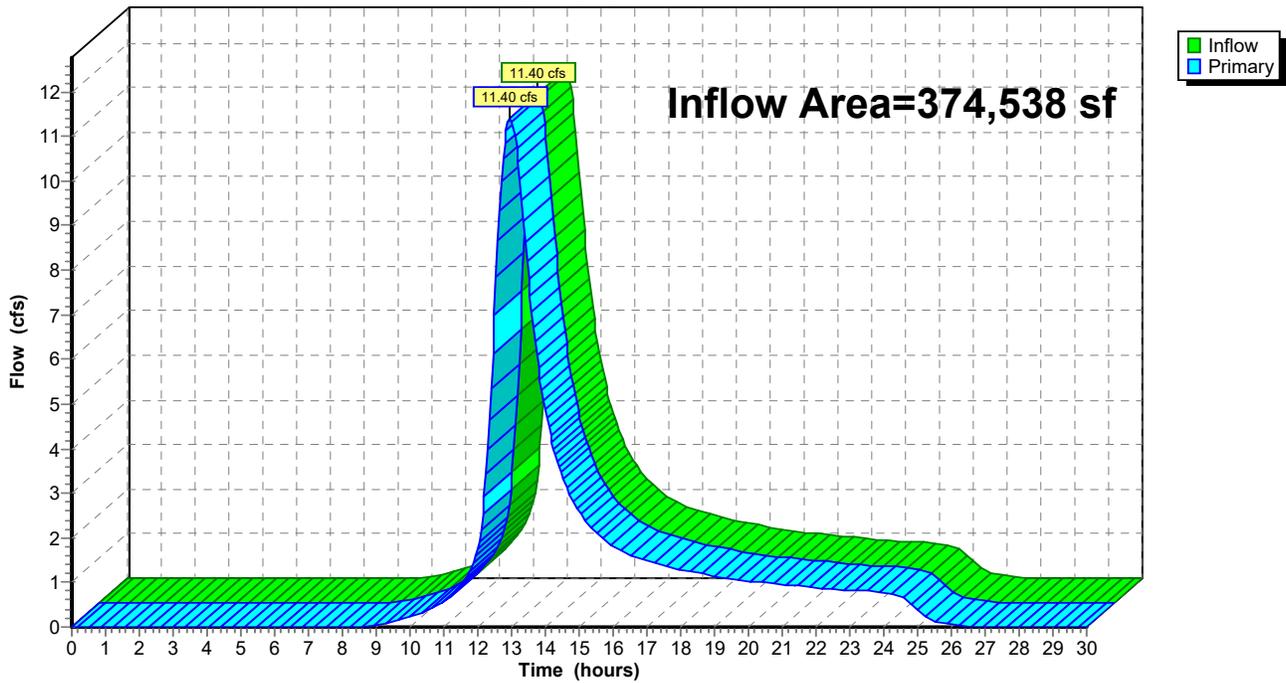
Summary for Link DP-2: Frontage Road

Inflow Area = 374,538 sf, 9.84% Impervious, Inflow Depth = 3.67" for 100-yr event
Inflow = 11.40 cfs @ 12.95 hrs, Volume= 114,544 cf
Primary = 11.40 cfs @ 12.95 hrs, Volume= 114,544 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-2: Frontage Road

Hydrograph



Summary for Subcatchment EDA-100: EDA-100

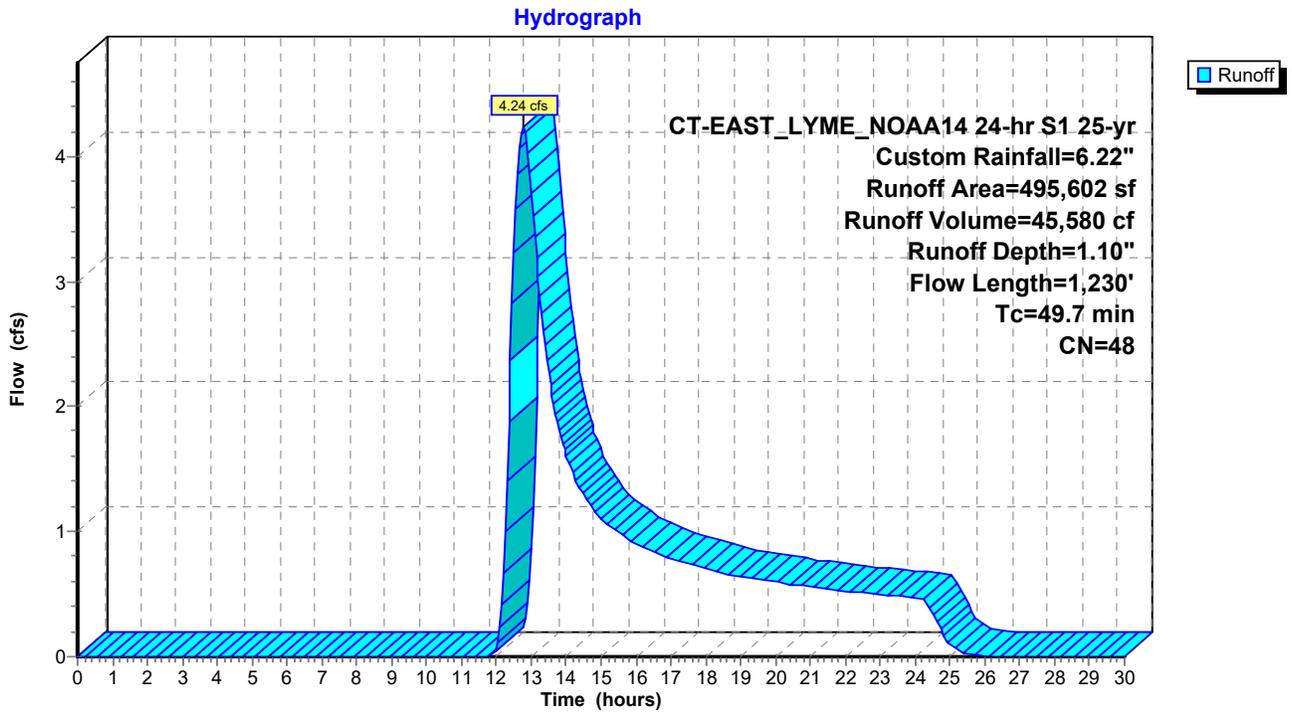
Runoff = 4.24 cfs @ 12.77 hrs, Volume= 45,580 cf, Depth= 1.10"
 Routed to Link DP-1 : Wetlands WA2 - WA18

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
155,482	30	Woods, Good, HSG A
219	39	Pasture/grassland/range, Good, HSG A
67,565	39	>75% Grass cover, Good, HSG A
51,857	58	Woods/grass comb., Good, HSG B
212,761	61	Pasture/grassland/range, Good, HSG B
7,718	61	>75% Grass cover, Good, HSG B
495,602	48	Weighted Average
495,602		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
26.4	785	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
7.3	385	0.0310	0.88		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
49.7	1,230	Total			

Subcatchment EDA-100: EDA-100



Summary for Subcatchment EDA-200: EDA-200

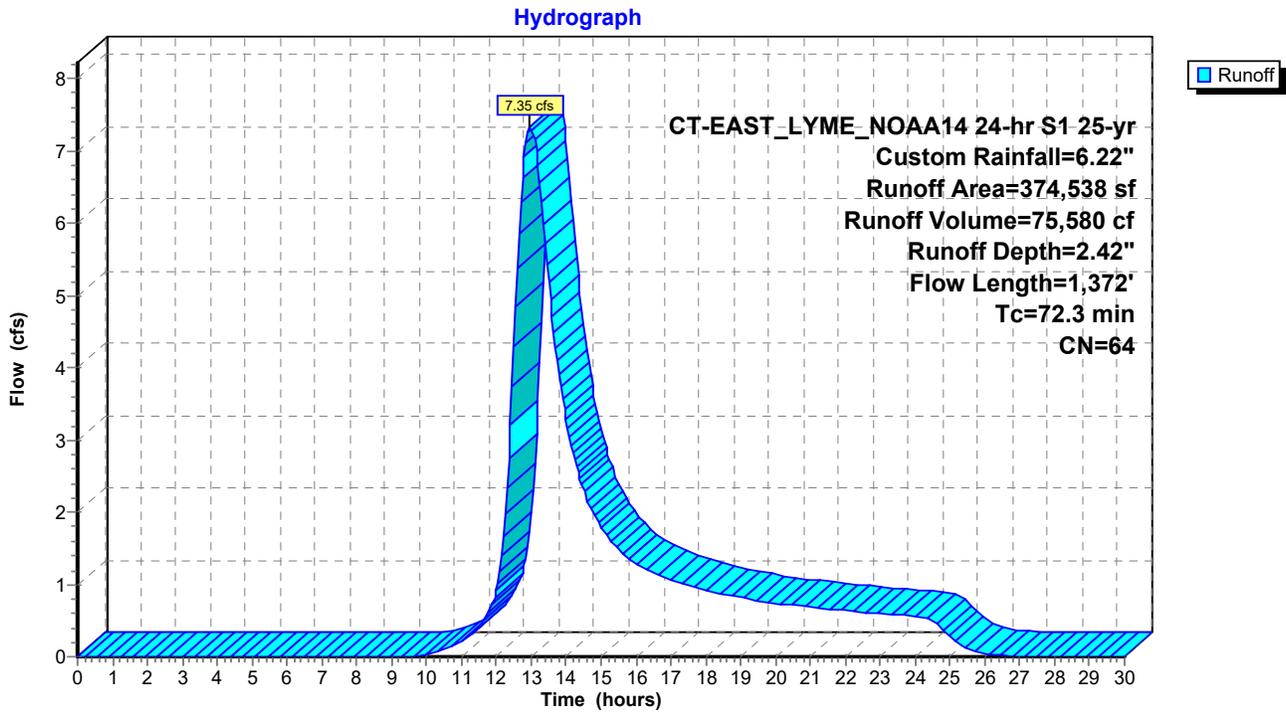
Runoff = 7.35 cfs @ 12.97 hrs, Volume= 75,580 cf, Depth= 2.42"
 Routed to Link DP-2 : Frontage Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
25,715	55	Woods, Good, HSG B
292,444	61	Pasture/grassland/range, Good, HSG B
19,506	61	>75% Grass cover, Good, HSG B
36,873	98	Paved parking, HSG B
374,538	64	Weighted Average
337,665		90.16% Pervious Area
36,873		9.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
52.2	980	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.2	12	0.0300	1.21		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
1.8	310	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
72.3	1,372	Total			

Subcatchment EDA-200: EDA-200

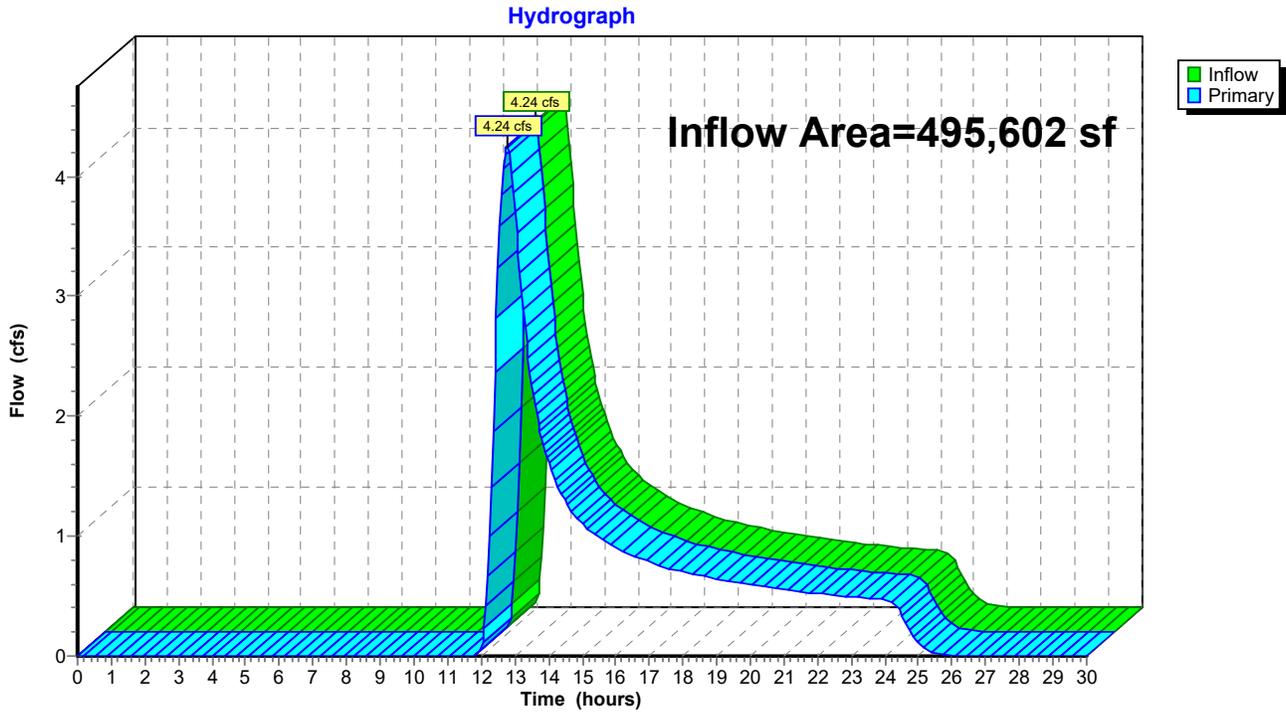


Summary for Link DP-1: Wetlands WA2 - WA18

Inflow Area = 495,602 sf, 0.00% Impervious, Inflow Depth = 1.10" for Custom event
 Inflow = 4.24 cfs @ 12.77 hrs, Volume= 45,580 cf
 Primary = 4.24 cfs @ 12.77 hrs, Volume= 45,580 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA18



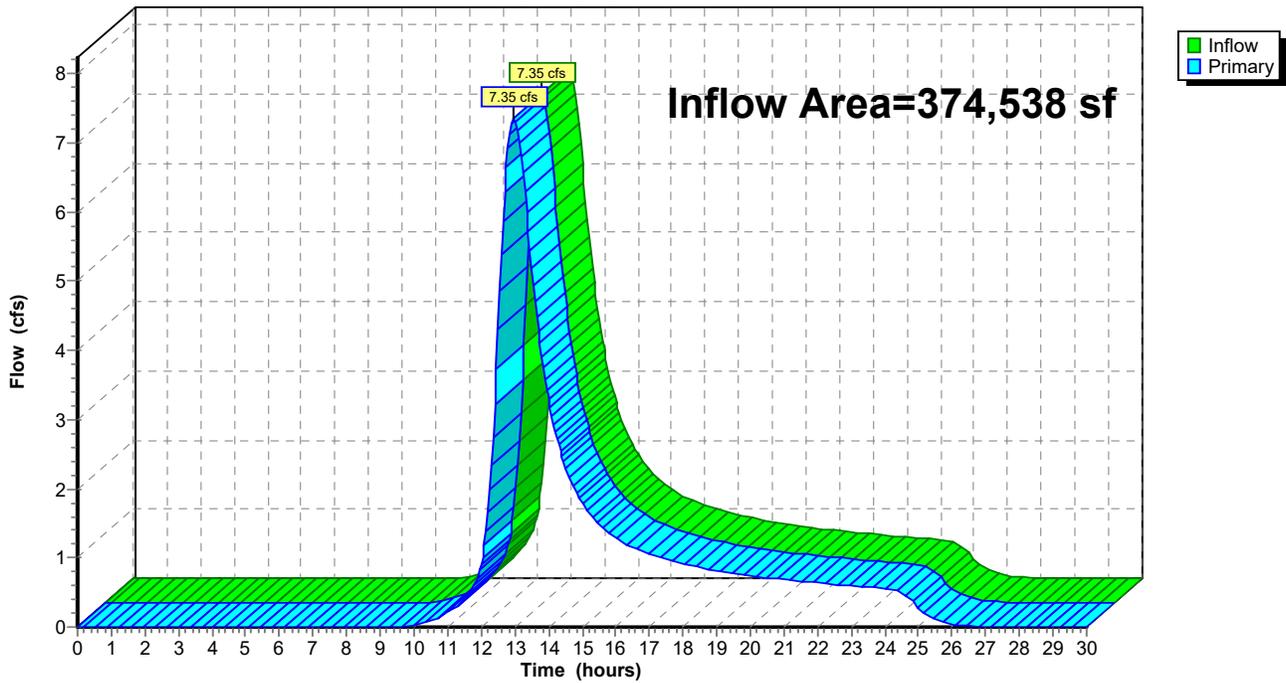
Summary for Link DP-2: Frontage Road

Inflow Area = 374,538 sf, 9.84% Impervious, Inflow Depth = 2.42" for Custom event
Inflow = 7.35 cfs @ 12.97 hrs, Volume= 75,580 cf
Primary = 7.35 cfs @ 12.97 hrs, Volume= 75,580 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

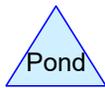
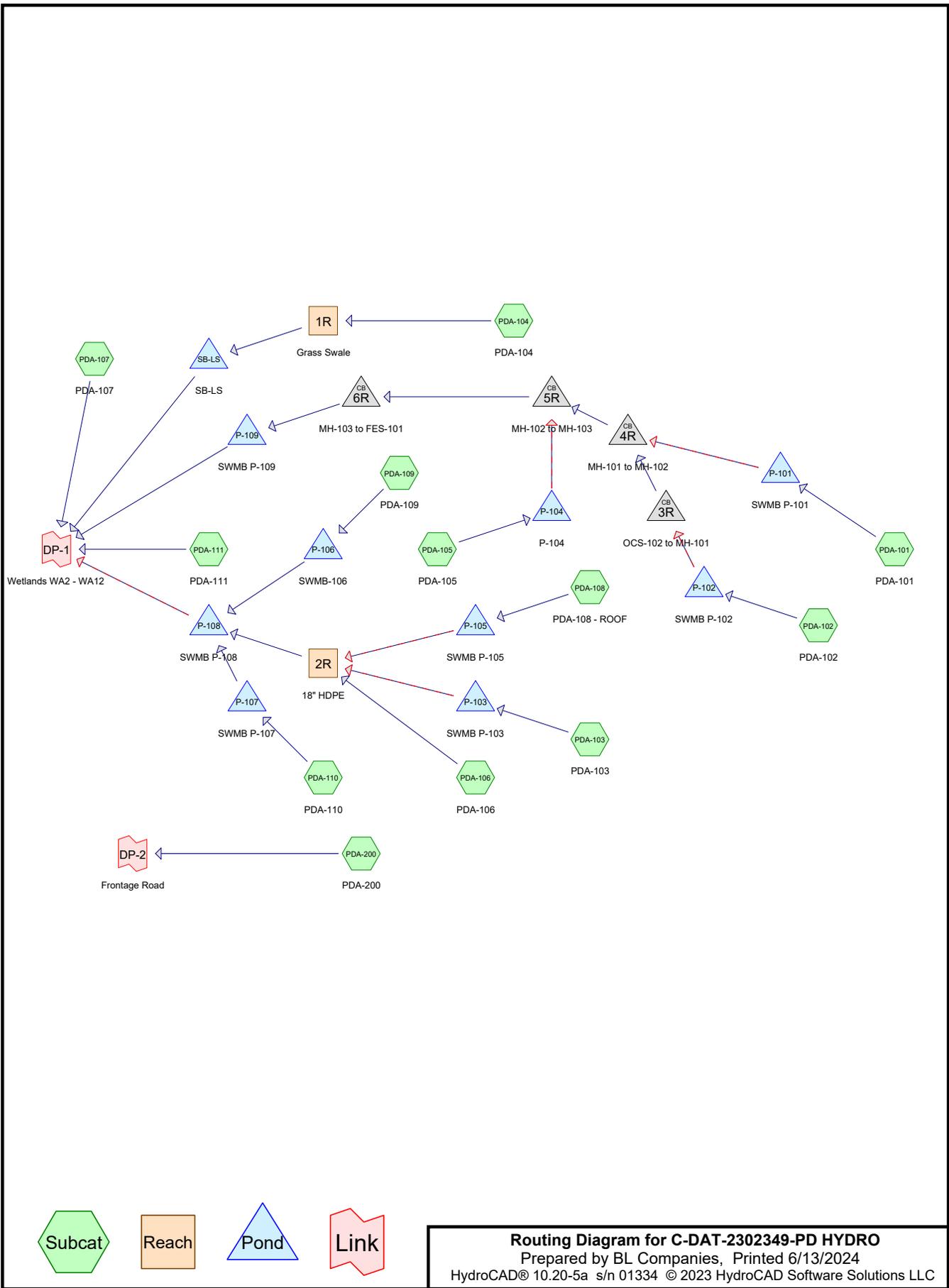
Link DP-2: Frontage Road

Hydrograph



APPENDIX D

POST-DEVELOPMENT HYDROLOGIC ANALYSIS



Routing Diagram for C-DAT-2302349-PD HYDRO
 Prepared by BL Companies, Printed 6/13/2024
 HydroCAD® 10.20-5a s/n 01334 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment PDA-101: PDA-101

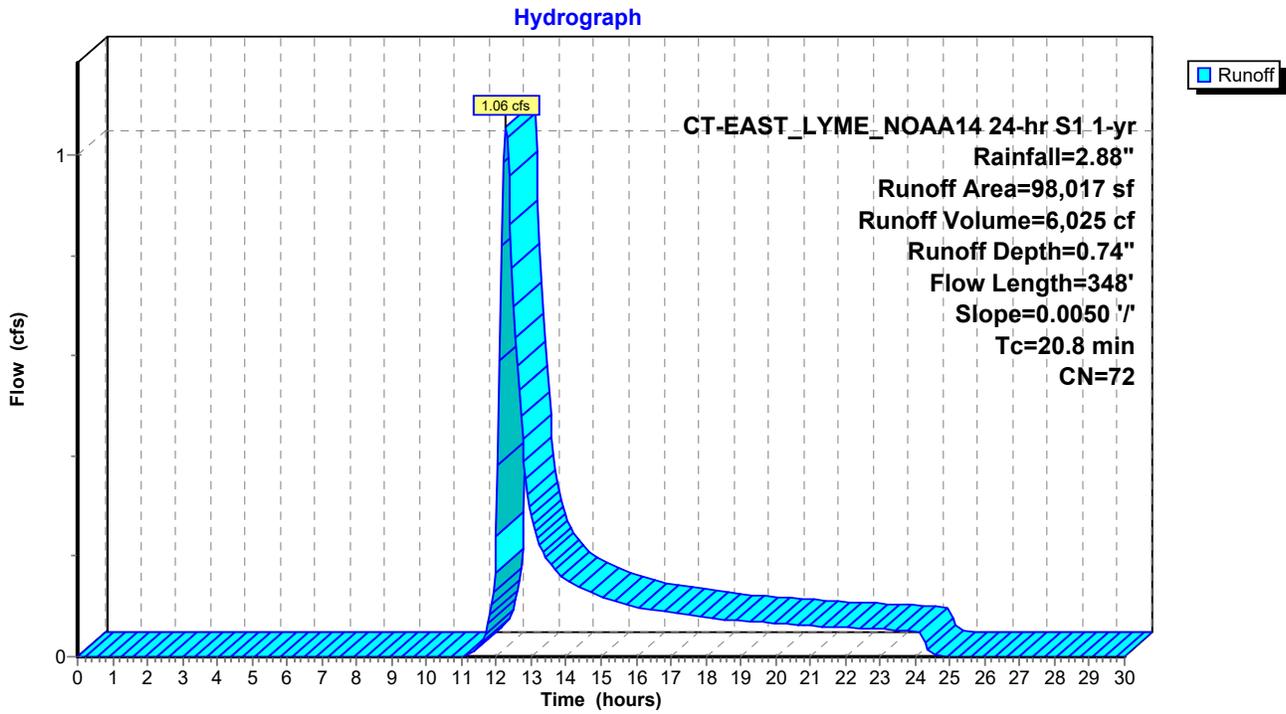
Runoff = 1.06 cfs @ 12.26 hrs, Volume= 6,025 cf, Depth= 0.74"
 Routed to Pond P-101 : SWMB P-101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
15,098	55	Woods, Good, HSG B
28,559	48	Brush, Good, HSG B
12,892	61	>75% Grass cover, Good, HSG B
41,468	98	Paved parking, HSG B
98,017	72	Weighted Average
56,549		57.69% Pervious Area
41,468		42.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0050	0.06		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.40"
6.4	190	0.0050	0.49		Shallow Concentrated Flow, Brush Short Grass Pasture Kv= 7.0 fps
0.6	108	0.0050	3.21	2.52	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
20.8	348	Total			

Subcatchment PDA-101: PDA-101



Summary for Subcatchment PDA-102: PDA-102

Runoff = 5.07 cfs @ 12.05 hrs, Volume= 15,662 cf, Depth= 2.14"
 Routed to Pond P-102 : SWMB P-102

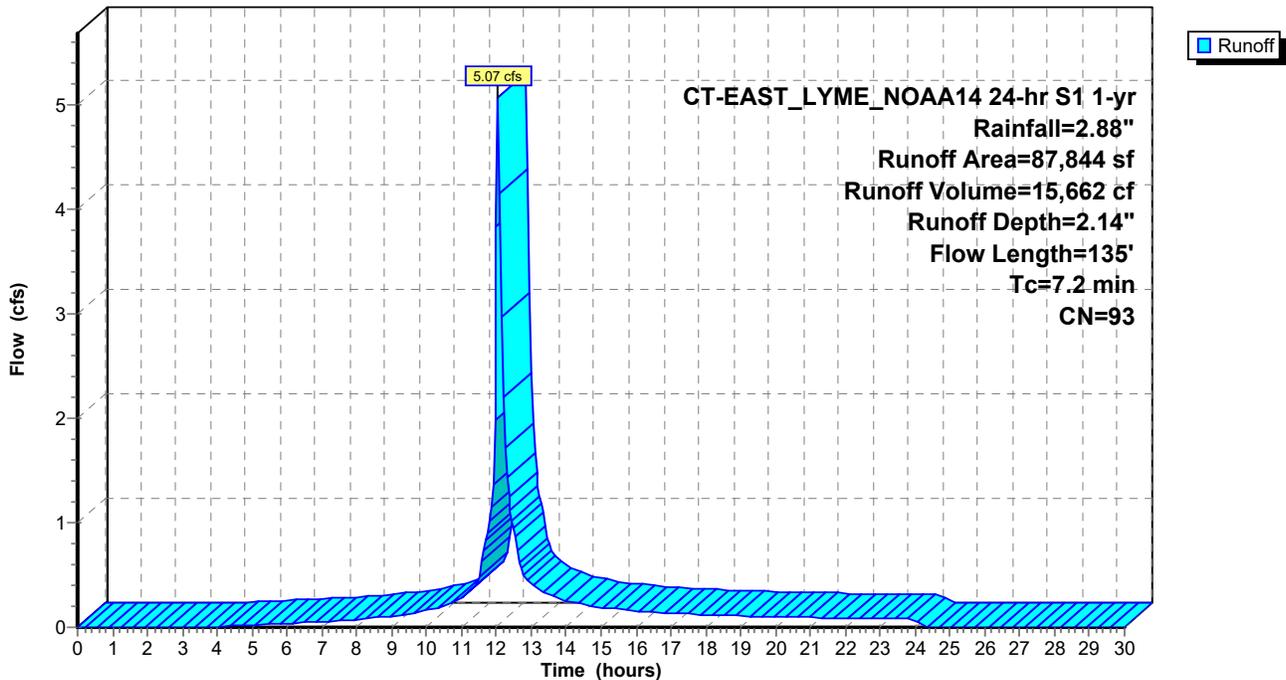
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
12,499	61	>75% Grass cover, Good, HSG B
75,345	98	Paved parking, HSG B
87,844	93	Weighted Average
12,499		14.23% Pervious Area
75,345		85.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	45	0.0100	0.11		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 3.40"
0.6	90	0.0150	2.49		Shallow Concentrated Flow, Paved Paved Kv= 20.3 fps
7.2	135	Total			

Subcatchment PDA-102: PDA-102

Hydrograph



Summary for Subcatchment PDA-103: PDA-103

Runoff = 1.62 cfs @ 12.02 hrs, Volume= 4,686 cf, Depth= 2.33"
 Routed to Pond P-103 : SWMB P-103

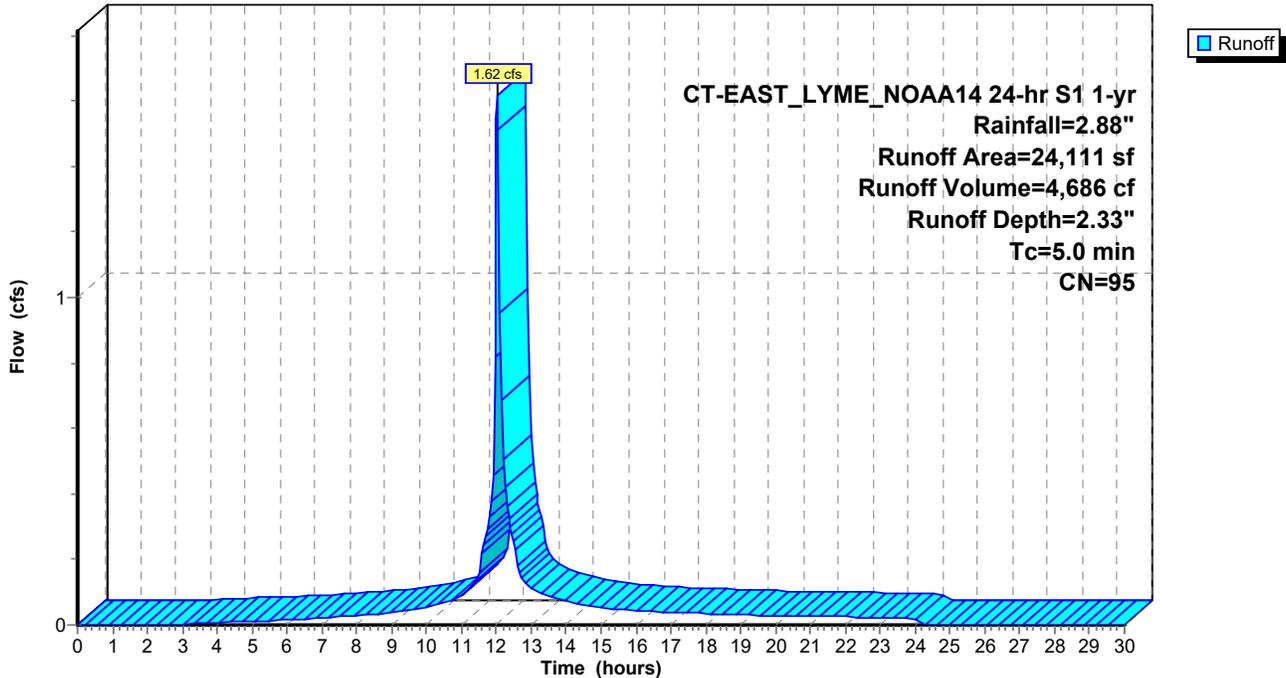
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
2,159	61	>75% Grass cover, Good, HSG B
21,952	98	Paved parking, HSG B
24,111	95	Weighted Average
2,159		8.95% Pervious Area
21,952		91.05% Impervious Area

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

Subcatchment PDA-103: PDA-103

Hydrograph



Summary for Subcatchment PDA-104: PDA-104

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 136 cf, Depth= 0.03"
 Routed to Reach 1R : Grass Swale

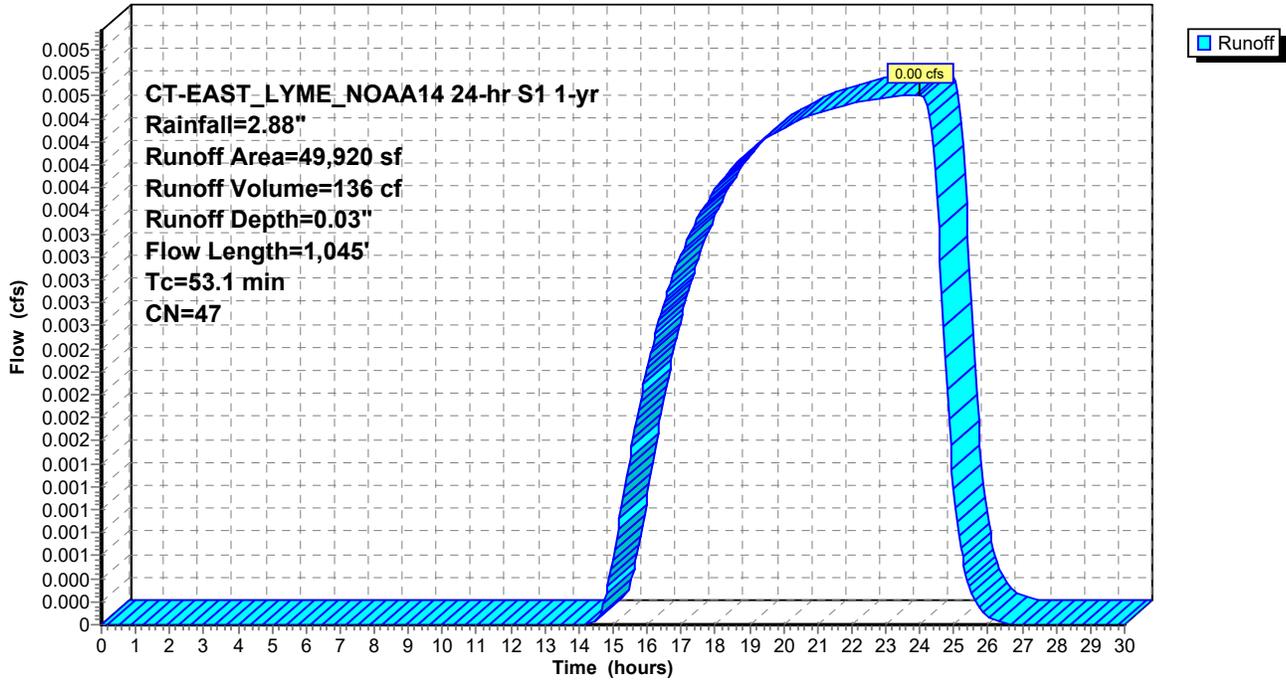
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
10,624	30	Woods, Good, HSG A
29,321	55	Woods, Good, HSG B
7,850	39	>75% Grass cover, Good, HSG A
2,125	61	>75% Grass cover, Good, HSG B
49,920	47	Weighted Average
49,920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	75	0.0050	0.04		Sheet Flow, Sheet Woods: Light underbrush n= 0.400 P2= 3.40"
9.0	190	0.0050	0.35		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
13.1	480	0.0150	0.61		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
2.2	300	0.0050	2.25	8.99	Channel Flow, Grass Swale Area= 4.0 sf Perim= 12.4' r= 0.32' n= 0.022 Earth, clean & straight
53.1	1,045	Total			

Subcatchment PDA-104: PDA-104

Hydrograph



Summary for Subcatchment PDA-105: PDA-105

Runoff = 1.17 cfs @ 12.02 hrs, Volume= 3,386 cf, Depth= 2.33"
 Routed to Pond P-104 : P-104

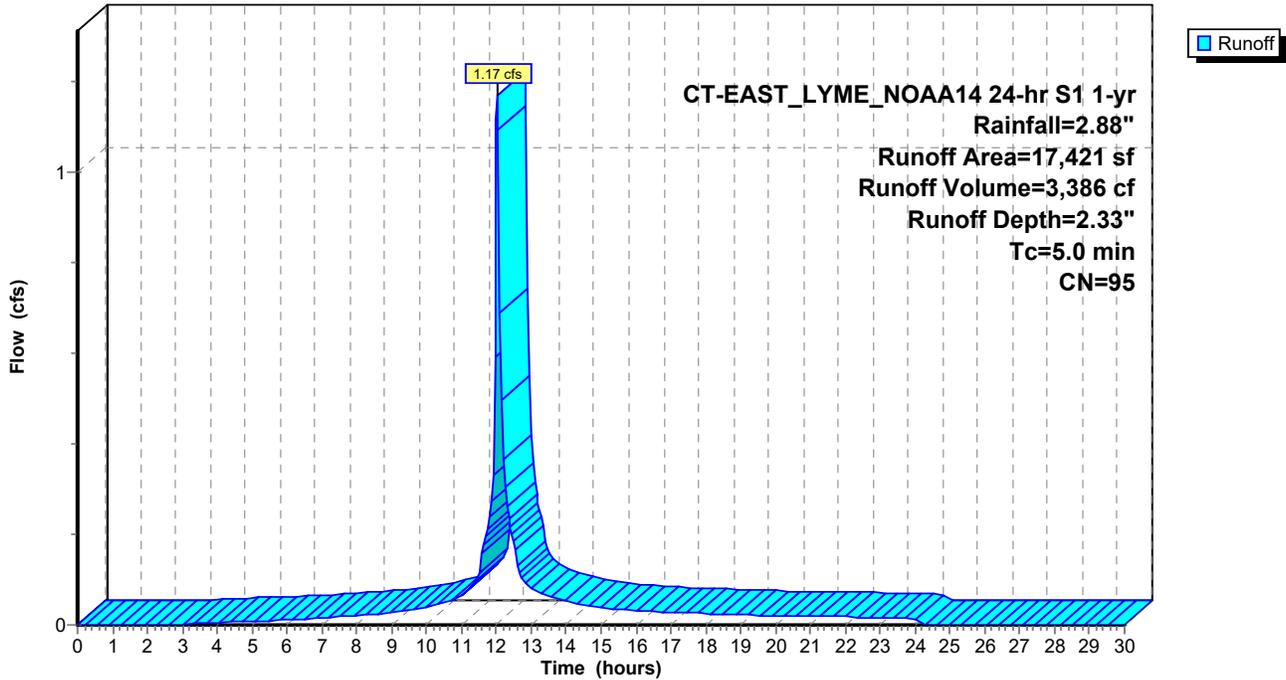
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
15,999	98	Paved parking, HSG B
1,422	61	>75% Grass cover, Good, HSG B
17,421	95	Weighted Average
1,422		8.16% Pervious Area
15,999		91.84% Impervious Area

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

Subcatchment PDA-105: PDA-105

Hydrograph



Summary for Subcatchment PDA-106: PDA-106

Runoff = 0.53 cfs @ 12.03 hrs, Volume= 1,493 cf, Depth= 1.56"
Routed to Reach 2R : 18" HDPE

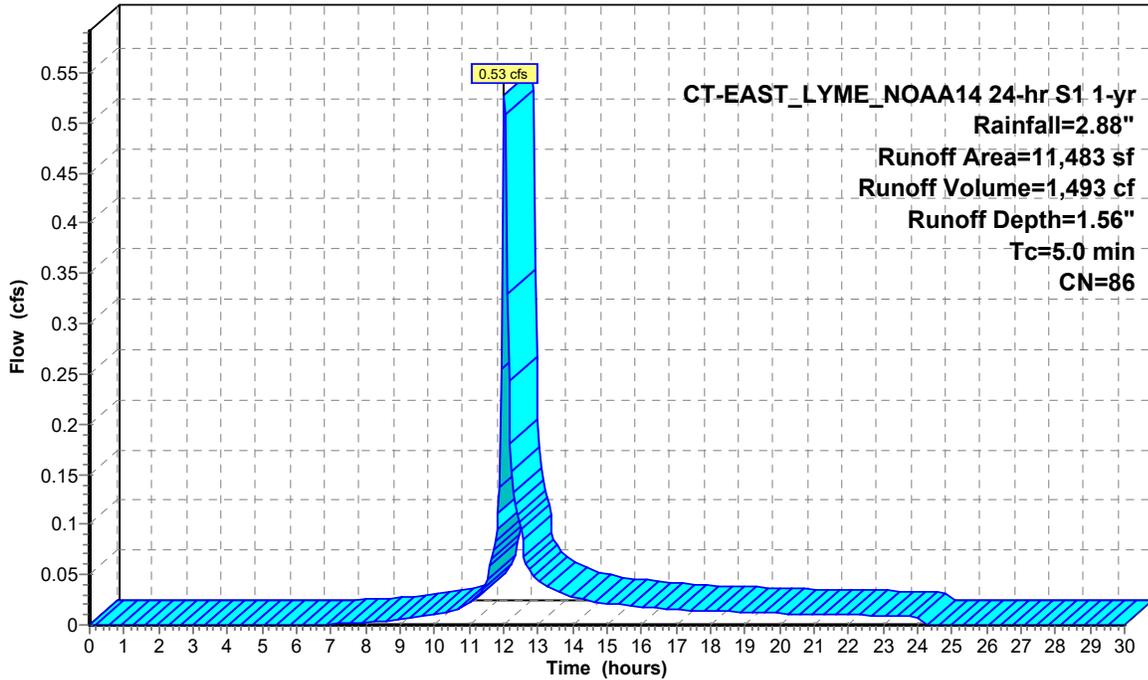
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Table with 3 columns: Area (sf), CN, Description. Rows include land use details like '>75% Grass cover, Good, HSG B' and 'Paved parking, HSG B', along with weighted averages for pervious and impervious areas.

Table with 7 columns: Tc (min), Length (feet), Slope (ft/ft), Velocity (ft/sec), Capacity (cfs), Description. Row shows 'Direct Entry, Direct' with a Tc of 5.0 min.

Subcatchment PDA-106: PDA-106

Hydrograph



Runoff

CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"
Runoff Area=11,483 sf
Runoff Volume=1,493 cf
Runoff Depth=1.56"
Tc=5.0 min
CN=86

Summary for Subcatchment PDA-107: PDA-107

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
 Routed to Link DP-1 : Wetlands WA2 - WA12

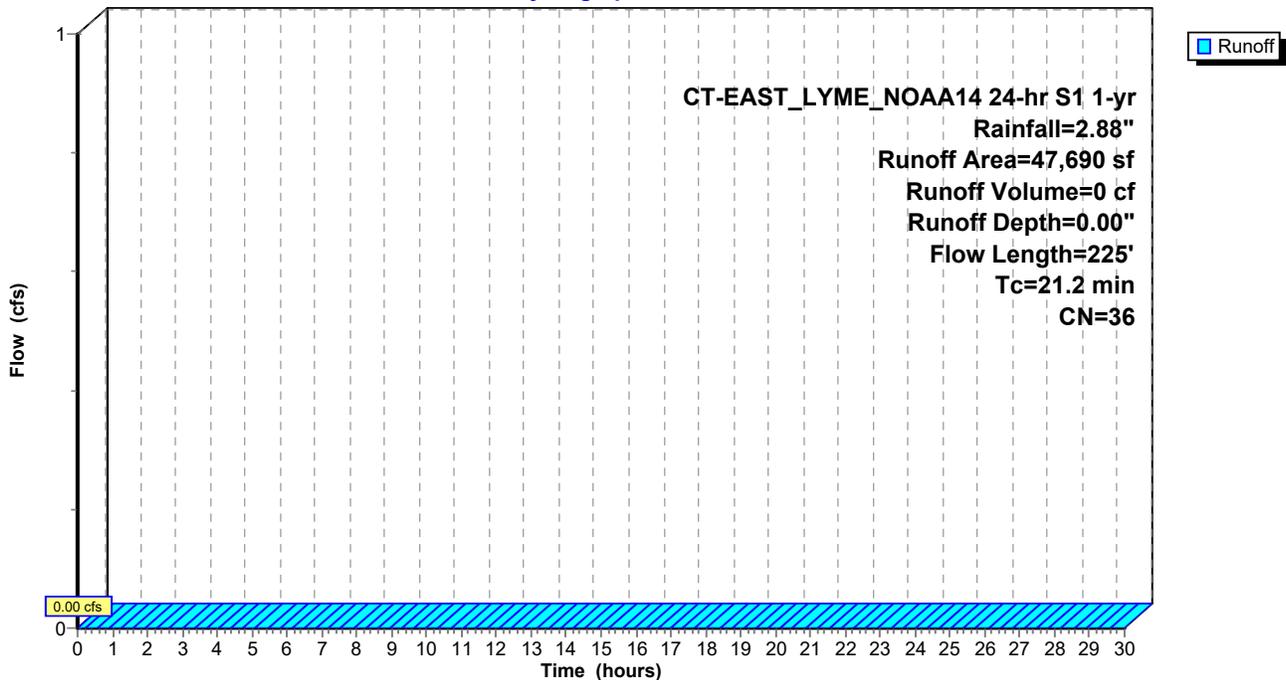
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
20,022	30	Woods, Good, HSG A
5,821	39	>75% Grass cover, Good, HSG A
2,302	61	>75% Grass cover, Good, HSG B
19,545	39	Pasture/grassland/range, Good, HSG A
47,690	36	Weighted Average
47,690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
5.1	150	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.1	15	0.1300	1.80		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
21.2	225	Total			

Subcatchment PDA-107: PDA-107

Hydrograph



Summary for Subcatchment PDA-108: PDA-108 - ROOF

Runoff = 13.28 cfs @ 12.02 hrs, Volume= 40,646 cf, Depth= 2.65"
Routed to Pond P-105 : SWMB P-105

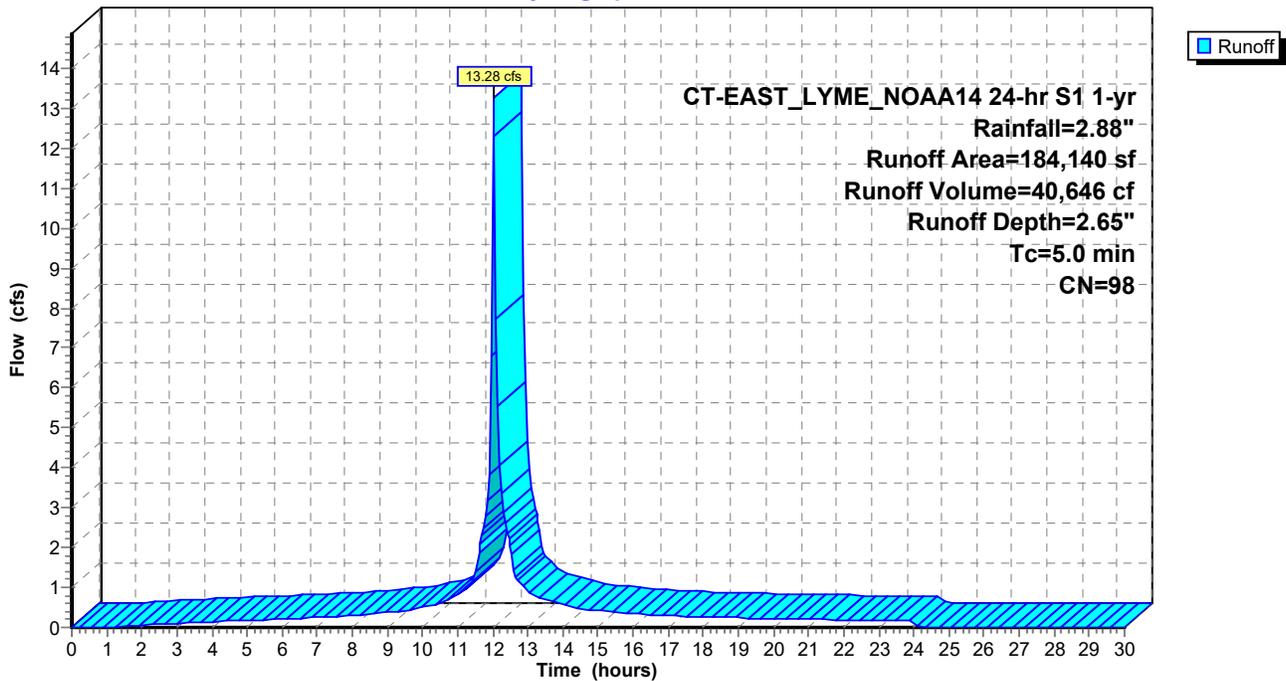
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
20,237	98	Roofs, HSG B
163,903	98	Roofs, HSG A
184,140	98	Weighted Average
184,140		100.00% Impervious Area

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

Subcatchment PDA-108: PDA-108 - ROOF

Hydrograph



Summary for Subcatchment PDA-109: PDA-109

Runoff = 2.88 cfs @ 12.03 hrs, Volume= 8,201 cf, Depth= 1.63"
 Routed to Pond P-106 : SWMB-106

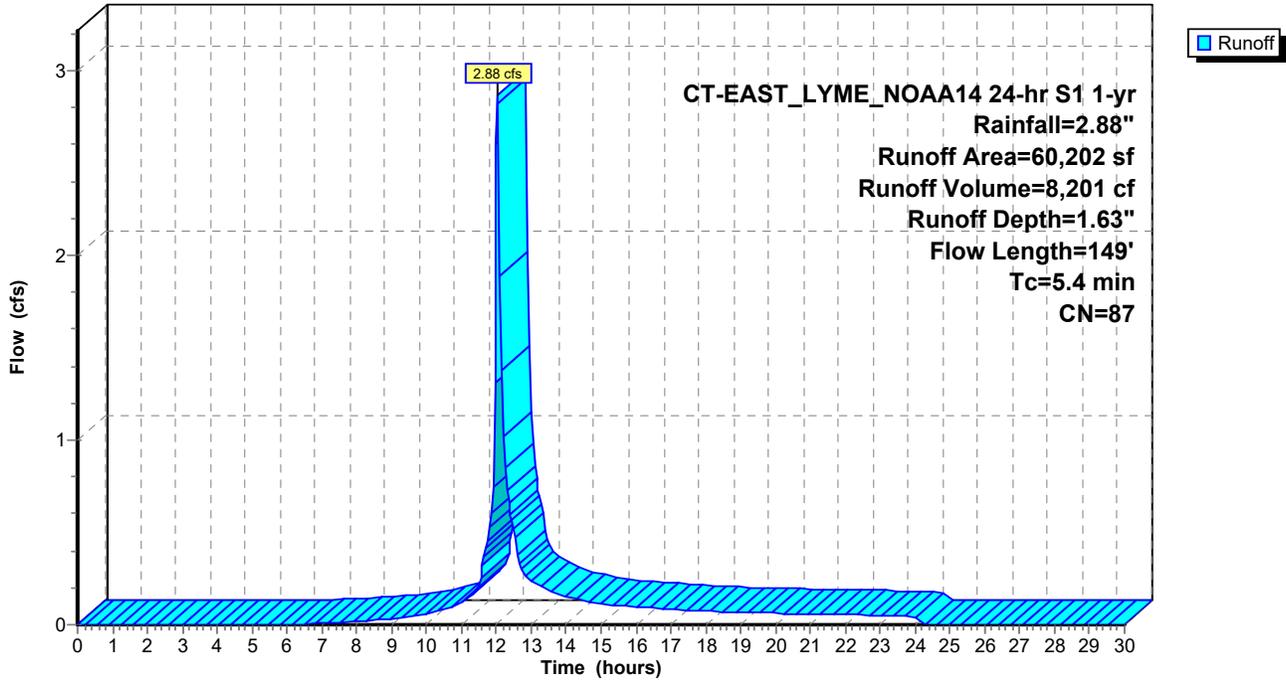
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
35,618	98	Paved parking, HSG A
11,394	98	Paved parking, HSG B
8,291	39	>75% Grass cover, Good, HSG A
4,899	61	>75% Grass cover, Good, HSG B
60,202	87	Weighted Average
13,190		21.91% Pervious Area
47,012		78.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	45	0.0200	0.15		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.1	20	0.0150	2.49		Shallow Concentrated Flow, gutter flow Paved Kv= 20.3 fps
0.3	84	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
5.4	149	Total			

Subcatchment PDA-109: PDA-109

Hydrograph



Summary for Subcatchment PDA-110: PDA-110

Runoff = 5.91 cfs @ 12.02 hrs, Volume= 16,919 cf, Depth= 2.23"
 Routed to Pond P-107 : SWMB P-107

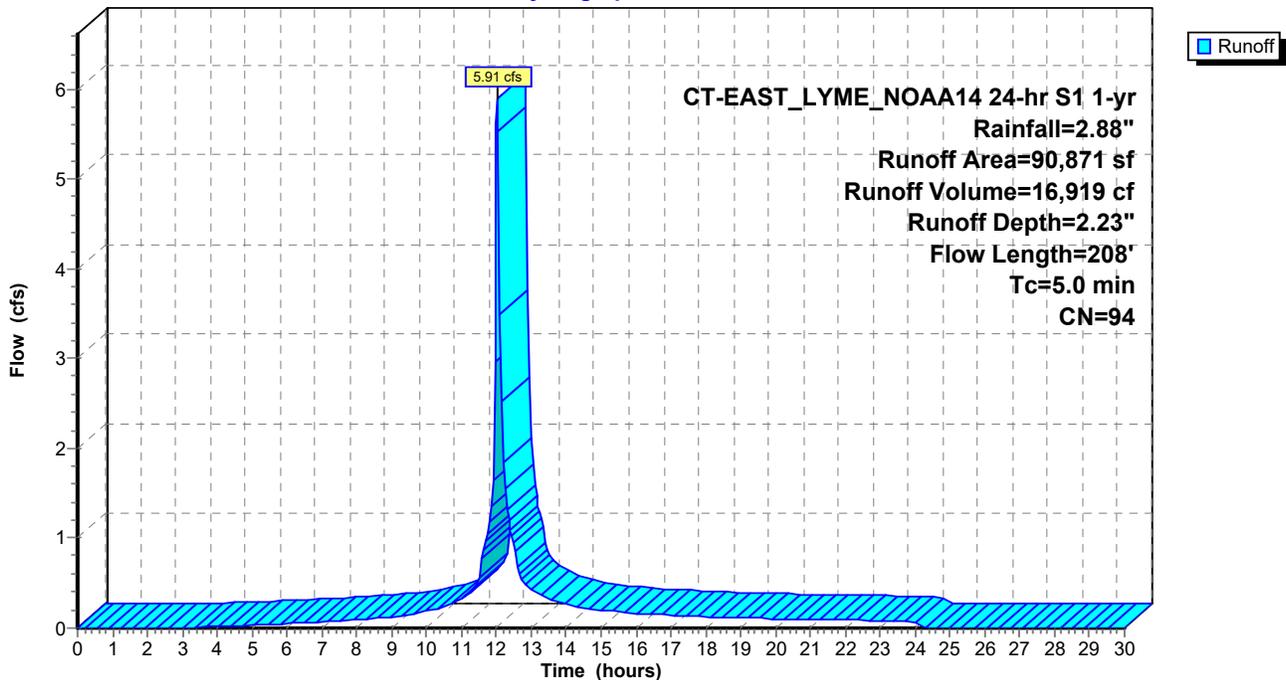
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
84,435	98	Paved parking, HSG A
6,436	39	>75% Grass cover, Good, HSG A
90,871	94	Weighted Average
6,436		7.08% Pervious Area
84,435		92.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	20	0.0200	0.13		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.5	70	0.0150	2.49		Shallow Concentrated Flow, Gutter Flow Paved Kv= 20.3 fps
0.4	118	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
3.5	208	Total, Increased to minimum Tc = 5.0 min			

Subcatchment PDA-110: PDA-110

Hydrograph



Summary for Subcatchment PDA-111: PDA-111

Runoff = 0.00 cfs @ 24.23 hrs, Volume= 0 cf, Depth= 0.00"
 Routed to Link DP-1 : Wetlands WA2 - WA12

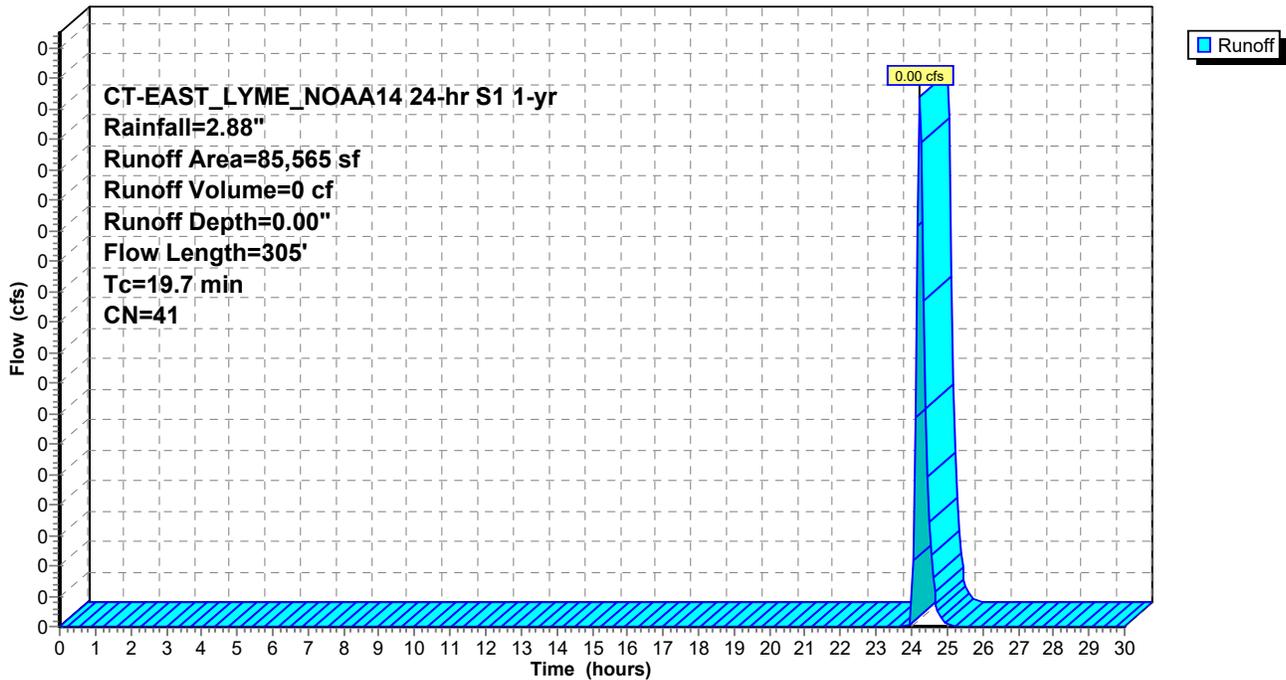
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
36,238	30	Woods, Good, HSG A
27,610	39	>75% Grass cover, Good, HSG A
3,052	55	Woods, Good, HSG B
18,665	61	Pasture/grassland/range, Good, HSG B
85,565	41	Weighted Average
85,565		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		Sheet Flow, Wooded Woods: Light underbrush n= 0.400 P2= 3.40"
3.9	255	0.0470	1.08		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
19.7	305	Total			

Subcatchment PDA-111: PDA-111

Hydrograph



Summary for Subcatchment PDA-200: PDA-200

Runoff = 1.50 cfs @ 12.32 hrs, Volume= 8,927 cf, Depth= 0.88"

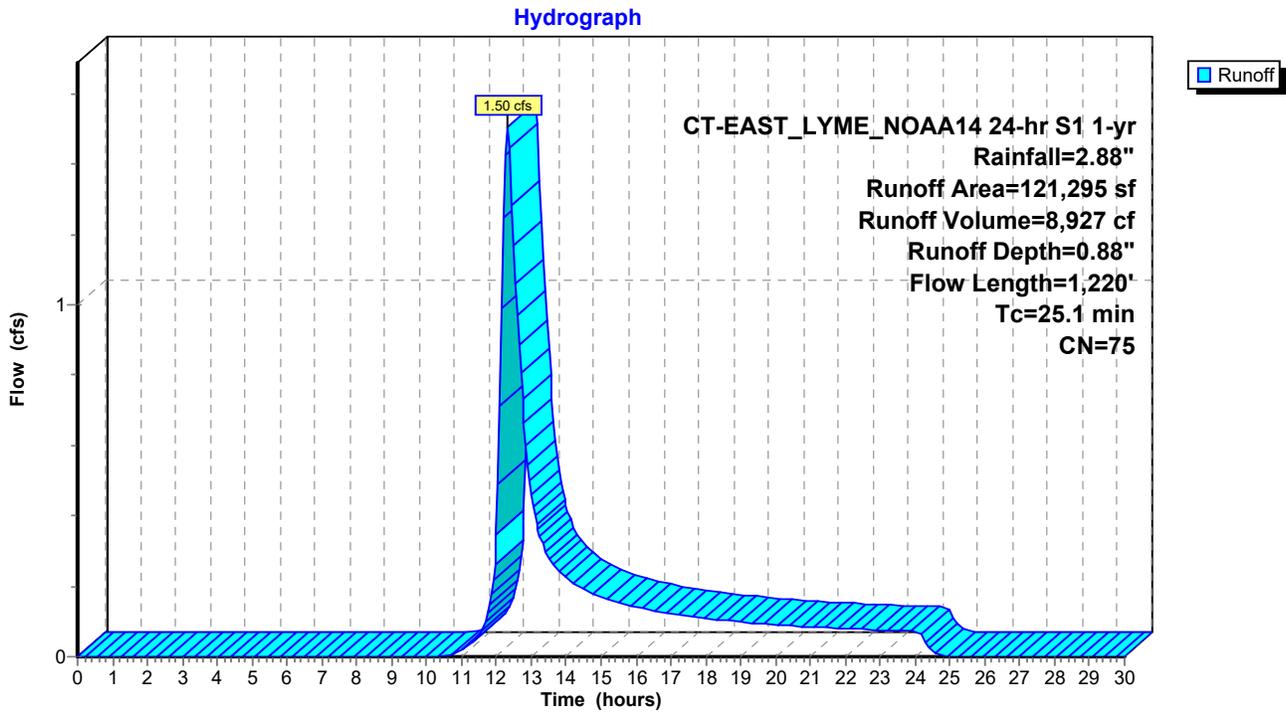
Routed to Link DP-2 : Frontage Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 1-yr Rainfall=2.88"

Area (sf)	CN	Description
23,430	61	Pasture/grassland/range, Good, HSG B
52,449	61	>75% Grass cover, Good, HSG B
35,803	98	Paved parking, HSG B
567	98	Paved parking, HSG A
8,668	96	Gravel surface, HSG B
378	39	>75% Grass cover, Good, HSG A
121,295	75	Weighted Average
84,925		70.02% Pervious Area
36,370		29.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
3.2	60	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.9	160	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
2.9	930	0.0100	5.26	6.46	Pipe Channel, Piping 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
25.1	1,220	Total			

Subcatchment PDA-200: PDA-200



Summary for Reach 1R: Grass Swale

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 0.03" for 1-yr event
 Inflow = 0.00 cfs @ 24.01 hrs, Volume= 136 cf
 Outflow = 0.00 cfs @ 24.34 hrs, Volume= 136 cf, Atten= 0%, Lag= 19.6 min
 Routed to Pond SB-LS : SB-LS

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.32 fps, Min. Travel Time= 16.1 min
 Avg. Velocity = 0.29 fps, Avg. Travel Time= 18.0 min

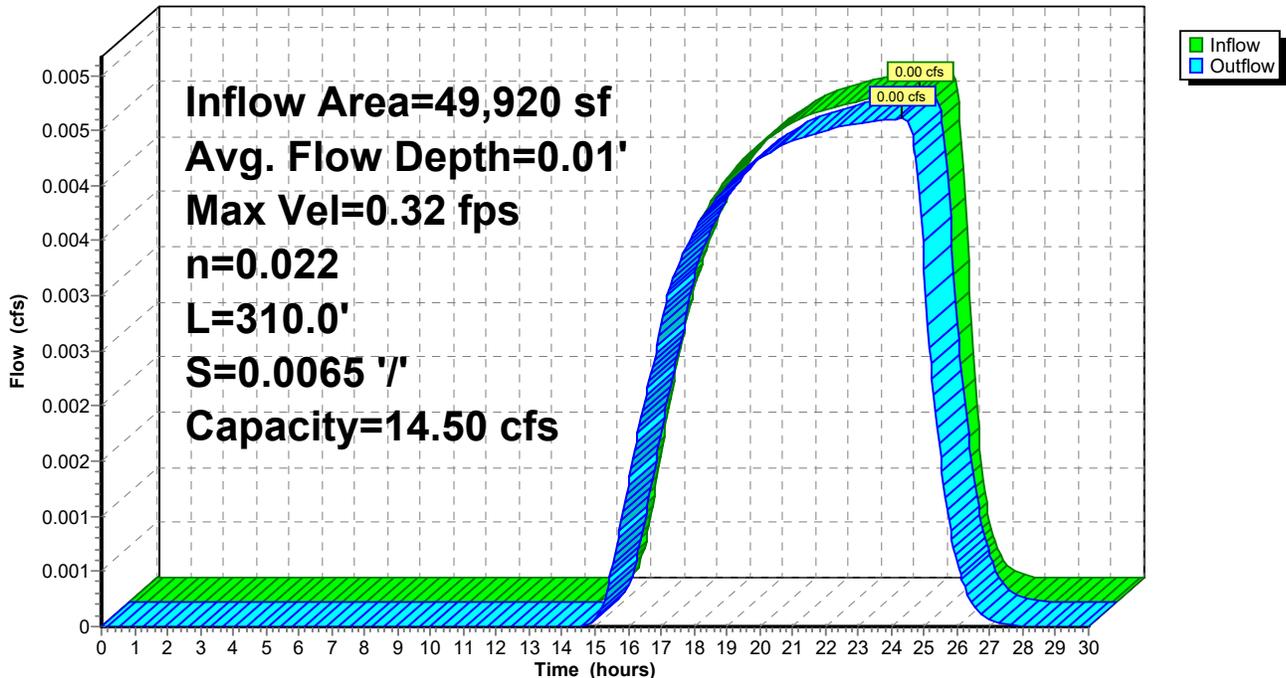
Peak Storage= 4 cf @ 24.08 hrs
 Average Depth at Peak Storage= 0.01' , Surface Width= 1.08'
 Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 14.50 cfs

1.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight
 Side Slope Z-value= 3.0 ' / ' Top Width= 7.00'
 Length= 310.0' Slope= 0.0065 ' / '
 Inlet Invert= 47.00', Outlet Invert= 45.00'



Reach 1R: Grass Swale

Hydrograph



Stage-Discharge for Reach 1R: Grass Swale

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
47.00	0.00	0.00	47.52	2.49	3.31
47.01	0.25	0.00	47.53	2.51	3.45
47.02	0.38	0.01	47.54	2.54	3.59
47.03	0.49	0.02	47.55	2.57	3.74
47.04	0.59	0.03	47.56	2.59	3.89
47.05	0.67	0.04	47.57	2.62	4.05
47.06	0.75	0.05	47.58	2.65	4.20
47.07	0.82	0.07	47.59	2.67	4.37
47.08	0.88	0.09	47.60	2.70	4.53
47.09	0.95	0.11	47.61	2.72	4.70
47.10	1.00	0.13	47.62	2.75	4.87
47.11	1.06	0.15	47.63	2.77	5.05
47.12	1.11	0.18	47.64	2.80	5.23
47.13	1.16	0.21	47.65	2.82	5.41
47.14	1.21	0.24	47.66	2.85	5.60
47.15	1.26	0.27	47.67	2.87	5.79
47.16	1.30	0.31	47.68	2.90	5.99
47.17	1.35	0.35	47.69	2.92	6.19
47.18	1.39	0.39	47.70	2.94	6.39
47.19	1.43	0.43	47.71	2.97	6.60
47.20	1.47	0.47	47.72	2.99	6.81
47.21	1.51	0.52	47.73	3.02	7.02
47.22	1.55	0.57	47.74	3.04	7.24
47.23	1.59	0.62	47.75	3.06	7.47
47.24	1.63	0.67	47.76	3.09	7.70
47.25	1.66	0.73	47.77	3.11	7.93
47.26	1.70	0.79	47.78	3.13	8.17
47.27	1.73	0.85	47.79	3.16	8.41
47.28	1.77	0.91	47.80	3.18	8.65
47.29	1.80	0.98	47.81	3.20	8.90
47.30	1.84	1.05	47.82	3.23	9.15
47.31	1.87	1.12	47.83	3.25	9.41
47.32	1.90	1.19	47.84	3.27	9.68
47.33	1.93	1.27	47.85	3.29	9.94
47.34	1.97	1.35	47.86	3.32	10.21
47.35	2.00	1.43	47.87	3.34	10.49
47.36	2.03	1.52	47.88	3.36	10.77
47.37	2.06	1.61	47.89	3.38	11.06
47.38	2.09	1.70	47.90	3.41	11.34
47.39	2.12	1.79	47.91	3.43	11.64
47.40	2.15	1.89	47.92	3.45	11.94
47.41	2.18	1.99	47.93	3.47	12.24
47.42	2.21	2.10	47.94	3.49	12.55
47.43	2.24	2.20	47.95	3.52	12.86
47.44	2.27	2.31	47.96	3.54	13.18
47.45	2.29	2.43	47.97	3.56	13.50
47.46	2.32	2.54	47.98	3.58	13.83
47.47	2.35	2.66	47.99	3.60	14.16
47.48	2.38	2.79	48.00	3.62	14.50
47.49	2.41	2.91			
47.50	2.43	3.04			
47.51	2.46	3.17			

Stage-Area-Storage for Reach 1R: Grass Swale

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
47.00	0.0	0	47.52	1.3	413
47.01	0.0	3	47.53	1.4	426
47.02	0.0	7	47.54	1.4	439
47.03	0.0	10	47.55	1.5	452
47.04	0.0	14	47.56	1.5	465
47.05	0.1	18	47.57	1.5	479
47.06	0.1	22	47.58	1.6	493
47.07	0.1	26	47.59	1.6	507
47.08	0.1	31	47.60	1.7	521
47.09	0.1	35	47.61	1.7	535
47.10	0.1	40	47.62	1.8	550
47.11	0.1	45	47.63	1.8	564
47.12	0.2	51	47.64	1.9	579
47.13	0.2	56	47.65	1.9	594
47.14	0.2	62	47.66	2.0	610
47.15	0.2	67	47.67	2.0	625
47.16	0.2	73	47.68	2.1	641
47.17	0.3	80	47.69	2.1	657
47.18	0.3	86	47.70	2.2	673
47.19	0.3	92	47.71	2.2	689
47.20	0.3	99	47.72	2.3	705
47.21	0.3	106	47.73	2.3	722
47.22	0.4	113	47.74	2.4	739
47.23	0.4	120	47.75	2.4	756
47.24	0.4	128	47.76	2.5	773
47.25	0.4	136	47.77	2.5	790
47.26	0.5	143	47.78	2.6	808
47.27	0.5	151	47.79	2.7	825
47.28	0.5	160	47.80	2.7	843
47.29	0.5	168	47.81	2.8	861
47.30	0.6	177	47.82	2.8	880
47.31	0.6	185	47.83	2.9	898
47.32	0.6	194	47.84	3.0	917
47.33	0.7	204	47.85	3.0	935
47.34	0.7	213	47.86	3.1	954
47.35	0.7	222	47.87	3.1	974
47.36	0.7	232	47.88	3.2	993
47.37	0.8	242	47.89	3.3	1,013
47.38	0.8	252	47.90	3.3	1,032
47.39	0.8	262	47.91	3.4	1,052
47.40	0.9	273	47.92	3.5	1,072
47.41	0.9	283	47.93	3.5	1,093
47.42	0.9	294	47.94	3.6	1,113
47.43	1.0	305	47.95	3.7	1,134
47.44	1.0	316	47.96	3.7	1,155
47.45	1.1	328	47.97	3.8	1,176
47.46	1.1	339	47.98	3.9	1,197
47.47	1.1	351	47.99	3.9	1,218
47.48	1.2	363	48.00	4.0	1,240
47.49	1.2	375			
47.50	1.3	388			
47.51	1.3	400			

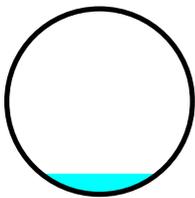
Summary for Reach 2R: 18" HDPE

Inflow Area = 219,734 sf, 97.37% Impervious, Inflow Depth = 0.34" for 1-yr event
 Inflow = 0.82 cfs @ 12.04 hrs, Volume= 6,181 cf
 Outflow = 0.75 cfs @ 12.17 hrs, Volume= 6,181 cf, Atten= 8%, Lag= 7.9 min
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.53 fps, Min. Travel Time= 4.1 min
 Avg. Velocity = 1.08 fps, Avg. Travel Time= 9.5 min

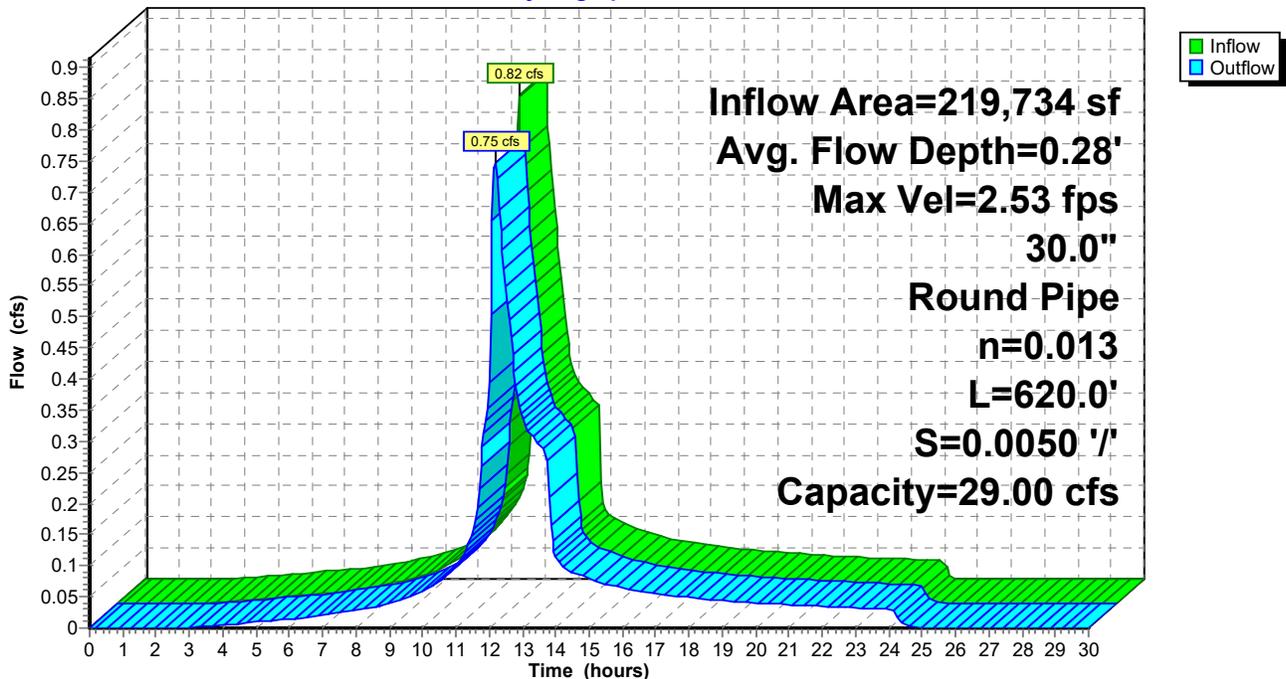
Peak Storage= 184 cf @ 12.11 hrs
 Average Depth at Peak Storage= 0.28' , Surface Width= 1.57'
 Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.00 cfs

30.0" Round Pipe
 n= 0.013
 Length= 620.0' Slope= 0.0050 '/'
 Inlet Invert= 48.10', Outlet Invert= 45.00'



Reach 2R: 18" HDPE

Hydrograph



Stage-Discharge for Reach 2R: 18" HDPE

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
48.10	0.00	0.00	49.14	5.43	10.50	50.18	6.73	29.38
48.12	0.42	0.00	49.16	5.48	10.86	50.20	6.73	29.61
48.14	0.71	0.01	49.18	5.53	11.24	50.22	6.72	29.83
48.16	0.93	0.03	49.20	5.58	11.61	50.24	6.71	30.04
48.18	1.13	0.05	49.22	5.63	11.99	50.26	6.71	30.23
48.20	1.31	0.09	49.24	5.67	12.37	50.28	6.70	30.41
48.22	1.48	0.13	49.26	5.72	12.75	50.30	6.68	30.58
48.24	1.63	0.18	49.28	5.76	13.14	50.32	6.67	30.72
48.26	1.78	0.24	49.30	5.81	13.52	50.34	6.65	30.85
48.28	1.92	0.30	49.32	5.85	13.91	50.36	6.63	30.96
48.30	2.06	0.38	49.34	5.89	14.31	50.38	6.61	31.06
48.32	2.18	0.46	49.36	5.93	14.70	50.40	6.59	31.13
48.34	2.31	0.56	49.38	5.97	15.09	50.42	6.56	31.17
48.36	2.43	0.66	49.40	6.01	15.49	50.44	6.53	31.19
48.38	2.55	0.77	49.42	6.04	15.89	50.46	6.50	31.18
48.40	2.66	0.89	49.44	6.08	16.29	50.48	6.46	31.15
48.42	2.77	1.02	49.46	6.11	16.69	50.50	6.42	31.07
48.44	2.87	1.15	49.48	6.15	17.09	50.52	6.37	30.94
48.46	2.98	1.30	49.50	6.18	17.49	50.54	6.31	30.75
48.48	3.08	1.45	49.52	6.22	17.89	50.56	6.23	30.48
48.50	3.18	1.61	49.54	6.25	18.29	50.58	6.12	29.98
48.52	3.27	1.78	49.56	6.28	18.69	50.60	5.91	29.00
48.54	3.37	1.96	49.58	6.31	19.09			
48.56	3.46	2.15	49.60	6.34	19.49			
48.58	3.55	2.34	49.62	6.36	19.88			
48.60	3.63	2.54	49.64	6.39	20.28			
48.62	3.72	2.75	49.66	6.42	20.67			
48.64	3.80	2.97	49.68	6.44	21.06			
48.66	3.88	3.19	49.70	6.47	21.45			
48.68	3.97	3.42	49.72	6.49	21.84			
48.70	4.04	3.66	49.74	6.51	22.23			
48.72	4.12	3.91	49.76	6.53	22.61			
48.74	4.20	4.17	49.78	6.55	22.99			
48.76	4.27	4.43	49.80	6.57	23.36			
48.78	4.34	4.69	49.82	6.59	23.73			
48.80	4.41	4.97	49.84	6.61	24.10			
48.82	4.48	5.25	49.86	6.62	24.46			
48.84	4.55	5.54	49.88	6.64	24.82			
48.86	4.62	5.83	49.90	6.65	25.17			
48.88	4.68	6.13	49.92	6.67	25.52			
48.90	4.75	6.43	49.94	6.68	25.86			
48.92	4.81	6.74	49.96	6.69	26.20			
48.94	4.87	7.06	49.98	6.70	26.53			
48.96	4.94	7.38	50.00	6.71	26.85			
48.98	5.00	7.71	50.02	6.72	27.17			
49.00	5.05	8.04	50.04	6.72	27.47			
49.02	5.11	8.38	50.06	6.73	27.77			
49.04	5.17	8.72	50.08	6.73	28.07			
49.06	5.22	9.07	50.10	6.73	28.35			
49.08	5.28	9.42	50.12	6.74	28.62			
49.10	5.33	9.77	50.14	6.74	28.89			
49.12	5.38	10.13	50.16	6.73	29.14			

Stage-Area-Storage for Reach 2R: 18" HDPE

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
48.10	0.0	0
48.15	0.0	15
48.20	0.1	41
48.25	0.1	75
48.30	0.2	114
48.35	0.3	158
48.40	0.3	207
48.45	0.4	259
48.50	0.5	314
48.55	0.6	373
48.60	0.7	433
48.65	0.8	496
48.70	0.9	562
48.75	1.0	629
48.80	1.1	698
48.85	1.2	768
48.90	1.4	840
48.95	1.5	912
49.00	1.6	986
49.05	1.7	1,061
49.10	1.8	1,137
49.15	2.0	1,213
49.20	2.1	1,290
49.25	2.2	1,367
49.30	2.3	1,444
49.35	2.5	1,522
49.40	2.6	1,599
49.45	2.7	1,677
49.50	2.8	1,754
49.55	3.0	1,830
49.60	3.1	1,907
49.65	3.2	1,982
49.70	3.3	2,057
49.75	3.4	2,131
49.80	3.6	2,204
49.85	3.7	2,276
49.90	3.8	2,346
49.95	3.9	2,415
50.00	4.0	2,482
50.05	4.1	2,547
50.10	4.2	2,610
50.15	4.3	2,671
50.20	4.4	2,729
50.25	4.5	2,784
50.30	4.6	2,837
50.35	4.7	2,885
50.40	4.7	2,929
50.45	4.8	2,969
50.50	4.8	3,003
50.55	4.9	3,029
50.60	4.9	3,043

Summary for Pond 3R: OCS-102 to MH-101

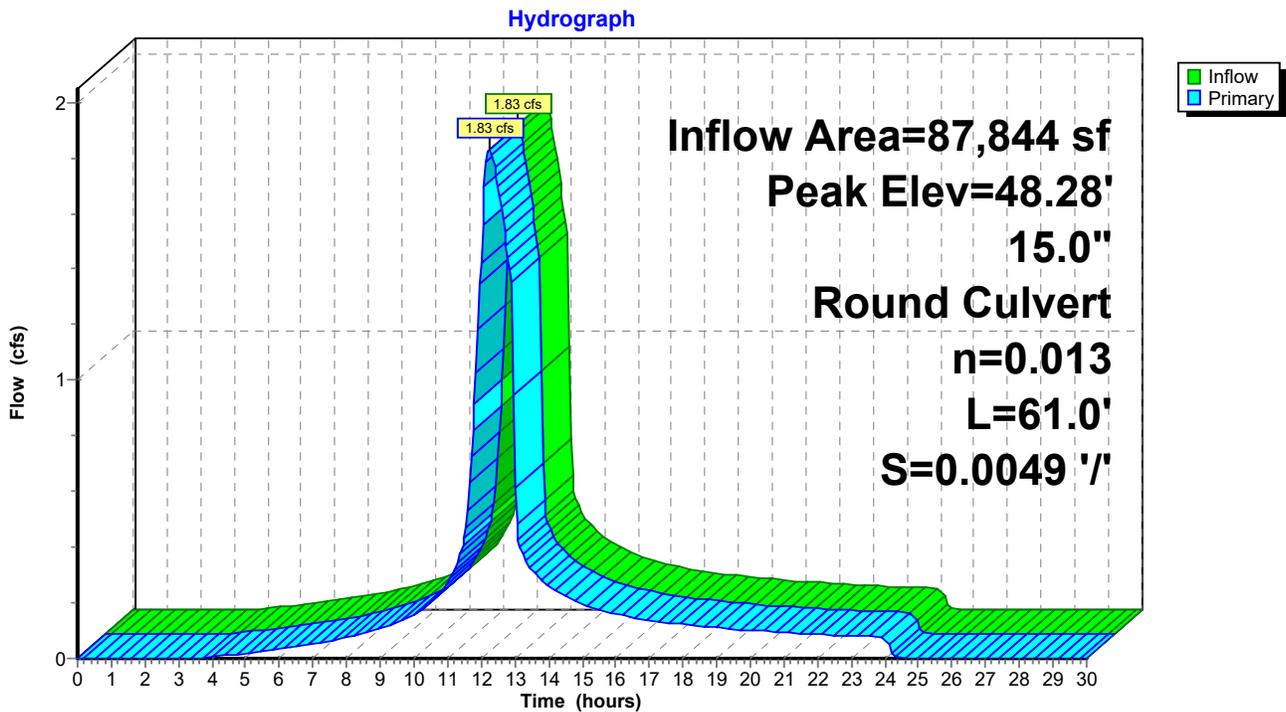
Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 2.14" for 1-yr event
 Inflow = 1.83 cfs @ 12.24 hrs, Volume= 15,652 cf
 Outflow = 1.83 cfs @ 12.24 hrs, Volume= 15,652 cf, Atten= 0%, Lag= 0.0 min
 Primary = 1.83 cfs @ 12.24 hrs, Volume= 15,652 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.28' @ 12.24 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	47.50'	15.0" Round Culvert L= 61.0' Ke= 0.500 Inlet / Outlet Invert= 47.50' / 47.20' S= 0.0049 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=1.83 cfs @ 12.24 hrs HW=48.28' (Free Discharge)
 ←1=Culvert (Barrel Controls 1.83 cfs @ 3.25 fps)

Pond 3R: OCS-102 to MH-101



Stage-Discharge for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.50	0.00	48.02	0.89	48.54	2.94
47.51	0.00	48.03	0.92	48.55	2.98
47.52	0.00	48.04	0.95	48.56	3.03
47.53	0.00	48.05	0.98	48.57	3.07
47.54	0.00	48.06	1.02	48.58	3.11
47.55	0.01	48.07	1.05	48.59	3.16
47.56	0.01	48.08	1.08	48.60	3.20
47.57	0.01	48.09	1.12	48.61	3.25
47.58	0.02	48.10	1.15	48.62	3.29
47.59	0.03	48.11	1.19	48.63	3.33
47.60	0.03	48.12	1.22	48.64	3.37
47.61	0.04	48.13	1.26	48.65	3.42
47.62	0.05	48.14	1.30	48.66	3.46
47.63	0.06	48.15	1.33	48.67	3.50
47.64	0.06	48.16	1.37	48.68	3.55
47.65	0.07	48.17	1.41	48.69	3.59
47.66	0.09	48.18	1.44	48.70	3.63
47.67	0.10	48.19	1.48	48.71	3.67
47.68	0.11	48.20	1.52	48.72	3.72
47.69	0.12	48.21	1.56	48.73	3.76
47.70	0.14	48.22	1.60	48.74	3.80
47.71	0.15	48.23	1.64	48.75	3.84
47.72	0.16	48.24	1.68		
47.73	0.18	48.25	1.72		
47.74	0.20	48.26	1.75		
47.75	0.21	48.27	1.79		
47.76	0.23	48.28	1.84		
47.77	0.25	48.29	1.88		
47.78	0.27	48.30	1.92		
47.79	0.29	48.31	1.96		
47.80	0.31	48.32	2.00		
47.81	0.33	48.33	2.04		
47.82	0.35	48.34	2.08		
47.83	0.37	48.35	2.12		
47.84	0.39	48.36	2.16		
47.85	0.42	48.37	2.21		
47.86	0.44	48.38	2.25		
47.87	0.46	48.39	2.29		
47.88	0.49	48.40	2.33		
47.89	0.51	48.41	2.38		
47.90	0.54	48.42	2.42		
47.91	0.57	48.43	2.46		
47.92	0.59	48.44	2.51		
47.93	0.62	48.45	2.55		
47.94	0.65	48.46	2.59		
47.95	0.68	48.47	2.64		
47.96	0.70	48.48	2.68		
47.97	0.73	48.49	2.72		
47.98	0.76	48.50	2.77		
47.99	0.79	48.51	2.81		
48.00	0.82	48.52	2.85		
48.01	0.86	48.53	2.90		

Stage-Area-Storage for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0	48.71	0
47.68	0	48.20	0	48.72	0
47.69	0	48.21	0	48.73	0
47.70	0	48.22	0	48.74	0
47.71	0	48.23	0	48.75	0
47.72	0	48.24	0		
47.73	0	48.25	0		
47.74	0	48.26	0		
47.75	0	48.27	0		
47.76	0	48.28	0		
47.77	0	48.29	0		
47.78	0	48.30	0		
47.79	0	48.31	0		
47.80	0	48.32	0		
47.81	0	48.33	0		
47.82	0	48.34	0		
47.83	0	48.35	0		
47.84	0	48.36	0		
47.85	0	48.37	0		
47.86	0	48.38	0		
47.87	0	48.39	0		
47.88	0	48.40	0		
47.89	0	48.41	0		
47.90	0	48.42	0		
47.91	0	48.43	0		
47.92	0	48.44	0		
47.93	0	48.45	0		
47.94	0	48.46	0		
47.95	0	48.47	0		
47.96	0	48.48	0		
47.97	0	48.49	0		
47.98	0	48.50	0		
47.99	0	48.51	0		
48.00	0	48.52	0		
48.01	0	48.53	0		

Summary for Pond 4R: MH-101 to MH-102

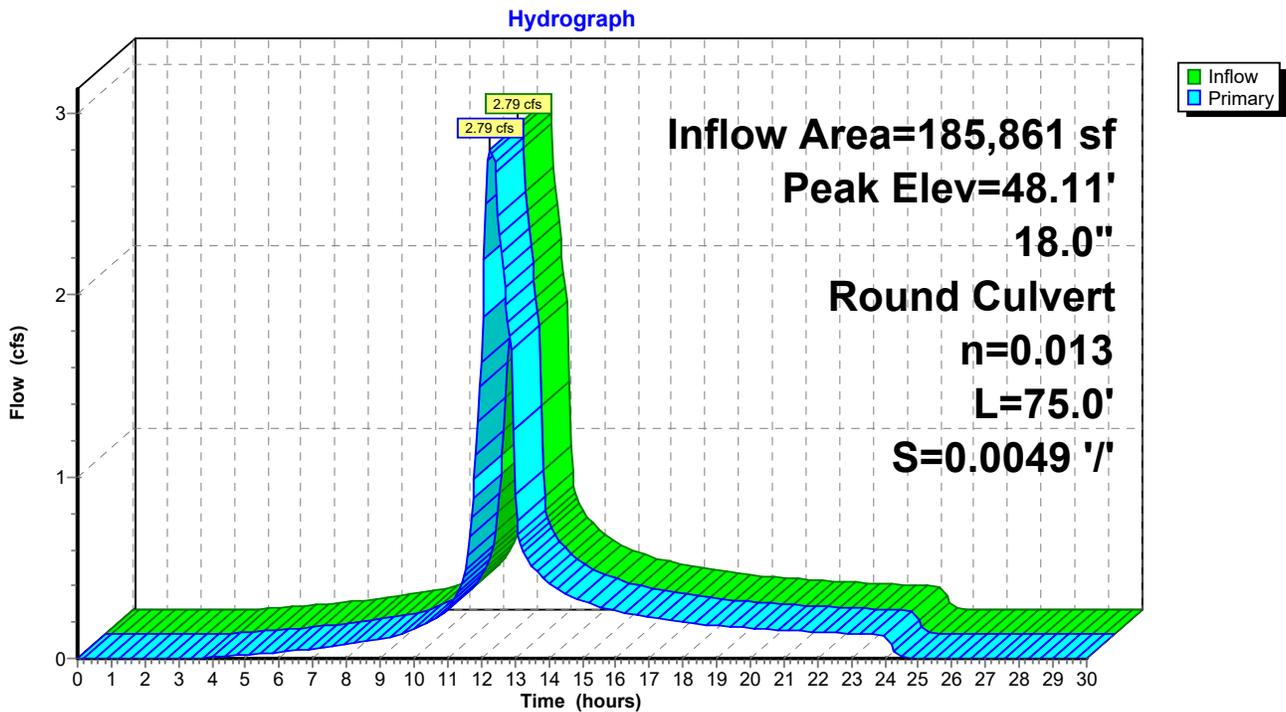
Inflow Area = 185,861 sf, 62.85% Impervious, Inflow Depth = 1.40" for 1-yr event
 Inflow = 2.79 cfs @ 12.27 hrs, Volume= 21,678 cf
 Outflow = 2.79 cfs @ 12.27 hrs, Volume= 21,678 cf, Atten= 0%, Lag= 0.0 min
 Primary = 2.79 cfs @ 12.27 hrs, Volume= 21,678 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.11' @ 12.27 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	47.20'	18.0" Round Culvert L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.83' S= 0.0049 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=2.79 cfs @ 12.27 hrs HW=48.11' (Free Discharge)
 ↳ **1=Culvert** (Barrel Controls 2.79 cfs @ 3.58 fps)

Pond 4R: MH-101 to MH-102



Stage-Discharge for Pond 4R: MH-101 to MH-102

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.20	0.00	47.72	1.01	48.24	3.52
47.21	0.00	47.73	1.05	48.25	3.57
47.22	0.00	47.74	1.09	48.26	3.63
47.23	0.00	47.75	1.13	48.27	3.69
47.24	0.00	47.76	1.17	48.28	3.74
47.25	0.01	47.77	1.21	48.29	3.80
47.26	0.01	47.78	1.25	48.30	3.86
47.27	0.02	47.79	1.29	48.31	3.91
47.28	0.02	47.80	1.33	48.32	3.97
47.29	0.03	47.81	1.37	48.33	4.03
47.30	0.04	47.82	1.41	48.34	4.09
47.31	0.04	47.83	1.45	48.35	4.14
47.32	0.05	47.84	1.50	48.36	4.20
47.33	0.06	47.85	1.54	48.37	4.26
47.34	0.07	47.86	1.58	48.38	4.32
47.35	0.08	47.87	1.63	48.39	4.37
47.36	0.10	47.88	1.67	48.40	4.43
47.37	0.11	47.89	1.72	48.41	4.49
47.38	0.12	47.90	1.76	48.42	4.55
47.39	0.14	47.91	1.81	48.43	4.61
47.40	0.15	47.92	1.86	48.44	4.66
47.41	0.17	47.93	1.90	48.45	4.72
47.42	0.18	47.94	1.95	48.46	4.78
47.43	0.20	47.95	2.00	48.47	4.84
47.44	0.22	47.96	2.05	48.48	4.90
47.45	0.24	47.97	2.09	48.49	4.95
47.46	0.26	47.98	2.14	48.50	5.01
47.47	0.28	47.99	2.19	48.51	5.07
47.48	0.30	48.00	2.24	48.52	5.13
47.49	0.32	48.01	2.29	48.53	5.18
47.50	0.35	48.02	2.34	48.54	5.24
47.51	0.37	48.03	2.39	48.55	5.30
47.52	0.39	48.04	2.44	48.56	5.36
47.53	0.42	48.05	2.49	48.57	5.41
47.54	0.44	48.06	2.54	48.58	5.47
47.55	0.47	48.07	2.60	48.59	5.53
47.56	0.50	48.08	2.65	48.60	5.59
47.57	0.52	48.09	2.70	48.61	5.64
47.58	0.55	48.10	2.75	48.62	5.70
47.59	0.58	48.11	2.81	48.63	5.76
47.60	0.61	48.12	2.86	48.64	5.81
47.61	0.64	48.13	2.91	48.65	5.87
47.62	0.67	48.14	2.97	48.66	5.92
47.63	0.70	48.15	3.02	48.67	5.98
47.64	0.74	48.16	3.08	48.68	6.04
47.65	0.77	48.17	3.13	48.69	6.09
47.66	0.80	48.18	3.18	48.70	6.15
47.67	0.84	48.19	3.24		
47.68	0.87	48.20	3.29		
47.69	0.91	48.21	3.35		
47.70	0.94	48.22	3.41		
47.71	0.98	48.23	3.46		

Stage-Area-Storage for Pond 4R: MH-101 to MH-102

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0	48.34	0
47.31	0	47.83	0	48.35	0
47.32	0	47.84	0	48.36	0
47.33	0	47.85	0	48.37	0
47.34	0	47.86	0	48.38	0
47.35	0	47.87	0	48.39	0
47.36	0	47.88	0	48.40	0
47.37	0	47.89	0	48.41	0
47.38	0	47.90	0	48.42	0
47.39	0	47.91	0	48.43	0
47.40	0	47.92	0	48.44	0
47.41	0	47.93	0	48.45	0
47.42	0	47.94	0	48.46	0
47.43	0	47.95	0	48.47	0
47.44	0	47.96	0	48.48	0
47.45	0	47.97	0	48.49	0
47.46	0	47.98	0	48.50	0
47.47	0	47.99	0	48.51	0
47.48	0	48.00	0	48.52	0
47.49	0	48.01	0	48.53	0
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0		
47.68	0	48.20	0		
47.69	0	48.21	0		
47.70	0	48.22	0		
47.71	0	48.23	0		

Summary for Pond 5R: MH-102 to MH-103

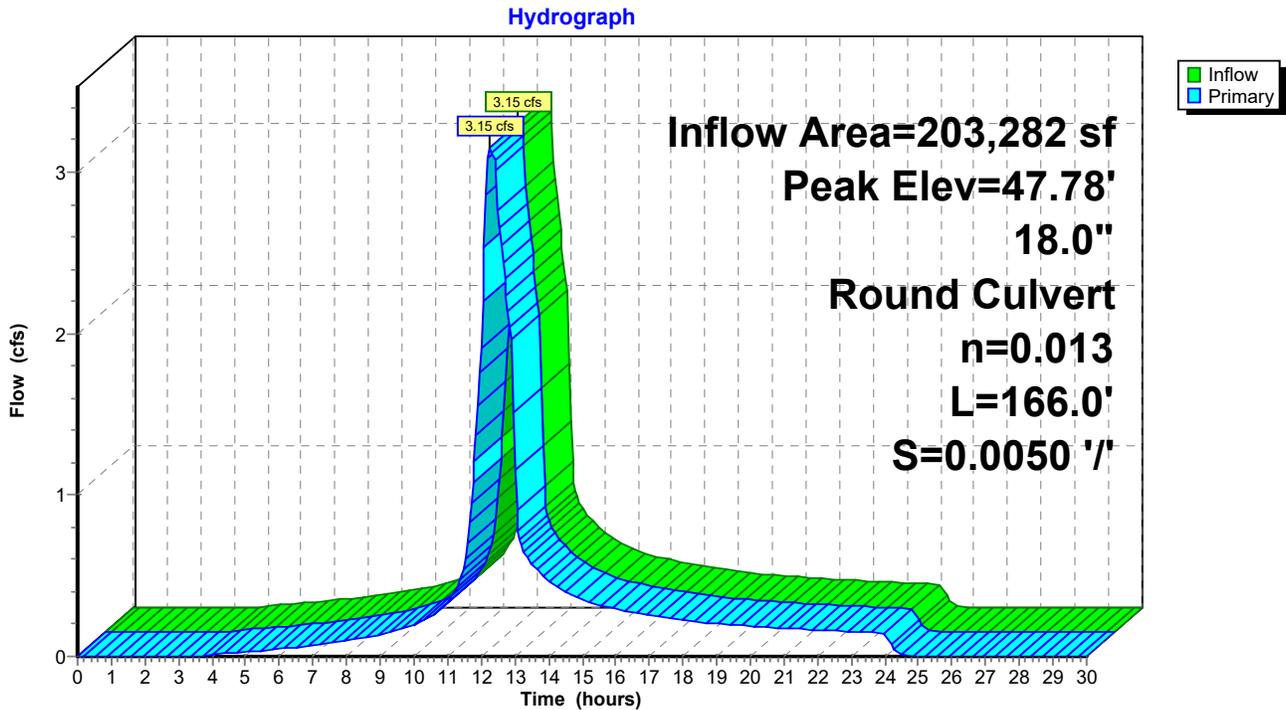
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 1.48" for 1-yr event
 Inflow = 3.15 cfs @ 12.27 hrs, Volume= 25,063 cf
 Outflow = 3.15 cfs @ 12.27 hrs, Volume= 25,063 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.15 cfs @ 12.27 hrs, Volume= 25,063 cf
 Routed to Pond 6R : MH-103 to FES-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.78' @ 12.27 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.83'	18.0" Round Culvert L= 166.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 46.83' / 46.00' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=3.15 cfs @ 12.27 hrs HW=47.78' (Free Discharge)
 ↑1=Culvert (Barrel Controls 3.15 cfs @ 3.83 fps)

Pond 5R: MH-102 to MH-103



Stage-Discharge for Pond 5R: MH-102 to MH-103

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.83	0.00	47.35	1.05	47.87	3.69
46.84	0.00	47.36	1.09	47.88	3.75
46.85	0.00	47.37	1.13	47.89	3.81
46.86	0.00	47.38	1.17	47.90	3.87
46.87	0.00	47.39	1.22	47.91	3.93
46.88	0.01	47.40	1.26	47.92	3.99
46.89	0.01	47.41	1.30	47.93	4.05
46.90	0.02	47.42	1.34	47.94	4.11
46.91	0.02	47.43	1.39	47.95	4.17
46.92	0.03	47.44	1.43	47.96	4.22
46.93	0.04	47.45	1.47	47.97	4.28
46.94	0.04	47.46	1.52	47.98	4.34
46.95	0.05	47.47	1.56	47.99	4.40
46.96	0.06	47.48	1.61	48.00	4.46
46.97	0.07	47.49	1.66	48.01	4.52
46.98	0.08	47.50	1.70	48.02	4.58
46.99	0.10	47.51	1.75	48.03	4.64
47.00	0.11	47.52	1.80	48.04	4.70
47.01	0.12	47.53	1.85	48.05	4.76
47.02	0.14	47.54	1.89	48.06	4.82
47.03	0.15	47.55	1.94	48.07	4.88
47.04	0.17	47.56	1.99	48.08	4.94
47.05	0.19	47.57	2.04	48.09	5.00
47.06	0.21	47.58	2.09	48.10	5.06
47.07	0.22	47.59	2.14	48.11	5.12
47.08	0.24	47.60	2.20	48.12	5.18
47.09	0.26	47.61	2.25	48.13	5.24
47.10	0.29	47.62	2.30	48.14	5.29
47.11	0.31	47.63	2.35	48.15	5.35
47.12	0.33	47.64	2.40	48.16	5.41
47.13	0.35	47.65	2.46	48.17	5.47
47.14	0.38	47.66	2.51	48.18	5.53
47.15	0.40	47.67	2.56	48.19	5.59
47.16	0.43	47.68	2.62	48.20	5.64
47.17	0.46	47.69	2.67	48.21	5.70
47.18	0.48	47.70	2.73	48.22	5.76
47.19	0.51	47.71	2.78	48.23	5.82
47.20	0.54	47.72	2.84	48.24	5.87
47.21	0.57	47.73	2.89	48.25	5.93
47.22	0.60	47.74	2.95	48.26	5.99
47.23	0.63	47.75	3.00	48.27	6.04
47.24	0.66	47.76	3.06	48.28	6.10
47.25	0.69	47.77	3.12	48.29	6.15
47.26	0.73	47.78	3.17	48.30	6.21
47.27	0.76	47.79	3.23	48.31	6.26
47.28	0.80	47.80	3.29	48.32	6.32
47.29	0.83	47.81	3.34	48.33	6.37
47.30	0.87	47.82	3.40		
47.31	0.90	47.83	3.46		
47.32	0.94	47.84	3.52		
47.33	0.98	47.85	3.58		
47.34	1.02	47.86	3.63		

Stage-Area-Storage for Pond 5R: MH-102 to MH-103

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.83	0	47.35	0	47.87	0
46.84	0	47.36	0	47.88	0
46.85	0	47.37	0	47.89	0
46.86	0	47.38	0	47.90	0
46.87	0	47.39	0	47.91	0
46.88	0	47.40	0	47.92	0
46.89	0	47.41	0	47.93	0
46.90	0	47.42	0	47.94	0
46.91	0	47.43	0	47.95	0
46.92	0	47.44	0	47.96	0
46.93	0	47.45	0	47.97	0
46.94	0	47.46	0	47.98	0
46.95	0	47.47	0	47.99	0
46.96	0	47.48	0	48.00	0
46.97	0	47.49	0	48.01	0
46.98	0	47.50	0	48.02	0
46.99	0	47.51	0	48.03	0
47.00	0	47.52	0	48.04	0
47.01	0	47.53	0	48.05	0
47.02	0	47.54	0	48.06	0
47.03	0	47.55	0	48.07	0
47.04	0	47.56	0	48.08	0
47.05	0	47.57	0	48.09	0
47.06	0	47.58	0	48.10	0
47.07	0	47.59	0	48.11	0
47.08	0	47.60	0	48.12	0
47.09	0	47.61	0	48.13	0
47.10	0	47.62	0	48.14	0
47.11	0	47.63	0	48.15	0
47.12	0	47.64	0	48.16	0
47.13	0	47.65	0	48.17	0
47.14	0	47.66	0	48.18	0
47.15	0	47.67	0	48.19	0
47.16	0	47.68	0	48.20	0
47.17	0	47.69	0	48.21	0
47.18	0	47.70	0	48.22	0
47.19	0	47.71	0	48.23	0
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0		
47.31	0	47.83	0		
47.32	0	47.84	0		
47.33	0	47.85	0		
47.34	0	47.86	0		

Summary for Pond 6R: MH-103 to FES-101

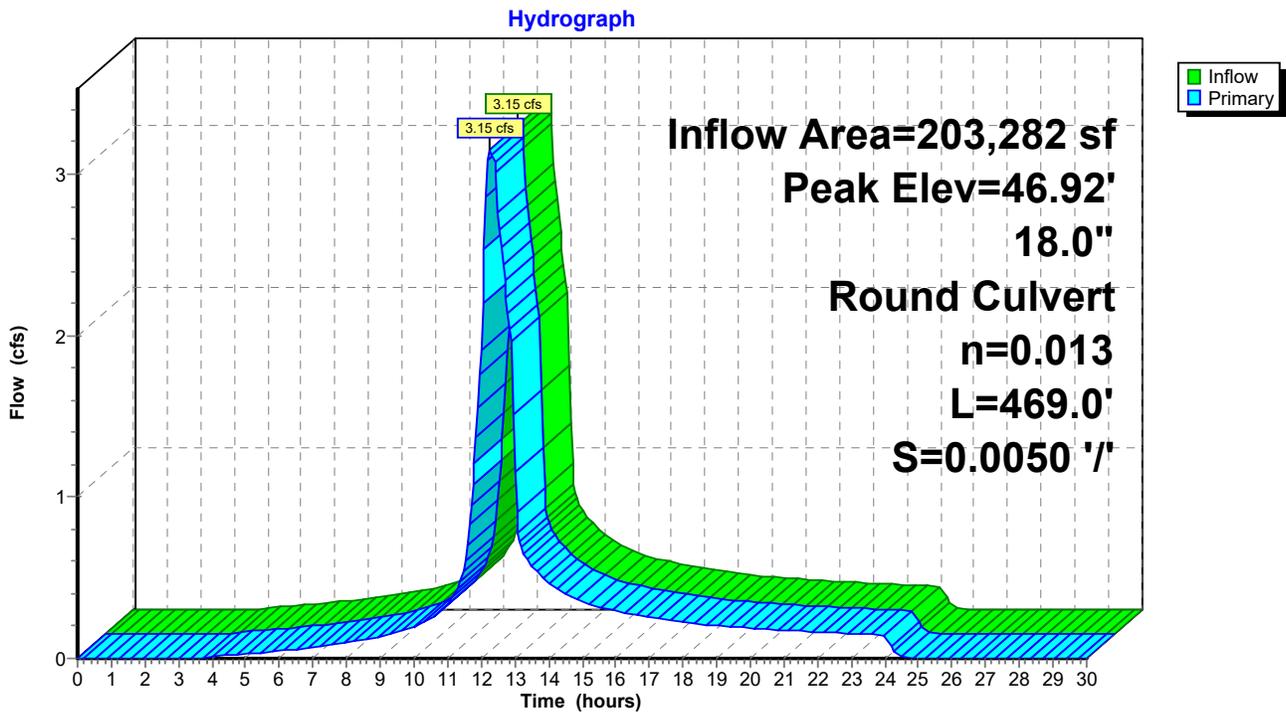
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 1.48" for 1-yr event
 Inflow = 3.15 cfs @ 12.27 hrs, Volume= 25,063 cf
 Outflow = 3.15 cfs @ 12.27 hrs, Volume= 25,063 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.15 cfs @ 12.27 hrs, Volume= 25,063 cf
 Routed to Pond P-109 : SWMB P-109

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 46.92' @ 12.27 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.00'	18.0" Round Culvert L= 469.0' Ke= 0.500 Inlet / Outlet Invert= 46.00' / 43.65' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=3.14 cfs @ 12.27 hrs HW=46.92' (Free Discharge)
 ↳ **1=Culvert** (Barrel Controls 3.14 cfs @ 3.94 fps)

Pond 6R: MH-103 to FES-101



Stage-Discharge for Pond 6R: MH-103 to FES-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.00	0.00	46.52	1.08	47.04	3.85
46.01	0.00	46.53	1.12	47.05	3.91
46.02	0.00	46.54	1.16	47.06	3.97
46.03	0.00	46.55	1.21	47.07	4.03
46.04	0.00	46.56	1.25	47.08	4.09
46.05	0.01	46.57	1.29	47.09	4.15
46.06	0.01	46.58	1.34	47.10	4.21
46.07	0.02	46.59	1.38	47.11	4.28
46.08	0.02	46.60	1.43	47.12	4.34
46.09	0.03	46.61	1.47	47.13	4.40
46.10	0.04	46.62	1.52	47.14	4.46
46.11	0.04	46.63	1.57	47.15	4.52
46.12	0.05	46.64	1.61	47.16	4.59
46.13	0.06	46.65	1.66	47.17	4.65
46.14	0.07	46.66	1.71	47.18	4.71
46.15	0.08	46.67	1.76	47.19	4.77
46.16	0.10	46.68	1.81	47.20	4.83
46.17	0.11	46.69	1.86	47.21	4.89
46.18	0.12	46.70	1.91	47.22	4.96
46.19	0.14	46.71	1.96	47.23	5.02
46.20	0.15	46.72	2.01	47.24	5.08
46.21	0.17	46.73	2.06	47.25	5.14
46.22	0.19	46.74	2.11	47.26	5.20
46.23	0.21	46.75	2.17	47.27	5.26
46.24	0.23	46.76	2.22	47.28	5.32
46.25	0.25	46.77	2.27	47.29	5.38
46.26	0.27	46.78	2.33	47.30	5.44
46.27	0.29	46.79	2.38	47.31	5.50
46.28	0.31	46.80	2.44	47.32	5.56
46.29	0.33	46.81	2.49	47.33	5.62
46.30	0.36	46.82	2.55	47.34	5.68
46.31	0.38	46.83	2.60	47.35	5.74
46.32	0.41	46.84	2.66	47.36	5.80
46.33	0.44	46.85	2.72	47.37	5.86
46.34	0.46	46.86	2.77	47.38	5.92
46.35	0.49	46.87	2.83	47.39	5.98
46.36	0.52	46.88	2.89	47.40	6.03
46.37	0.55	46.89	2.95	47.41	6.09
46.38	0.58	46.90	3.01	47.42	6.15
46.39	0.61	46.91	3.06	47.43	6.20
46.40	0.64	46.92	3.12	47.44	6.26
46.41	0.68	46.93	3.18	47.45	6.32
46.42	0.71	46.94	3.24	47.46	6.37
46.43	0.74	46.95	3.30	47.47	6.43
46.44	0.78	46.96	3.36	47.48	6.48
46.45	0.81	46.97	3.42	47.49	6.53
46.46	0.85	46.98	3.48	47.50	6.59
46.47	0.89	46.99	3.54		
46.48	0.92	47.00	3.60		
46.49	0.96	47.01	3.66		
46.50	1.00	47.02	3.72		
46.51	1.04	47.03	3.78		

Stage-Area-Storage for Pond 6R: MH-103 to FES-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.00	0	46.52	0	47.04	0
46.01	0	46.53	0	47.05	0
46.02	0	46.54	0	47.06	0
46.03	0	46.55	0	47.07	0
46.04	0	46.56	0	47.08	0
46.05	0	46.57	0	47.09	0
46.06	0	46.58	0	47.10	0
46.07	0	46.59	0	47.11	0
46.08	0	46.60	0	47.12	0
46.09	0	46.61	0	47.13	0
46.10	0	46.62	0	47.14	0
46.11	0	46.63	0	47.15	0
46.12	0	46.64	0	47.16	0
46.13	0	46.65	0	47.17	0
46.14	0	46.66	0	47.18	0
46.15	0	46.67	0	47.19	0
46.16	0	46.68	0	47.20	0
46.17	0	46.69	0	47.21	0
46.18	0	46.70	0	47.22	0
46.19	0	46.71	0	47.23	0
46.20	0	46.72	0	47.24	0
46.21	0	46.73	0	47.25	0
46.22	0	46.74	0	47.26	0
46.23	0	46.75	0	47.27	0
46.24	0	46.76	0	47.28	0
46.25	0	46.77	0	47.29	0
46.26	0	46.78	0	47.30	0
46.27	0	46.79	0	47.31	0
46.28	0	46.80	0	47.32	0
46.29	0	46.81	0	47.33	0
46.30	0	46.82	0	47.34	0
46.31	0	46.83	0	47.35	0
46.32	0	46.84	0	47.36	0
46.33	0	46.85	0	47.37	0
46.34	0	46.86	0	47.38	0
46.35	0	46.87	0	47.39	0
46.36	0	46.88	0	47.40	0
46.37	0	46.89	0	47.41	0
46.38	0	46.90	0	47.42	0
46.39	0	46.91	0	47.43	0
46.40	0	46.92	0	47.44	0
46.41	0	46.93	0	47.45	0
46.42	0	46.94	0	47.46	0
46.43	0	46.95	0	47.47	0
46.44	0	46.96	0	47.48	0
46.45	0	46.97	0	47.49	0
46.46	0	46.98	0	47.50	0
46.47	0	46.99	0		
46.48	0	47.00	0		
46.49	0	47.01	0		
46.50	0	47.02	0		
46.51	0	47.03	0		

Summary for Pond P-101: SWMB P-101

Inflow Area = 98,017 sf, 42.31% Impervious, Inflow Depth = 0.74" for 1-yr event
 Inflow = 1.06 cfs @ 12.26 hrs, Volume= 6,025 cf
 Outflow = 0.96 cfs @ 12.34 hrs, Volume= 6,025 cf, Atten= 9%, Lag= 4.7 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Pond 4R : MH-101 to MH-102
 Secondary = 0.96 cfs @ 12.34 hrs, Volume= 6,025 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.43' @ 12.34 hrs Surf.Area= 8,124 sf Storage= 111 cf

Plug-Flow detention time= 1.4 min calculated for 6,015 cf (100% of inflow)
 Center-of-Mass det. time= 1.4 min (923.5 - 922.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.40'	5,666 cf	84.83'W x 95.76'L x 2.33'H Field A 18,955 cf Overall - 4,791 cf Embedded = 14,164 cf x 40.0% Voids
#2A	47.90'	4,791 cf	ADS_StormTech SC-310 +Cap x 325 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 325 Chambers in 25 Rows
		10,457 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.10'	4.0' long x 0.73' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.40'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.10'

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.40' (Free Discharge)

- ↑1=Low Level Orifice (Controls 0.00 cfs)
- ↑2=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

Secondary OutFlow Max=0.96 cfs @ 12.34 hrs HW=47.43' (Free Discharge)

- ↑3=Underdrain (Controls 0.96 cfs)

Pond P-101: SWMB P-101 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

25 Rows x 34.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 84.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

325 Chambers x 14.7 cf = 4,791.1 cf Chamber Storage

18,955.2 cf Field - 4,791.1 cf Chambers = 14,164.0 cf Stone x 40.0% Voids = 5,665.6 cf Stone Storage

Chamber Storage + Stone Storage = 10,456.7 cf = 0.240 af

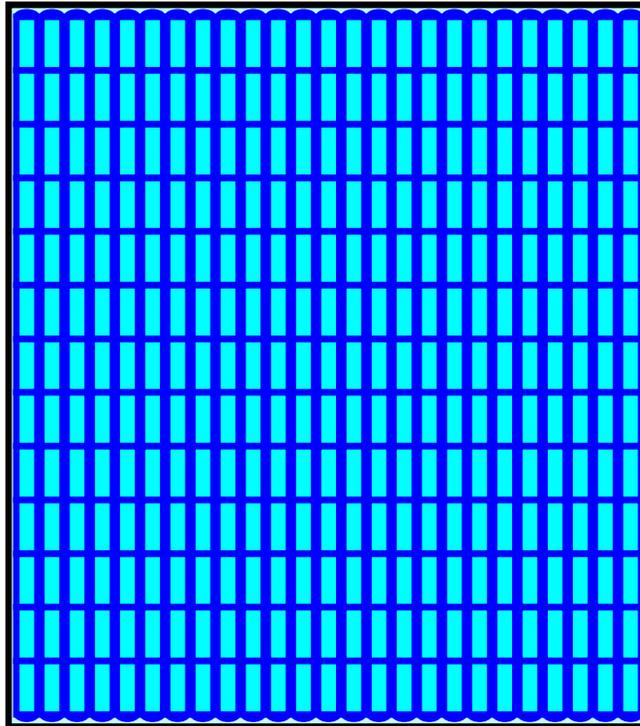
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 84.83' x 2.33'

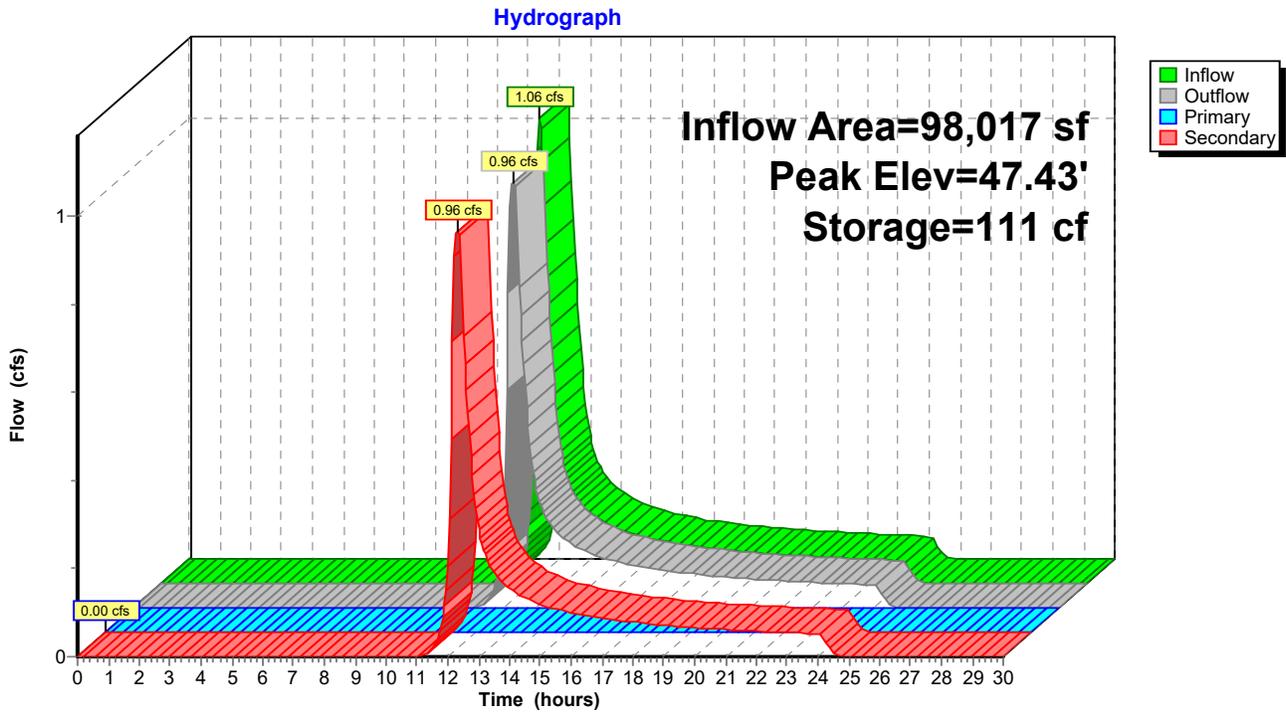
325 Chambers

702.0 cy Field

524.6 cy Stone



Pond P-101: SWMB P-101



Stage-Discharge for Pond P-101: SWMB P-101

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.40	0.00	0.00	0.00
47.45	0.98	0.00	0.98
47.50	1.01	0.00	1.01
47.55	1.05	0.00	1.05
47.60	1.08	0.00	1.08
47.65	1.12	0.00	1.12
47.70	1.16	0.00	1.16
47.75	1.19	0.00	1.19
47.80	1.23	0.00	1.23
47.85	1.27	0.00	1.27
47.90	1.30	0.00	1.30
47.95	1.34	0.00	1.34
48.00	1.37	0.00	1.37
48.05	1.41	0.00	1.41
48.10	1.45	0.00	1.45
48.15	1.48	0.00	1.48
48.20	1.52	0.00	1.52
48.25	1.56	0.00	1.56
48.30	1.59	0.00	1.59
48.35	1.63	0.00	1.63
48.40	1.66	0.00	1.66
48.45	1.70	0.00	1.70
48.50	1.74	0.00	1.74
48.55	1.78	0.01	1.77
48.60	1.84	0.03	1.81
48.65	1.91	0.07	1.84
48.70	1.99	0.11	1.88
48.75	2.08	0.17	1.92
48.80	2.18	0.23	1.95
48.85	2.28	0.30	1.99
48.90	2.39	0.36	2.03
48.95	2.49	0.43	2.06
49.00	2.57	0.47	2.10
49.05	2.65	0.52	2.13
49.10	2.73	0.56	2.17
49.15	2.95	0.74	2.21
49.20	3.29	1.05	2.24
49.25	3.71	1.44	2.28
49.30	4.20	1.89	2.31
49.35	4.74	2.39	2.35
49.40	5.34	2.95	2.39
49.45	5.98	3.56	2.42
49.50	6.66	4.21	2.46
49.55	7.39	4.90	2.50
49.60	8.16	5.63	2.53
49.65	8.97	6.40	2.57
49.70	9.82	7.21	2.60
49.75	10.70	8.06	2.64
49.80	11.61	8.94	2.68

Stage-Area-Storage for Pond P-101: SWMB P-101

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.40	8,124	0
47.45	8,124	162
47.50	8,124	325
47.55	8,124	487
47.60	8,124	650
47.65	8,124	812
47.70	8,124	975
47.75	8,124	1,137
47.80	8,124	1,300
47.85	8,124	1,462
47.90	8,124	1,625
47.95	8,124	1,954
48.00	8,124	2,282
48.05	8,124	2,609
48.10	8,124	2,933
48.15	8,124	3,254
48.20	8,124	3,572
48.25	8,124	3,887
48.30	8,124	4,199
48.35	8,124	4,506
48.40	8,124	4,810
48.45	8,124	5,109
48.50	8,124	5,403
48.55	8,124	5,694
48.60	8,124	5,979
48.65	8,124	6,258
48.70	8,124	6,531
48.75	8,124	6,797
48.80	8,124	7,055
48.85	8,124	7,306
48.90	8,124	7,546
48.95	8,124	7,774
49.00	8,124	7,987
49.05	8,124	8,185
49.10	8,124	8,372
49.15	8,124	8,550
49.20	8,124	8,722
49.25	8,124	8,886
49.30	8,124	9,049
49.35	8,124	9,211
49.40	8,124	9,374
49.45	8,124	9,536
49.50	8,124	9,699
49.55	8,124	9,861
49.60	8,124	10,023
49.65	8,124	10,186
49.70	8,124	10,348
49.75	8,124	10,457
49.80	8,124	10,457

Summary for Pond P-102: SWMB P-102

Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 2.14" for 1-yr event
 Inflow = 5.07 cfs @ 12.05 hrs, Volume= 15,662 cf
 Outflow = 1.83 cfs @ 12.24 hrs, Volume= 15,652 cf, Atten= 64%, Lag= 11.3 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Pond 3R : OCS-102 to MH-101
 Secondary = 1.83 cfs @ 12.24 hrs, Volume= 15,652 cf
 Routed to Pond 3R : OCS-102 to MH-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 47.98' @ 12.24 hrs Surf.Area= 10,996 sf Storage= 2,120 cf

Plug-Flow detention time= 7.4 min calculated for 15,626 cf (100% of inflow)
 Center-of-Mass det. time= 7.0 min (816.3 - 809.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.50'	7,657 cf	114.83'W x 95.76'L x 2.33'H Field A 25,658 cf Overall - 6,516 cf Embedded = 19,142 cf x 40.0% Voids
#2A	48.00'	6,516 cf	ADS_StormTech SC-310 +Cap x 442 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 442 Chambers in 34 Rows
		14,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	4.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.15'	4.0' long x 3.90' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.50'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.40'

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.50' (Free Discharge)

- ↑1=Low Level Orifice (Controls 0.00 cfs)
- ↑2=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

Secondary OutFlow Max=1.83 cfs @ 12.24 hrs HW=47.98' (Free Discharge)

- ↑3=Underdrain (Controls 1.83 cfs)

Pond P-102: SWMB P-102 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

34 Rows x 34.0" Wide + 6.0" Spacing x 33 + 12.0" Side Stone x 2 = 114.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

442 Chambers x 14.7 cf = 6,515.9 cf Chamber Storage

25,658.4 cf Field - 6,515.9 cf Chambers = 19,142.4 cf Stone x 40.0% Voids = 7,657.0 cf Stone Storage

Chamber Storage + Stone Storage = 14,172.9 cf = 0.325 af

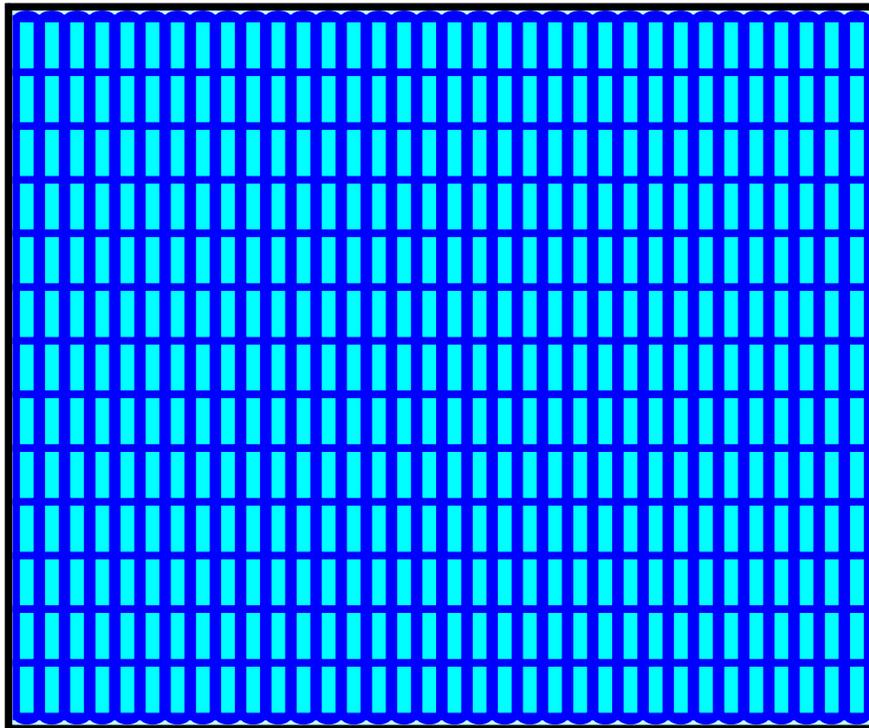
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 114.83' x 2.33'

442 Chambers

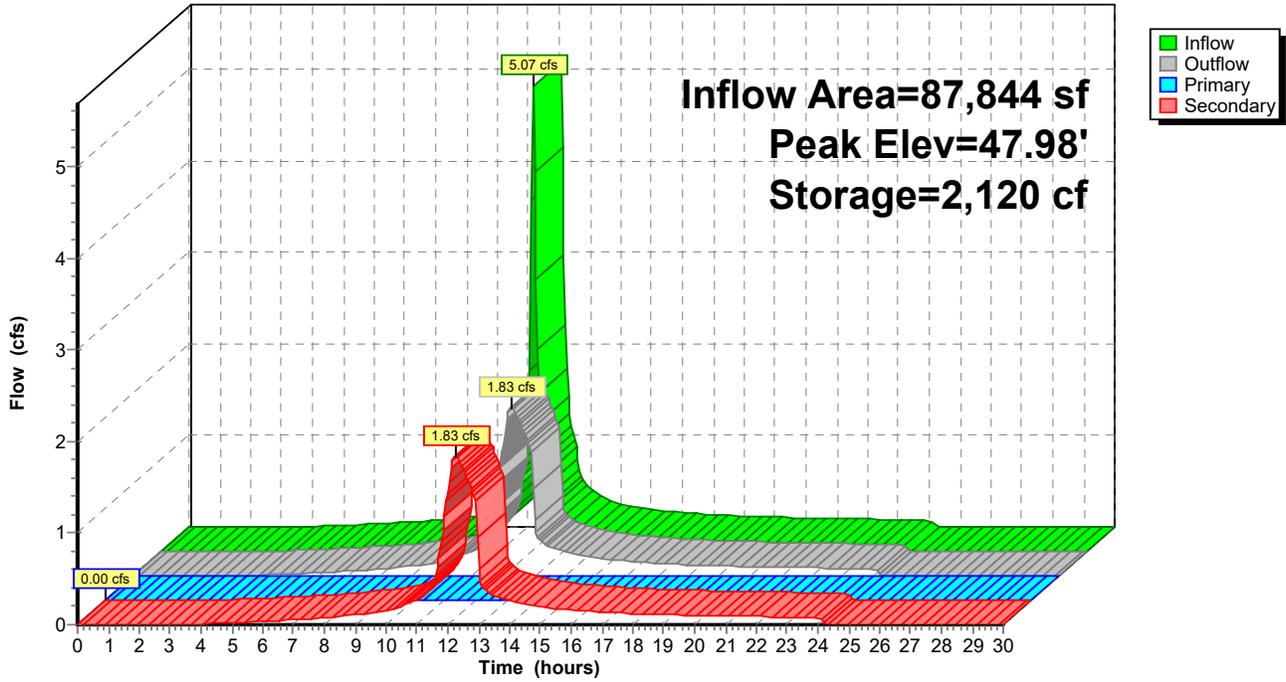
950.3 cy Field

709.0 cy Stone



Pond P-102: SWMB P-102

Hydrograph



Stage-Discharge for Pond P-102: SWMB P-102

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.50	0.00	0.00	0.00	52.70	108.50	101.21	7.29
47.60	1.39	0.00	1.39	52.80	113.09	105.68	7.41
47.70	1.50	0.00	1.50	52.90	117.74	110.22	7.52
47.80	1.62	0.00	1.62	53.00	122.46	114.82	7.64
47.90	1.74	0.00	1.74				
48.00	1.85	0.00	1.85				
48.10	1.97	0.00	1.97				
48.20	2.08	0.00	2.08				
48.30	2.20	0.00	2.20				
48.40	2.31	0.00	2.31				
48.50	2.43	0.00	2.43				
48.60	2.57	0.02	2.55				
48.70	2.74	0.08	2.66				
48.80	2.93	0.15	2.78				
48.90	3.10	0.20	2.89				
49.00	3.25	0.24	3.01				
49.10	3.40	0.28	3.12				
49.20	3.69	0.45	3.24				
49.30	4.46	1.10	3.36				
49.40	5.49	2.02	3.47				
49.50	6.73	3.15	3.59				
49.60	8.16	4.46	3.70				
49.70	9.75	5.93	3.82				
49.80	11.49	7.56	3.93				
49.90	13.38	9.33	4.05				
50.00	15.39	11.23	4.17				
50.10	17.54	13.26	4.28				
50.20	19.81	15.41	4.40				
50.30	22.20	17.68	4.51				
50.40	24.70	20.07	4.63				
50.50	27.32	22.57	4.74				
50.60	30.04	25.18	4.86				
50.70	32.87	27.90	4.98				
50.80	35.81	30.72	5.09				
50.90	38.84	33.64	5.21				
51.00	41.98	36.65	5.32				
51.10	45.21	39.77	5.44				
51.20	48.53	42.98	5.55				
51.30	51.95	46.28	5.67				
51.40	55.46	49.68	5.79				
51.50	59.06	53.16	5.90				
51.60	62.74	56.73	6.02				
51.70	66.51	60.38	6.13				
51.80	70.37	64.12	6.25				
51.90	74.30	67.94	6.36				
52.00	78.31	71.83	6.48				
52.10	82.41	75.81	6.60				
52.20	86.57	79.86	6.71				
52.30	90.82	83.99	6.83				
52.40	95.13	88.19	6.94				
52.50	99.52	92.46	7.06				
52.60	103.98	96.80	7.17				

Stage-Area-Storage for Pond P-102: SWMB P-102

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.50	10,996	0	52.70	10,996	14,173
47.60	10,996	440	52.80	10,996	14,173
47.70	10,996	880	52.90	10,996	14,173
47.80	10,996	1,320	53.00	10,996	14,173
47.90	10,996	1,759			
48.00	10,996	2,199			
48.10	10,996	3,092			
48.20	10,996	3,974			
48.30	10,996	4,842			
48.40	10,996	5,692			
48.50	10,996	6,520			
48.60	10,996	7,326			
48.70	10,996	8,106			
48.80	10,996	8,855			
48.90	10,996	9,566			
49.00	10,996	10,232			
49.10	10,996	10,829			
49.20	10,996	11,350			
49.30	10,996	11,824			
49.40	10,996	12,267			
49.50	10,996	12,707			
49.60	10,996	13,147			
49.70	10,996	13,586			
49.80	10,996	14,026			
49.90	10,996	14,173			
50.00	10,996	14,173			
50.10	10,996	14,173			
50.20	10,996	14,173			
50.30	10,996	14,173			
50.40	10,996	14,173			
50.50	10,996	14,173			
50.60	10,996	14,173			
50.70	10,996	14,173			
50.80	10,996	14,173			
50.90	10,996	14,173			
51.00	10,996	14,173			
51.10	10,996	14,173			
51.20	10,996	14,173			
51.30	10,996	14,173			
51.40	10,996	14,173			
51.50	10,996	14,173			
51.60	10,996	14,173			
51.70	10,996	14,173			
51.80	10,996	14,173			
51.90	10,996	14,173			
52.00	10,996	14,173			
52.10	10,996	14,173			
52.20	10,996	14,173			
52.30	10,996	14,173			
52.40	10,996	14,173			
52.50	10,996	14,173			
52.60	10,996	14,173			

Summary for Pond P-103: SWMB P-103

Inflow Area = 24,111 sf, 91.05% Impervious, Inflow Depth = 2.33" for 1-yr event
 Inflow = 1.62 cfs @ 12.02 hrs, Volume= 4,686 cf
 Outflow = 0.48 cfs @ 12.22 hrs, Volume= 4,689 cf, Atten= 70%, Lag= 11.8 min
 Primary = 0.19 cfs @ 12.22 hrs, Volume= 303 cf
 Routed to Reach 2R : 18" HDPE
 Secondary = 0.29 cfs @ 12.22 hrs, Volume= 4,386 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 50.54' @ 12.22 hrs Surf.Area= 2,096 sf Storage= 814 cf

Plug-Flow detention time= 11.5 min calculated for 4,681 cf (100% of inflow)
 Center-of-Mass det. time= 11.8 min (803.9 - 792.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.80'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	50.30'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	50.30'	8.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	51.40'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	49.80'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.00'

Primary OutFlow Max=0.19 cfs @ 12.22 hrs HW=50.54' (Free Discharge)

↑1=Low Level Orifice (Orifice Controls 0.19 cfs @ 1.66 fps)

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

Secondary OutFlow Max=0.29 cfs @ 12.22 hrs HW=50.54' (Free Discharge)

↑3=Underdrain (Controls 0.29 cfs)

Pond P-103: SWMB P-103 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

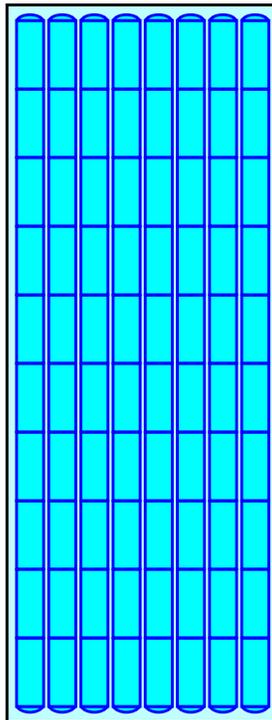
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

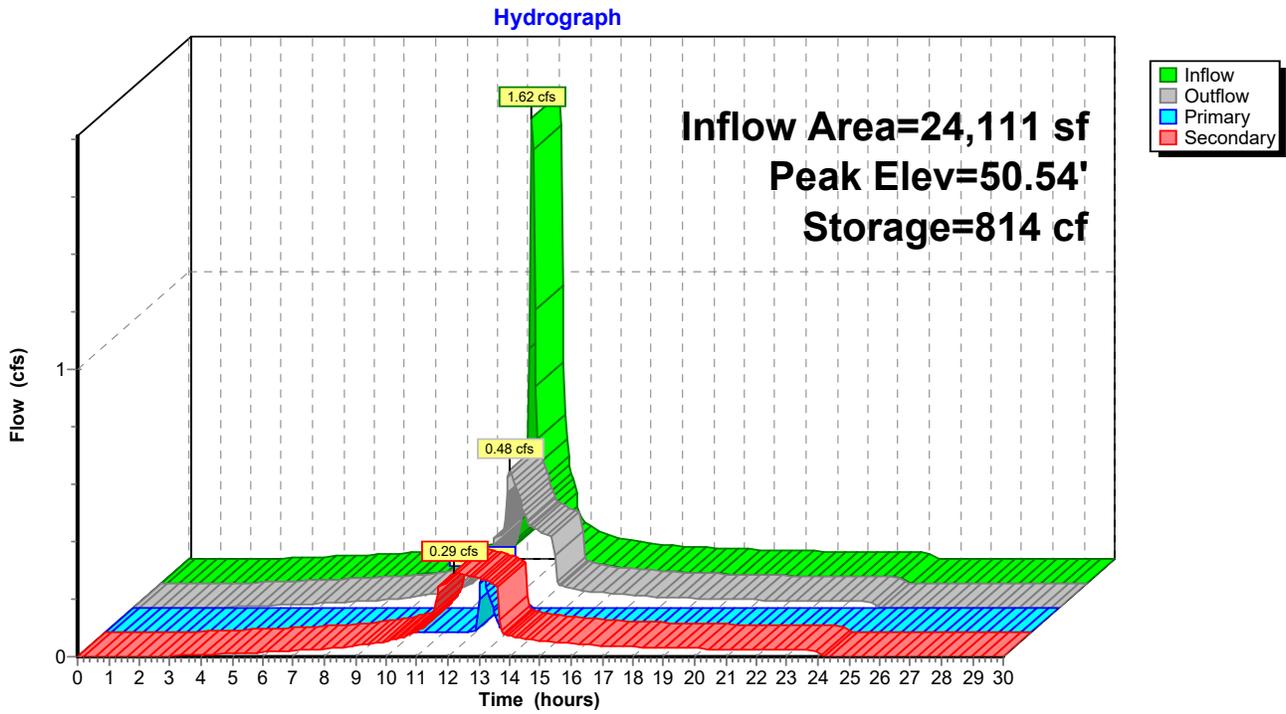
80 Chambers

181.1 cy Field

137.4 cy Stone



Pond P-103: SWMB P-103



Stage-Discharge for Pond P-103: SWMB P-103

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
49.80	0.00	0.00	0.00	52.40	16.45	16.04	0.41
49.85	0.25	0.00	0.25	52.45	17.57	17.16	0.41
49.90	0.25	0.00	0.25	52.50	18.72	18.30	0.41
49.95	0.25	0.00	0.25	52.55	19.89	19.47	0.42
50.00	0.26	0.00	0.26	52.60	21.10	20.68	0.42
50.05	0.26	0.00	0.26	52.65	22.33	21.91	0.42
50.10	0.26	0.00	0.26	52.70	23.59	23.16	0.43
50.15	0.26	0.00	0.26	52.75	24.88	24.45	0.43
50.20	0.27	0.00	0.27	52.80	26.20	25.76	0.43
50.25	0.27	0.00	0.27	52.85	27.54	27.10	0.44
50.30	0.27	0.00	0.27	52.90	28.91	28.47	0.44
50.35	0.29	0.01	0.28	52.95	30.30	29.86	0.44
50.40	0.32	0.04	0.28	53.00	31.72	31.27	0.45
50.45	0.36	0.08	0.28	53.05	33.17	32.72	0.45
50.50	0.42	0.13	0.29	53.10	34.64	34.18	0.45
50.55	0.49	0.20	0.29	53.15	36.13	35.67	0.46
50.60	0.58	0.28	0.29	53.20	37.65	37.19	0.46
50.65	0.67	0.37	0.30	53.25	39.19	38.73	0.46
50.70	0.77	0.47	0.30	53.30	40.76	40.30	0.47
50.75	0.88	0.57	0.30	53.35	42.35	41.89	0.47
50.80	0.98	0.68	0.31	53.40	43.97	43.50	0.47
50.85	1.09	0.78	0.31	53.45	45.61	45.13	0.48
50.90	1.19	0.87	0.31	53.50	47.27	46.79	0.48
50.95	1.27	0.95	0.32	53.55	48.95	48.47	0.48
51.00	1.34	1.02	0.32	53.60	50.66	50.18	0.49
51.05	1.41	1.08	0.32	53.65	52.39	51.90	0.49
51.10	1.47	1.15	0.33	53.70	54.14	53.65	0.49
51.15	1.54	1.21	0.33	53.75	55.91	55.42	0.49
51.20	1.60	1.27	0.33	53.80	57.71	57.21	0.50
51.25	1.65	1.32	0.34	53.85	59.52	59.02	0.50
51.30	1.71	1.37	0.34	53.90	61.36	60.86	0.50
51.35	1.76	1.42	0.34	53.95	63.22	62.71	0.51
51.40	1.82	1.47	0.34	54.00	65.10	64.59	0.51
51.45	2.01	1.67	0.35				
51.50	2.33	1.98	0.35				
51.55	2.73	2.38	0.35				
51.60	3.19	2.84	0.36				
51.65	3.71	3.35	0.36				
51.70	4.29	3.92	0.36				
51.75	4.91	4.54	0.37				
51.80	5.57	5.20	0.37				
51.85	6.28	5.91	0.37				
51.90	7.03	6.65	0.38				
51.95	7.81	7.43	0.38				
52.00	8.64	8.25	0.38				
52.05	9.50	9.11	0.39				
52.10	10.39	10.00	0.39				
52.15	11.32	10.93	0.39				
52.20	12.28	11.89	0.40				
52.25	13.28	12.88	0.40				
52.30	14.30	13.90	0.40				
52.35	15.36	14.96	0.41				

Stage-Area-Storage for Pond P-103: SWMB P-103

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.80	2,096	0	52.40	2,096	2,664
49.85	2,096	42	52.45	2,096	2,664
49.90	2,096	84	52.50	2,096	2,664
49.95	2,096	126	52.55	2,096	2,664
50.00	2,096	168	52.60	2,096	2,664
50.05	2,096	210	52.65	2,096	2,664
50.10	2,096	251	52.70	2,096	2,664
50.15	2,096	293	52.75	2,096	2,664
50.20	2,096	335	52.80	2,096	2,664
50.25	2,096	377	52.85	2,096	2,664
50.30	2,096	419	52.90	2,096	2,664
50.35	2,096	502	52.95	2,096	2,664
50.40	2,096	585	53.00	2,096	2,664
50.45	2,096	667	53.05	2,096	2,664
50.50	2,096	749	53.10	2,096	2,664
50.55	2,096	830	53.15	2,096	2,664
50.60	2,096	910	53.20	2,096	2,664
50.65	2,096	990	53.25	2,096	2,664
50.70	2,096	1,068	53.30	2,096	2,664
50.75	2,096	1,146	53.35	2,096	2,664
50.80	2,096	1,222	53.40	2,096	2,664
50.85	2,096	1,298	53.45	2,096	2,664
50.90	2,096	1,372	53.50	2,096	2,664
50.95	2,096	1,446	53.55	2,096	2,664
51.00	2,096	1,518	53.60	2,096	2,664
51.05	2,096	1,588	53.65	2,096	2,664
51.10	2,096	1,657	53.70	2,096	2,664
51.15	2,096	1,725	53.75	2,096	2,664
51.20	2,096	1,790	53.80	2,096	2,664
51.25	2,096	1,854	53.85	2,096	2,664
51.30	2,096	1,915	53.90	2,096	2,664
51.35	2,096	1,973	53.95	2,096	2,664
51.40	2,096	2,027	54.00	2,096	2,664
51.45	2,096	2,078			
51.50	2,096	2,126			
51.55	2,096	2,172			
51.60	2,096	2,216			
51.65	2,096	2,258			
51.70	2,096	2,300			
51.75	2,096	2,342			
51.80	2,096	2,384			
51.85	2,096	2,426			
51.90	2,096	2,468			
51.95	2,096	2,510			
52.00	2,096	2,552			
52.05	2,096	2,594			
52.10	2,096	2,636			
52.15	2,096	2,664			
52.20	2,096	2,664			
52.25	2,096	2,664			
52.30	2,096	2,664			
52.35	2,096	2,664			

Summary for Pond P-104: P-104

Inflow Area = 17,421 sf, 91.84% Impervious, Inflow Depth = 2.33" for 1-yr event
 Inflow = 1.17 cfs @ 12.02 hrs, Volume= 3,386 cf
 Outflow = 0.36 cfs @ 12.21 hrs, Volume= 3,385 cf, Atten= 69%, Lag= 11.3 min
 Primary = 0.01 cfs @ 12.21 hrs, Volume= 4 cf
 Routed to Pond 5R : MH-102 to MH-103
 Secondary = 0.35 cfs @ 12.21 hrs, Volume= 3,382 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 49.21' @ 12.21 hrs Surf.Area= 2,096 sf Storage= 483 cf

Plug-Flow detention time= 7.4 min calculated for 3,385 cf (100% of inflow)
 Center-of-Mass det. time= 7.2 min (799.3 - 792.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	48.67'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	49.17'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	49.17'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	50.25'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	48.67'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 47.50'

Primary OutFlow Max=0.00 cfs @ 12.21 hrs HW=49.21' (Free Discharge)

↑1=Low Level Orifice (Orifice Controls 0.00 cfs @ 0.66 fps)

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

Secondary OutFlow Max=0.35 cfs @ 12.21 hrs HW=49.21' (Free Discharge)

↑3=Underdrain (Controls 0.35 cfs)

Pond P-104: P-104 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

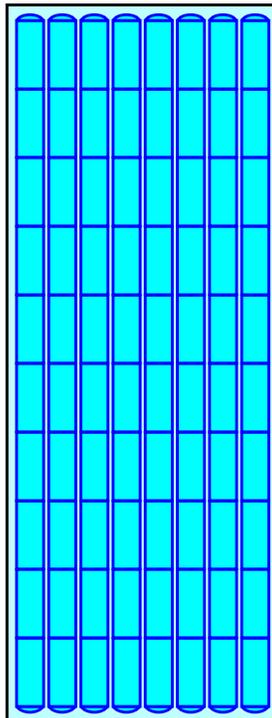
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

80 Chambers

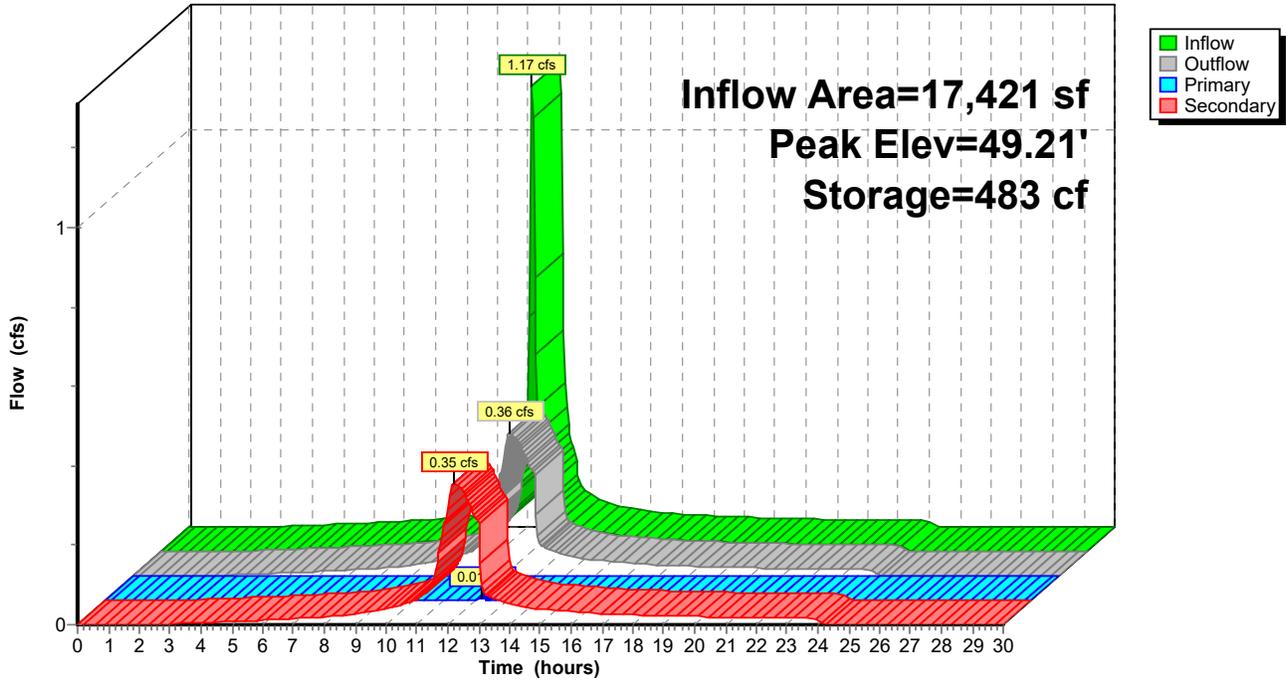
181.1 cy Field

137.4 cy Stone



Pond P-104: P-104

Hydrograph



Stage-Discharge for Pond P-104: P-104

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
48.67	0.00	0.00	0.00	51.27	16.31	15.52	0.78
48.72	0.25	0.00	0.25	51.32	17.43	16.64	0.79
48.77	0.26	0.00	0.26	51.37	18.58	17.78	0.80
48.82	0.27	0.00	0.27	51.42	19.76	18.95	0.81
48.87	0.28	0.00	0.28	51.47	20.97	20.15	0.82
48.92	0.29	0.00	0.29	51.52	22.21	21.38	0.83
48.97	0.30	0.00	0.30	51.57	23.48	22.63	0.84
49.02	0.32	0.00	0.32	51.62	24.77	23.92	0.85
49.07	0.33	0.00	0.33	51.67	26.09	25.23	0.86
49.12	0.34	0.00	0.34	51.72	27.44	26.56	0.87
49.17	0.35	0.00	0.35	51.77	28.81	27.93	0.89
49.22	0.36	0.01	0.36	51.82	30.21	29.32	0.90
49.27	0.40	0.03	0.37	51.87	31.64	30.73	0.91
49.32	0.44	0.07	0.38	51.92	33.09	32.17	0.92
49.37	0.50	0.11	0.39	51.97	34.56	33.64	0.93
49.42	0.57	0.17	0.40	52.02	36.06	35.13	0.94
49.47	0.64	0.23	0.41	52.07	37.59	36.64	0.95
49.52	0.71	0.30	0.42	52.12	39.14	38.18	0.96
49.57	0.79	0.36	0.43	52.17	40.71	39.74	0.97
49.62	0.86	0.43	0.44	52.22	42.31	41.33	0.98
49.67	0.92	0.47	0.45	52.27	43.93	42.94	0.99
49.72	0.98	0.52	0.46	52.32	45.57	44.57	1.00
49.77	1.03	0.56	0.47	52.37	47.24	46.23	1.01
49.82	1.08	0.60	0.48	52.42	48.93	47.91	1.02
49.87	1.13	0.63	0.49	52.47	50.64	49.61	1.03
49.92	1.17	0.67	0.50	52.52	52.37	51.33	1.04
49.97	1.21	0.70	0.51	52.57	54.13	53.08	1.05
50.02	1.25	0.73	0.52	52.62	55.91	54.85	1.06
50.07	1.29	0.76	0.53	52.67	57.71	56.64	1.07
50.12	1.33	0.79	0.54	52.72	59.53	58.45	1.08
50.17	1.37	0.82	0.55	52.77	61.37	60.28	1.09
50.22	1.41	0.85	0.56	52.82	63.23	62.13	1.10
50.27	1.48	0.91	0.57				
50.32	1.72	1.14	0.58				
50.37	2.06	1.47	0.59				
50.42	2.48	1.87	0.61				
50.47	2.95	2.34	0.62				
50.52	3.48	2.86	0.63				
50.57	4.06	3.43	0.64				
50.62	4.69	4.04	0.65				
50.67	5.36	4.71	0.66				
50.72	6.08	5.41	0.67				
50.77	6.83	6.15	0.68				
50.82	7.62	6.93	0.69				
50.87	8.45	7.75	0.70				
50.92	9.32	8.61	0.71				
50.97	10.22	9.50	0.72				
51.02	11.15	10.42	0.73				
51.07	12.12	11.38	0.74				
51.12	13.12	12.37	0.75				
51.17	14.15	13.39	0.76				
51.22	15.21	14.44	0.77				

Stage-Area-Storage for Pond P-104: P-104

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
48.67	2,096	0	51.27	2,096	2,664
48.72	2,096	42	51.32	2,096	2,664
48.77	2,096	84	51.37	2,096	2,664
48.82	2,096	126	51.42	2,096	2,664
48.87	2,096	168	51.47	2,096	2,664
48.92	2,096	210	51.52	2,096	2,664
48.97	2,096	251	51.57	2,096	2,664
49.02	2,096	293	51.62	2,096	2,664
49.07	2,096	335	51.67	2,096	2,664
49.12	2,096	377	51.72	2,096	2,664
49.17	2,096	419	51.77	2,096	2,664
49.22	2,096	502	51.82	2,096	2,664
49.27	2,096	585	51.87	2,096	2,664
49.32	2,096	667	51.92	2,096	2,664
49.37	2,096	749	51.97	2,096	2,664
49.42	2,096	830	52.02	2,096	2,664
49.47	2,096	910	52.07	2,096	2,664
49.52	2,096	990	52.12	2,096	2,664
49.57	2,096	1,068	52.17	2,096	2,664
49.62	2,096	1,146	52.22	2,096	2,664
49.67	2,096	1,222	52.27	2,096	2,664
49.72	2,096	1,298	52.32	2,096	2,664
49.77	2,096	1,372	52.37	2,096	2,664
49.82	2,096	1,446	52.42	2,096	2,664
49.87	2,096	1,518	52.47	2,096	2,664
49.92	2,096	1,588	52.52	2,096	2,664
49.97	2,096	1,657	52.57	2,096	2,664
50.02	2,096	1,725	52.62	2,096	2,664
50.07	2,096	1,790	52.67	2,096	2,664
50.12	2,096	1,854	52.72	2,096	2,664
50.17	2,096	1,915	52.77	2,096	2,664
50.22	2,096	1,973	52.82	2,096	2,664
50.27	2,096	2,027			
50.32	2,096	2,078			
50.37	2,096	2,126			
50.42	2,096	2,172			
50.47	2,096	2,216			
50.52	2,096	2,258			
50.57	2,096	2,300			
50.62	2,096	2,342			
50.67	2,096	2,384			
50.72	2,096	2,426			
50.77	2,096	2,468			
50.82	2,096	2,510			
50.87	2,096	2,552			
50.92	2,096	2,594			
50.97	2,096	2,636			
51.02	2,096	2,664			
51.07	2,096	2,664			
51.12	2,096	2,664			
51.17	2,096	2,664			
51.22	2,096	2,664			

Summary for Pond P-105: SWMB P-105

Inflow Area = 184,140 sf, 100.00% Impervious, Inflow Depth = 2.65" for 1-yr event
 Inflow = 13.28 cfs @ 12.02 hrs, Volume= 40,646 cf
 Outflow = 2.39 cfs @ 12.40 hrs, Volume= 40,646 cf, Atten= 82%, Lag= 22.5 min
 Discarded = 2.39 cfs @ 12.40 hrs, Volume= 40,646 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 49.84' @ 12.40 hrs Surf.Area= 16,134 sf Storage= 7,901 cf

Plug-Flow detention time= 16.8 min calculated for 40,578 cf (100% of inflow)
 Center-of-Mass det. time= 16.8 min (777.5 - 760.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.00'	14,226 cf	167.75'W x 96.18'L x 3.50'H Field A 56,468 cf Overall - 20,903 cf Embedded = 35,565 cf x 40.0% Voids
#2A	49.50'	20,903 cf	ADS_StormTech SC-740 +Cap x 455 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 455 Chambers in 35 Rows
		35,129 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	4.0' long x 2.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 2.5' Crest Height
#2	Primary	50.70'	6.0" Vert. 6" Low Level Orifice C= 0.600 Limited to weir flow at low heads
#3	Discarded	49.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 46.00'

Discarded OutFlow Max=2.39 cfs @ 12.40 hrs HW=49.84' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 2.39 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=49.00' (Free Discharge)
 ↑ **1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
 ↓ **2=6" Low Level Orifice** (Controls 0.00 cfs)

Pond P-105: SWMB P-105 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 94.18' Row Length +12.0" End Stone x 2 = 96.18' Base Length

35 Rows x 51.0" Wide + 6.0" Spacing x 34 + 12.0" Side Stone x 2 = 167.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

455 Chambers x 45.9 cf = 20,902.7 cf Chamber Storage

56,467.7 cf Field - 20,902.7 cf Chambers = 35,565.0 cf Stone x 40.0% Voids = 14,226.0 cf Stone Storage

Chamber Storage + Stone Storage = 35,128.7 cf = 0.806 af

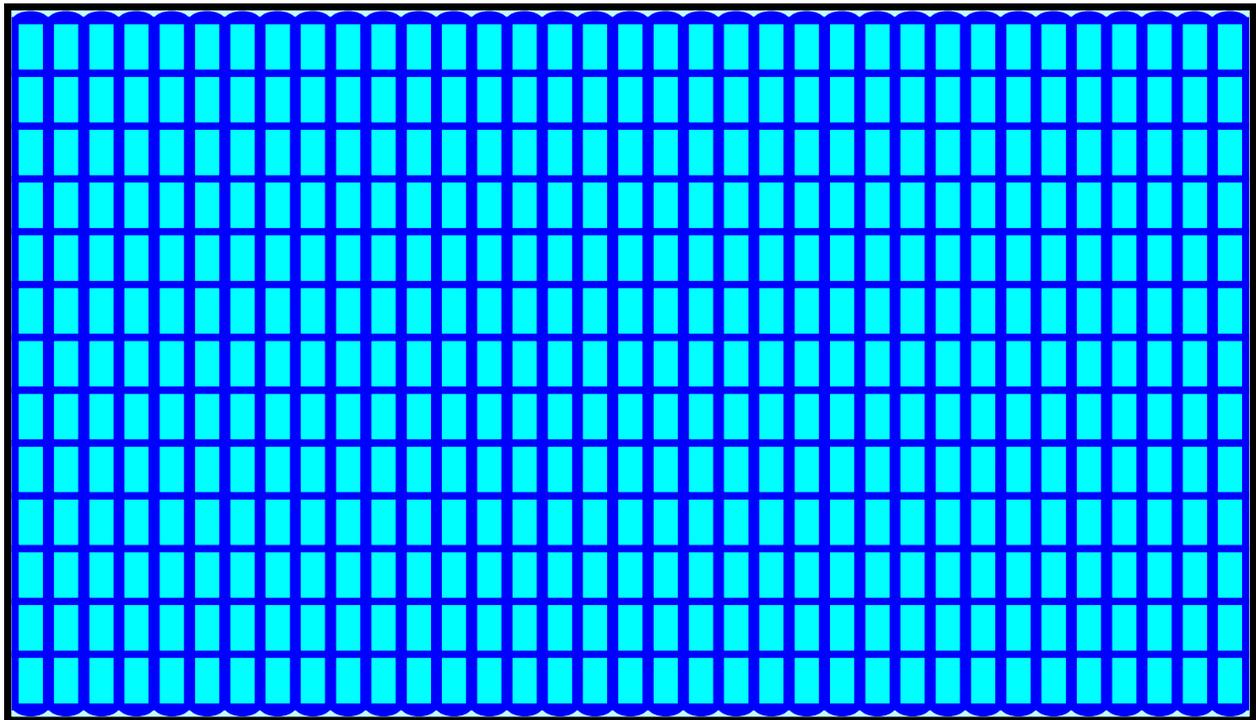
Overall Storage Efficiency = 62.2%

Overall System Size = 96.18' x 167.75' x 3.50'

455 Chambers

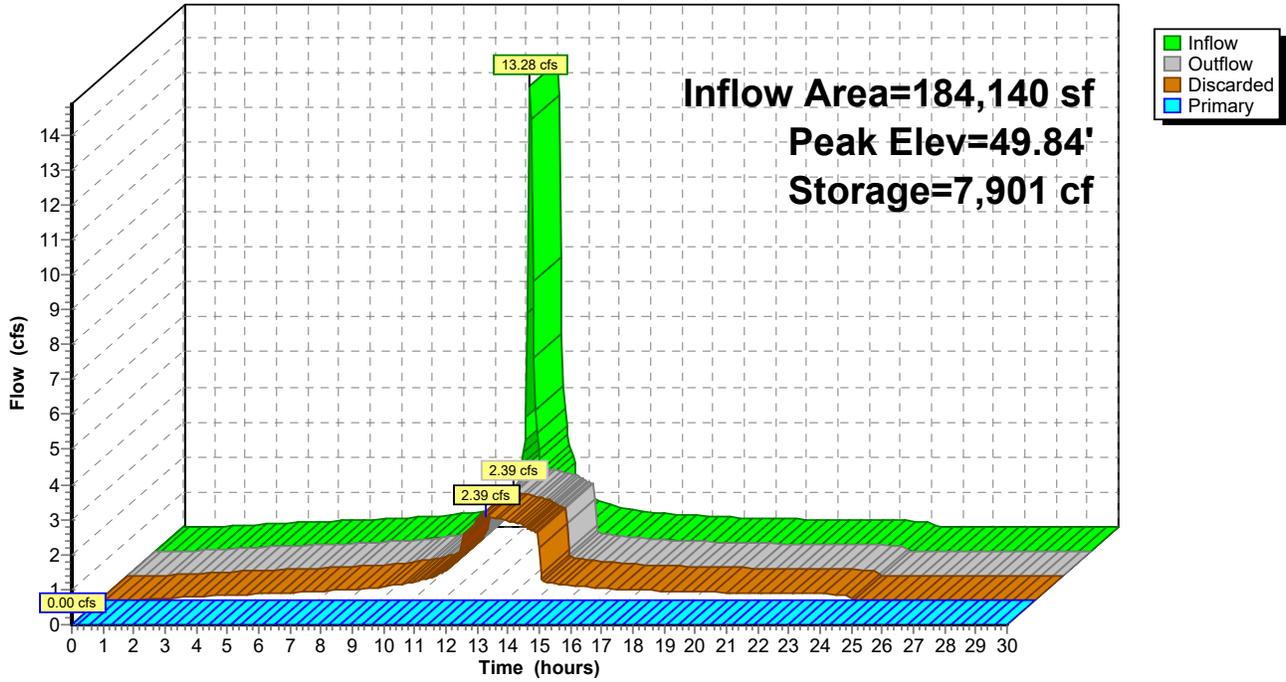
2,091.4 cy Field

1,317.2 cy Stone



Pond P-105: SWMB P-105

Hydrograph



Stage-Discharge for Pond P-105: SWMB P-105

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
49.00	0.00	0.00	0.00	51.60	10.32	3.49	6.83
49.05	1.90	1.90	0.00	51.65	11.15	3.52	7.63
49.10	1.93	1.93	0.00	51.70	12.01	3.55	8.46
49.15	1.96	1.96	0.00	51.75	12.90	3.58	9.32
49.20	1.99	1.99	0.00	51.80	13.82	3.61	10.21
49.25	2.02	2.02	0.00	51.85	14.76	3.64	11.12
49.30	2.05	2.05	0.00	51.90	15.73	3.67	12.06
49.35	2.09	2.09	0.00	51.95	16.72	3.70	13.02
49.40	2.12	2.12	0.00	52.00	17.74	3.73	14.00
49.45	2.15	2.15	0.00	52.05	18.78	3.77	15.01
49.50	2.18	2.18	0.00	52.10	19.84	3.80	16.04
49.55	2.21	2.21	0.00	52.15	20.92	3.83	17.09
49.60	2.24	2.24	0.00	52.20	22.03	3.86	18.17
49.65	2.27	2.27	0.00	52.25	23.15	3.89	19.26
49.70	2.30	2.30	0.00	52.30	24.30	3.92	20.38
49.75	2.33	2.33	0.00	52.35	25.47	3.95	21.51
49.80	2.37	2.37	0.00	52.40	26.65	3.98	22.67
49.85	2.40	2.40	0.00	52.45	27.86	4.01	23.84
49.90	2.43	2.43	0.00	52.50	29.08	4.05	25.04
49.95	2.46	2.46	0.00	52.55	30.32	4.08	26.25
50.00	2.49	2.49	0.00	52.60	31.58	4.11	27.48
50.05	2.52	2.52	0.00	52.65	32.86	4.14	28.72
50.10	2.55	2.55	0.00	52.70	34.16	4.17	29.99
50.15	2.58	2.58	0.00	52.75	35.47	4.20	31.27
50.20	2.61	2.61	0.00	52.80	36.79	4.23	32.56
50.25	2.65	2.65	0.00	52.85	38.14	4.26	33.88
50.30	2.68	2.68	0.00	52.90	39.50	4.29	35.20
50.35	2.71	2.71	0.00	52.95	40.87	4.33	36.55
50.40	2.74	2.74	0.00	53.00	42.27	4.36	37.91
50.45	2.77	2.77	0.00				
50.50	2.80	2.80	0.00				
50.55	2.83	2.83	0.00				
50.60	2.86	2.86	0.00				
50.65	2.89	2.89	0.00				
50.70	2.93	2.93	0.00				
50.75	2.96	2.96	0.01				
50.80	3.02	2.99	0.03				
50.85	3.08	3.02	0.07				
50.90	3.16	3.05	0.11				
50.95	3.25	3.08	0.17				
51.00	3.34	3.11	0.23				
51.05	3.59	3.14	0.44				
51.10	3.95	3.17	0.78				
51.15	4.39	3.21	1.18				
51.20	4.88	3.24	1.64				
51.25	5.42	3.27	2.15				
51.30	6.01	3.30	2.71				
51.35	6.63	3.33	3.30				
51.40	7.30	3.36	3.94				
51.45	8.01	3.39	4.61				
51.50	8.74	3.42	5.32				
51.55	9.51	3.45	6.06				

Stage-Area-Storage for Pond P-105: SWMB P-105

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.00	16,134	0	51.60	16,134	28,842
49.05	16,134	323	51.65	16,134	29,294
49.10	16,134	645	51.70	16,134	29,728
49.15	16,134	968	51.75	16,134	30,136
49.20	16,134	1,291	51.80	16,134	30,521
49.25	16,134	1,613	51.85	16,134	30,884
49.30	16,134	1,936	51.90	16,134	31,234
49.35	16,134	2,259	51.95	16,134	31,573
49.40	16,134	2,581	52.00	16,134	31,902
49.45	16,134	2,904	52.05	16,134	32,225
49.50	16,134	3,227	52.10	16,134	32,547
49.55	16,134	3,911	52.15	16,134	32,870
49.60	16,134	4,594	52.20	16,134	33,193
49.65	16,134	5,277	52.25	16,134	33,515
49.70	16,134	5,958	52.30	16,134	33,838
49.75	16,134	6,637	52.35	16,134	34,161
49.80	16,134	7,313	52.40	16,134	34,483
49.85	16,134	7,987	52.45	16,134	34,806
49.90	16,134	8,659	52.50	16,134	35,129
49.95	16,134	9,328	52.55	16,134	35,129
50.00	16,134	9,994	52.60	16,134	35,129
50.05	16,134	10,658	52.65	16,134	35,129
50.10	16,134	11,318	52.70	16,134	35,129
50.15	16,134	11,975	52.75	16,134	35,129
50.20	16,134	12,629	52.80	16,134	35,129
50.25	16,134	13,279	52.85	16,134	35,129
50.30	16,134	13,926	52.90	16,134	35,129
50.35	16,134	14,570	52.95	16,134	35,129
50.40	16,134	15,209	53.00	16,134	35,129
50.45	16,134	15,845			
50.50	16,134	16,477			
50.55	16,134	17,105			
50.60	16,134	17,728			
50.65	16,134	18,346			
50.70	16,134	18,959			
50.75	16,134	19,567			
50.80	16,134	20,170			
50.85	16,134	20,767			
50.90	16,134	21,359			
50.95	16,134	21,945			
51.00	16,134	22,525			
51.05	16,134	23,098			
51.10	16,134	23,666			
51.15	16,134	24,225			
51.20	16,134	24,776			
51.25	16,134	25,318			
51.30	16,134	25,851			
51.35	16,134	26,376			
51.40	16,134	26,891			
51.45	16,134	27,396			
51.50	16,134	27,891			
51.55	16,134	28,373			

Summary for Pond P-106: SWMB-106

Inflow Area = 60,202 sf, 78.09% Impervious, Inflow Depth = 1.63" for 1-yr event
 Inflow = 2.88 cfs @ 12.03 hrs, Volume= 8,201 cf
 Outflow = 0.55 cfs @ 12.46 hrs, Volume= 8,200 cf, Atten= 81%, Lag= 25.8 min
 Discarded = 0.44 cfs @ 12.46 hrs, Volume= 7,992 cf
 Primary = 0.12 cfs @ 12.46 hrs, Volume= 208 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 47.20' @ 12.46 hrs Surf.Area= 2,697 sf Storage= 1,963 cf

Plug-Flow detention time= 28.0 min calculated for 8,186 cf (100% of inflow)
 Center-of-Mass det. time= 27.8 min (869.9 - 842.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.00'	1,904 cf	28.17'W x 95.76'L x 2.33'H Field A 6,294 cf Overall - 1,533 cf Embedded = 4,760 cf x 40.0% Voids
#2A	46.50'	1,533 cf	ADS_StormTech SC-310 +Cap x 104 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 104 Chambers in 8 Rows
		3,437 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	47.50'	4.0' long x 5.00' rise Weir Wall 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.00'

Discarded OutFlow Max=0.44 cfs @ 12.46 hrs HW=47.20' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 0.44 cfs)

Primary OutFlow Max=0.11 cfs @ 12.46 hrs HW=47.20' (Free Discharge)
 ↑ **1=Low Level Orifice** (Orifice Controls 0.11 cfs @ 1.53 fps)
 ↓ **2=Weir Wall** (Controls 0.00 cfs)

Pond P-106: SWMB-106 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

104 Chambers x 14.7 cf = 1,533.2 cf Chamber Storage

6,293.6 cf Field - 1,533.2 cf Chambers = 4,760.4 cf Stone x 40.0% Voids = 1,904.2 cf Stone Storage

Chamber Storage + Stone Storage = 3,437.3 cf = 0.079 af

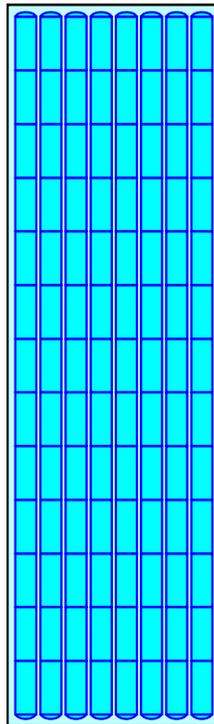
Overall Storage Efficiency = 54.6%

Overall System Size = 95.76' x 28.17' x 2.33'

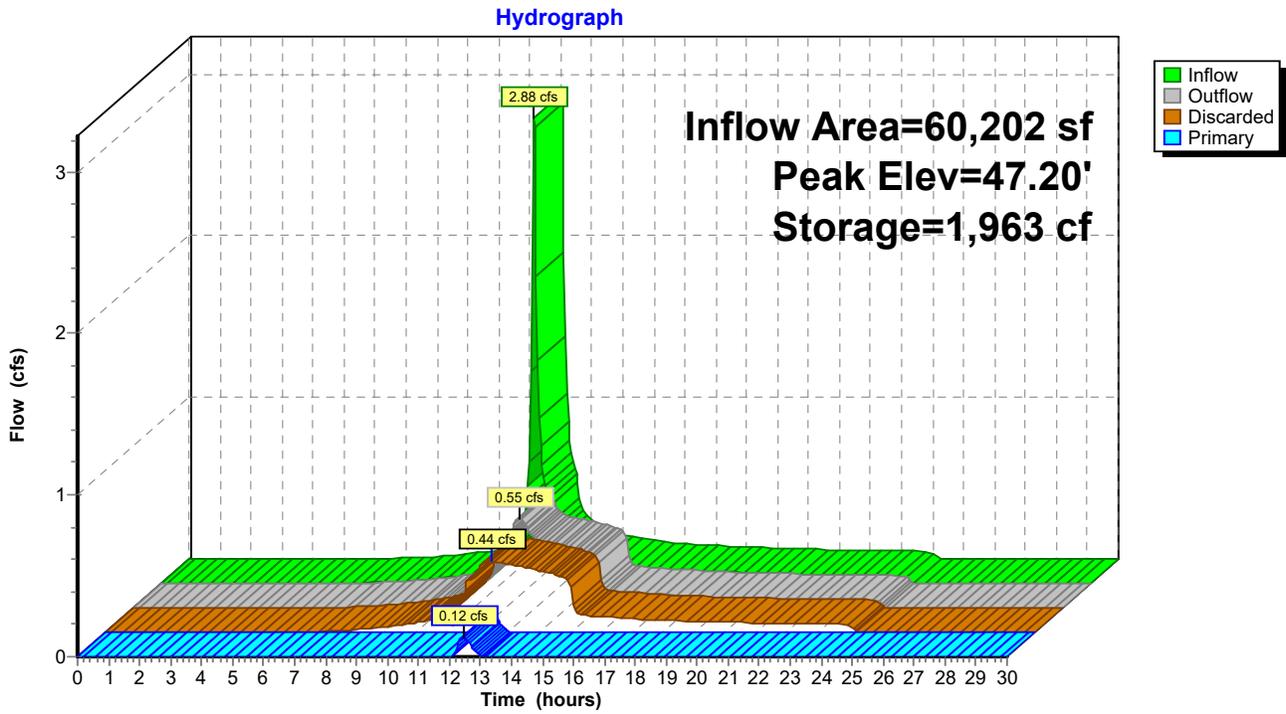
104 Chambers

233.1 cy Field

176.3 cy Stone



Pond P-106: SWMB-106



Stage-Discharge for Pond P-106: SWMB-106

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.00	0.00	0.00	0.00	51.20	101.49	0.85	100.64
46.10	0.32	0.32	0.00	51.30	105.57	0.86	104.70
46.20	0.33	0.33	0.00	51.40	109.69	0.87	108.81
46.30	0.34	0.34	0.00	51.50	113.85	0.88	112.97
46.40	0.35	0.35	0.00	51.60	118.06	0.89	117.16
46.50	0.36	0.36	0.00	51.70	122.31	0.91	121.40
46.60	0.37	0.37	0.00	51.80	126.59	0.92	125.68
46.70	0.39	0.39	0.00	51.90	130.92	0.93	129.99
46.80	0.40	0.40	0.00	52.00	135.28	0.94	134.34
46.90	0.41	0.41	0.00	52.10	139.67	0.95	138.72
47.00	0.42	0.42	0.00	52.20	144.10	0.96	143.14
47.10	0.46	0.43	0.03	52.30	148.55	0.97	147.59
47.20	0.55	0.44	0.11	52.40	153.04	0.98	152.06
47.30	0.68	0.45	0.23	52.50	157.56	0.99	156.57
47.40	0.82	0.46	0.36				
47.50	0.94	0.47	0.47				
47.60	1.45	0.48	0.97				
47.70	2.30	0.49	1.81				
47.80	3.37	0.50	2.87				
47.90	4.62	0.51	4.11				
48.00	6.03	0.52	5.51				
48.10	7.59	0.53	7.06				
48.20	9.28	0.54	8.74				
48.30	11.09	0.55	10.54				
48.40	13.02	0.56	12.46				
48.50	15.07	0.57	14.50				
48.60	17.22	0.58	16.64				
48.70	19.48	0.59	18.88				
48.80	21.83	0.60	21.23				
48.90	24.28	0.61	23.67				
49.00	26.82	0.62	26.20				
49.10	29.45	0.63	28.82				
49.20	32.17	0.65	31.53				
49.30	34.97	0.66	34.32				
49.40	37.86	0.67	37.19				
49.50	40.82	0.68	40.14				
49.60	43.86	0.69	43.18				
49.70	46.98	0.70	46.28				
49.80	50.17	0.71	49.46				
49.90	53.43	0.72	52.71				
50.00	56.76	0.73	56.03				
50.10	60.16	0.74	59.42				
50.20	63.62	0.75	62.87				
50.30	67.15	0.76	66.39				
50.40	70.74	0.77	69.97				
50.50	74.39	0.78	73.61				
50.60	78.10	0.79	77.31				
50.70	81.86	0.80	81.06				
50.80	85.69	0.81	84.87				
50.90	89.56	0.82	88.74				
51.00	93.49	0.83	92.66				
51.10	97.47	0.84	96.62				

Stage-Area-Storage for Pond P-106: SWMB-106

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.00	2,697	0	51.20	2,697	3,437
46.10	2,697	108	51.30	2,697	3,437
46.20	2,697	216	51.40	2,697	3,437
46.30	2,697	324	51.50	2,697	3,437
46.40	2,697	432	51.60	2,697	3,437
46.50	2,697	539	51.70	2,697	3,437
46.60	2,697	754	51.80	2,697	3,437
46.70	2,697	966	51.90	2,697	3,437
46.80	2,697	1,174	52.00	2,697	3,437
46.90	2,697	1,379	52.10	2,697	3,437
47.00	2,697	1,578	52.20	2,697	3,437
47.10	2,697	1,772	52.30	2,697	3,437
47.20	2,697	1,960	52.40	2,697	3,437
47.30	2,697	2,141	52.50	2,697	3,437
47.40	2,697	2,312			
47.50	2,697	2,473			
47.60	2,697	2,618			
47.70	2,697	2,745			
47.80	2,697	2,861			
47.90	2,697	2,970			
48.00	2,697	3,078			
48.10	2,697	3,186			
48.20	2,697	3,293			
48.30	2,697	3,401			
48.40	2,697	3,437			
48.50	2,697	3,437			
48.60	2,697	3,437			
48.70	2,697	3,437			
48.80	2,697	3,437			
48.90	2,697	3,437			
49.00	2,697	3,437			
49.10	2,697	3,437			
49.20	2,697	3,437			
49.30	2,697	3,437			
49.40	2,697	3,437			
49.50	2,697	3,437			
49.60	2,697	3,437			
49.70	2,697	3,437			
49.80	2,697	3,437			
49.90	2,697	3,437			
50.00	2,697	3,437			
50.10	2,697	3,437			
50.20	2,697	3,437			
50.30	2,697	3,437			
50.40	2,697	3,437			
50.50	2,697	3,437			
50.60	2,697	3,437			
50.70	2,697	3,437			
50.80	2,697	3,437			
50.90	2,697	3,437			
51.00	2,697	3,437			
51.10	2,697	3,437			

Summary for Pond P-107: SWMB P-107

Inflow Area = 90,871 sf, 92.92% Impervious, Inflow Depth = 2.23" for 1-yr event
 Inflow = 5.91 cfs @ 12.02 hrs, Volume= 16,919 cf
 Outflow = 1.37 cfs @ 12.30 hrs, Volume= 16,917 cf, Atten= 77%, Lag= 16.3 min
 Discarded = 0.73 cfs @ 12.30 hrs, Volume= 15,144 cf
 Primary = 0.64 cfs @ 12.30 hrs, Volume= 1,773 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 47.70' @ 12.30 hrs Surf.Area= 3,974 sf Storage= 3,888 cf

Plug-Flow detention time= 26.5 min calculated for 16,889 cf (100% of inflow)
 Center-of-Mass det. time= 26.4 min (826.4 - 800.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.10'	2,789 cf	41.50'W x 95.76'L x 2.33'H Field A 9,273 cf Overall - 2,300 cf Embedded = 6,973 cf x 40.0% Voids
#2A	46.60'	2,300 cf	ADS_StormTech SC-310 +Cap x 156 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 156 Chambers in 12 Rows
		5,089 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	48.00'	4.0' long x 5.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.10'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.40'

Discarded OutFlow Max=0.73 cfs @ 12.30 hrs HW=47.70' (Free Discharge)
 ↳ **3=Exfiltration** (Controls 0.73 cfs)

Primary OutFlow Max=0.64 cfs @ 12.30 hrs HW=47.70' (Free Discharge)
 ↳ **1=Low Level Orifice** (Orifice Controls 0.64 cfs @ 3.24 fps)
 ↳ **2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P-107: SWMB P-107 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

12 Rows x 34.0" Wide + 6.0" Spacing x 11 + 12.0" Side Stone x 2 = 41.50' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

156 Chambers x 14.7 cf = 2,299.7 cf Chamber Storage

9,272.8 cf Field - 2,299.7 cf Chambers = 6,973.0 cf Stone x 40.0% Voids = 2,789.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,089.0 cf = 0.117 af

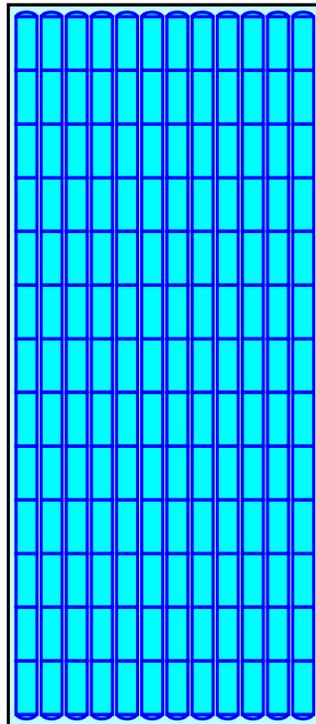
Overall Storage Efficiency = 54.9%

Overall System Size = 95.76' x 41.50' x 2.33'

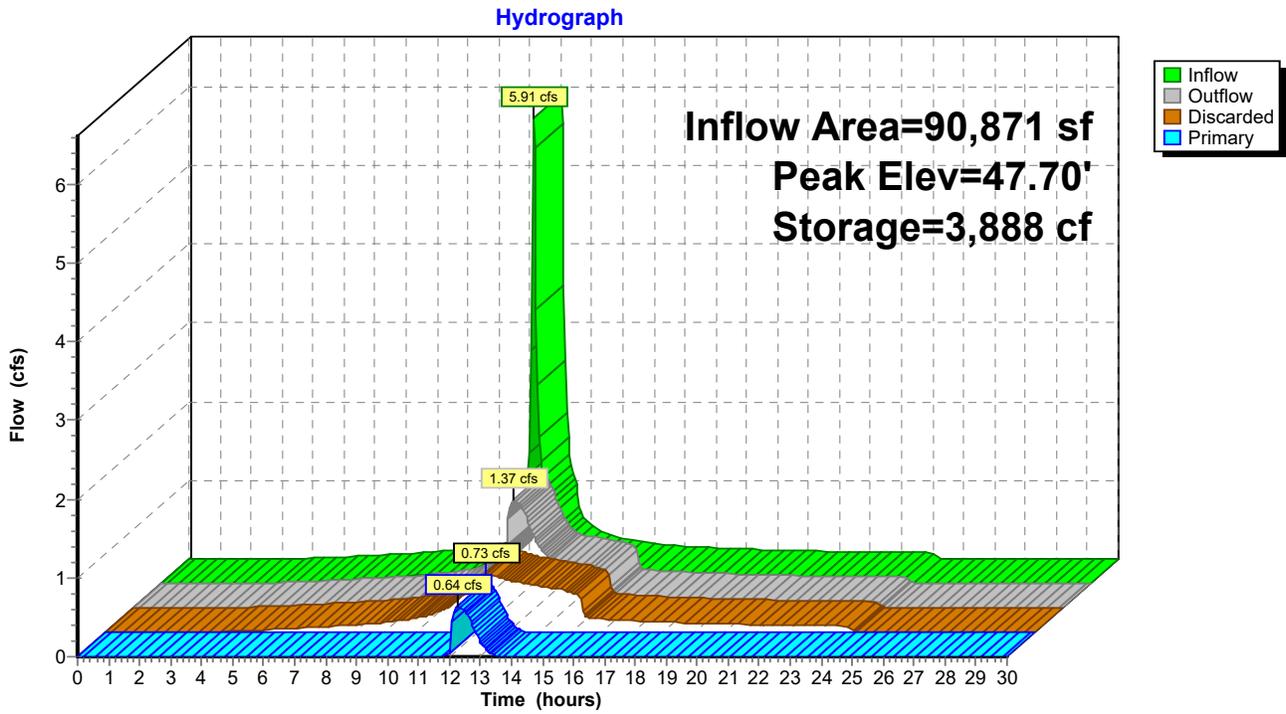
156 Chambers

343.4 cy Field

258.3 cy Stone



Pond P-107: SWMB P-107



Stage-Discharge for Pond P-107: SWMB P-107

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.10	0.00	0.00	0.00	51.30	86.34	1.35	85.00
46.20	0.48	0.48	0.00	51.40	90.22	1.36	88.86
46.30	0.49	0.49	0.00	51.50	94.15	1.38	92.77
46.40	0.51	0.51	0.00	51.60	98.14	1.40	96.74
46.50	0.53	0.53	0.00	51.70	102.17	1.41	100.76
46.60	0.55	0.55	0.00	51.80	106.25	1.43	104.82
46.70	0.56	0.56	0.00	51.90	110.37	1.45	108.93
46.80	0.58	0.58	0.00	52.00	114.54	1.47	113.08
46.90	0.60	0.60	0.00	52.10	118.76	1.48	117.27
47.00	0.61	0.61	0.00	52.20	123.01	1.50	121.51
47.10	0.66	0.63	0.03	52.30	127.30	1.52	125.78
47.20	0.76	0.65	0.11	52.40	131.63	1.53	130.10
47.30	0.89	0.66	0.23	52.50	135.99	1.55	134.44
47.40	1.04	0.68	0.36	52.60	140.39	1.57	138.83
47.50	1.17	0.70	0.47	52.70	144.83	1.58	143.24
47.60	1.27	0.72	0.56	52.80	149.29	1.60	147.69
47.70	1.37	0.73	0.63	52.90	153.78	1.62	152.16
47.80	1.45	0.75	0.70	53.00	158.30	1.64	156.67
47.90	1.53	0.77	0.76				
48.00	1.60	0.78	0.82				
48.10	2.09	0.80	1.29				
48.20	2.92	0.82	2.10				
48.30	3.97	0.83	3.14				
48.40	5.21	0.85	4.36				
48.50	6.62	0.87	5.75				
48.60	8.17	0.89	7.28				
48.70	9.86	0.90	8.95				
48.80	11.67	0.92	10.75				
48.90	13.60	0.94	12.66				
49.00	15.64	0.95	14.69				
49.10	17.80	0.97	16.83				
49.20	20.05	0.99	19.06				
49.30	22.41	1.01	21.40				
49.40	24.86	1.02	23.84				
49.50	27.40	1.04	26.36				
49.60	30.04	1.06	28.98				
49.70	32.76	1.07	31.69				
49.80	35.56	1.09	34.47				
49.90	38.45	1.11	37.34				
50.00	41.42	1.12	40.29				
50.10	44.46	1.14	43.32				
50.20	47.58	1.16	46.43				
50.30	50.78	1.18	49.60				
50.40	54.04	1.19	52.85				
50.50	57.38	1.21	56.17				
50.60	60.78	1.23	59.55				
50.70	64.25	1.24	63.00				
50.80	67.78	1.26	66.52				
50.90	71.37	1.28	70.10				
51.00	75.03	1.29	73.74				
51.10	78.74	1.31	77.43				
51.20	82.51	1.33	81.19				

Stage-Area-Storage for Pond P-107: SWMB P-107

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.10	3,974	0	51.30	3,974	5,089
46.20	3,974	159	51.40	3,974	5,089
46.30	3,974	318	51.50	3,974	5,089
46.40	3,974	477	51.60	3,974	5,089
46.50	3,974	636	51.70	3,974	5,089
46.60	3,974	795	51.80	3,974	5,089
46.70	3,974	1,114	51.90	3,974	5,089
46.80	3,974	1,429	52.00	3,974	5,089
46.90	3,974	1,739	52.10	3,974	5,089
47.00	3,974	2,042	52.20	3,974	5,089
47.10	3,974	2,339	52.30	3,974	5,089
47.20	3,974	2,627	52.40	3,974	5,089
47.30	3,974	2,906	52.50	3,974	5,089
47.40	3,974	3,174	52.60	3,974	5,089
47.50	3,974	3,428	52.70	3,974	5,089
47.60	3,974	3,667	52.80	3,974	5,089
47.70	3,974	3,881	52.90	3,974	5,089
47.80	3,974	4,069	53.00	3,974	5,089
47.90	3,974	4,240			
48.00	3,974	4,400			
48.10	3,974	4,559			
48.20	3,974	4,718			
48.30	3,974	4,877			
48.40	3,974	5,036			
48.50	3,974	5,089			
48.60	3,974	5,089			
48.70	3,974	5,089			
48.80	3,974	5,089			
48.90	3,974	5,089			
49.00	3,974	5,089			
49.10	3,974	5,089			
49.20	3,974	5,089			
49.30	3,974	5,089			
49.40	3,974	5,089			
49.50	3,974	5,089			
49.60	3,974	5,089			
49.70	3,974	5,089			
49.80	3,974	5,089			
49.90	3,974	5,089			
50.00	3,974	5,089			
50.10	3,974	5,089			
50.20	3,974	5,089			
50.30	3,974	5,089			
50.40	3,974	5,089			
50.50	3,974	5,089			
50.60	3,974	5,089			
50.70	3,974	5,089			
50.80	3,974	5,089			
50.90	3,974	5,089			
51.00	3,974	5,089			
51.10	3,974	5,089			
51.20	3,974	5,089			

Summary for Pond P-108: SWMB P-108

Inflow Area = 370,807 sf, 93.15% Impervious, Inflow Depth = 0.26" for 1-yr event
 Inflow = 1.40 cfs @ 12.26 hrs, Volume= 8,163 cf
 Outflow = 0.13 cfs @ 13.94 hrs, Volume= 7,900 cf, Atten= 91%, Lag= 100.6 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12
 Secondary = 0.13 cfs @ 13.94 hrs, Volume= 7,900 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 45.24' @ 13.94 hrs Surf.Area= 20,428 sf Storage= 4,822 cf

Plug-Flow detention time= 371.5 min calculated for 7,887 cf (97% of inflow)
 Center-of-Mass det. time= 352.3 min (1,159.6 - 807.3)

Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	153,555 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	20,005	0	0
46.00	21,777	20,891	20,891
47.00	23,610	22,694	43,585
48.00	25,502	24,556	68,141
49.00	27,451	26,477	94,617
50.00	29,456	28,454	123,071
51.00	31,513	30,485	153,555

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	49.00'	24.0" x 36.0" Horiz. OCS-203 Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	48.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#4	Secondary	45.00'	0.270 in/hr Underdrain over Surface area

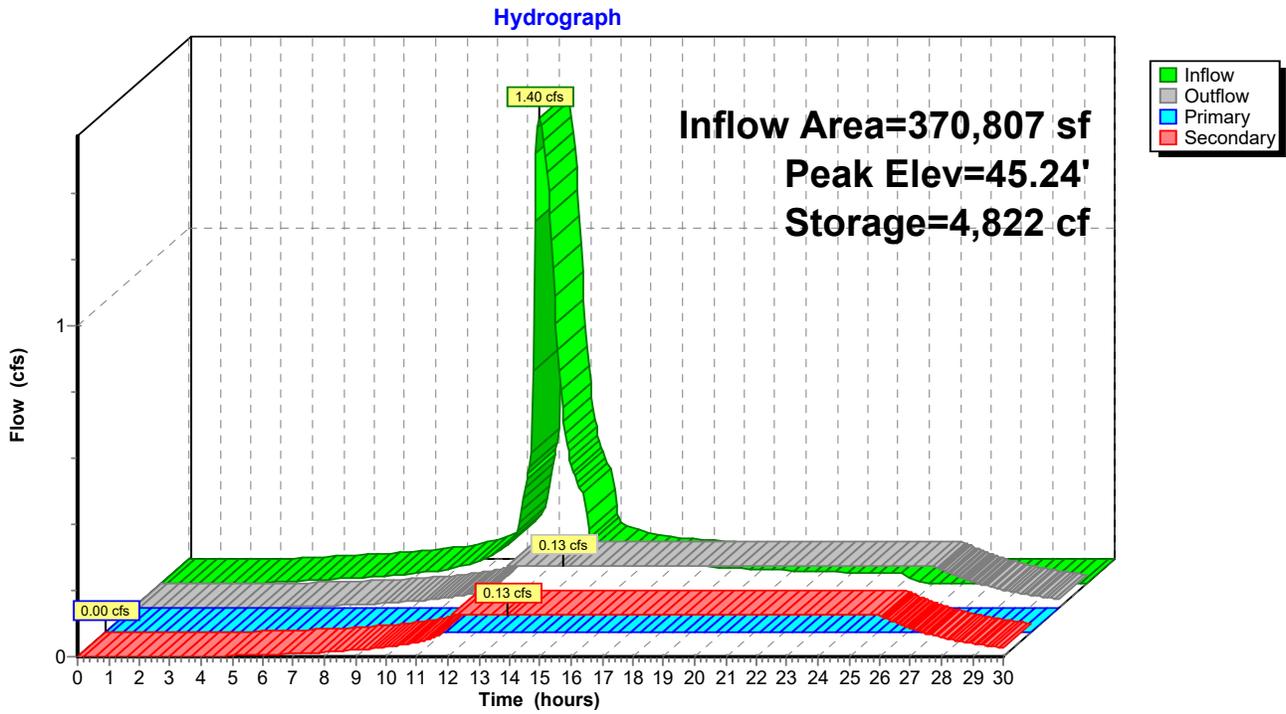
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)

- 1=Overflow Spillway (Controls 0.00 cfs)
- 2=OCS-203 Grate (Controls 0.00 cfs)
- 3=Low Level Orifice (Controls 0.00 cfs)

Secondary OutFlow Max=0.13 cfs @ 13.94 hrs HW=45.24' (Free Discharge)

- 4=Underdrain (Exfiltration Controls 0.13 cfs)

Pond P-108: SWMB P-108



Stage-Discharge for Pond P-108: SWMB P-108

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
45.00	0.00	0.00	0.00	50.20	35.43	35.25	0.19
45.10	0.13	0.00	0.13	50.30	38.86	38.67	0.19
45.20	0.13	0.00	0.13	50.40	42.80	42.61	0.19
45.30	0.13	0.00	0.13	50.50	47.37	47.18	0.19
45.40	0.13	0.00	0.13	50.60	52.54	52.35	0.19
45.50	0.13	0.00	0.13	50.70	57.78	57.58	0.19
45.60	0.13	0.00	0.13	50.80	63.41	63.21	0.19
45.70	0.13	0.00	0.13	50.90	69.43	69.24	0.20
45.80	0.13	0.00	0.13	51.00	75.85	75.66	0.20
45.90	0.13	0.00	0.13				
46.00	0.14	0.00	0.14				
46.10	0.14	0.00	0.14				
46.20	0.14	0.00	0.14				
46.30	0.14	0.00	0.14				
46.40	0.14	0.00	0.14				
46.50	0.14	0.00	0.14				
46.60	0.14	0.00	0.14				
46.70	0.14	0.00	0.14				
46.80	0.15	0.00	0.15				
46.90	0.15	0.00	0.15				
47.00	0.15	0.00	0.15				
47.10	0.15	0.00	0.15				
47.20	0.15	0.00	0.15				
47.30	0.15	0.00	0.15				
47.40	0.15	0.00	0.15				
47.50	0.15	0.00	0.15				
47.60	0.15	0.00	0.15				
47.70	0.16	0.00	0.16				
47.80	0.16	0.00	0.16				
47.90	0.16	0.00	0.16				
48.00	0.16	0.00	0.16				
48.10	0.19	0.03	0.16				
48.20	0.27	0.11	0.16				
48.30	0.39	0.23	0.16				
48.40	0.53	0.36	0.16				
48.50	0.64	0.47	0.17				
48.60	0.73	0.56	0.17				
48.70	0.80	0.63	0.17				
48.80	0.87	0.70	0.17				
48.90	0.93	0.76	0.17				
49.00	0.99	0.82	0.17				
49.10	2.08	1.91	0.17				
49.20	4.02	3.85	0.17				
49.30	6.52	6.34	0.18				
49.40	9.46	9.29	0.18				
49.50	12.80	12.62	0.18				
49.60	16.48	16.30	0.18				
49.70	20.47	20.29	0.18				
49.80	24.76	24.58	0.18				
49.90	28.80	28.62	0.18				
50.00	30.32	30.14	0.18				
50.10	32.56	32.37	0.19				

Stage-Area-Storage for Pond P-108: SWMB P-108

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
45.00	20,005	0	50.20	29,867	129,003
45.10	20,182	2,009	50.30	30,073	132,000
45.20	20,359	4,036	50.40	30,279	135,017
45.30	20,537	6,081	50.50	30,485	138,056
45.40	20,714	8,144	50.60	30,690	141,114
45.50	20,891	10,224	50.70	30,896	144,194
45.60	21,068	12,322	50.80	31,102	147,294
45.70	21,245	14,438	50.90	31,307	150,414
45.80	21,423	16,571	51.00	31,513	153,555
45.90	21,600	18,722			
46.00	21,777	20,891			
46.10	21,960	23,078			
46.20	22,144	25,283			
46.30	22,327	27,507			
46.40	22,510	29,748			
46.50	22,694	32,009			
46.60	22,877	34,287			
46.70	23,060	36,584			
46.80	23,243	38,899			
46.90	23,427	41,233			
47.00	23,610	43,585			
47.10	23,799	45,955			
47.20	23,988	48,344			
47.30	24,178	50,753			
47.40	24,367	53,180			
47.50	24,556	55,626			
47.60	24,745	58,091			
47.70	24,934	60,575			
47.80	25,124	63,078			
47.90	25,313	65,600			
48.00	25,502	68,141			
48.10	25,697	70,700			
48.20	25,892	73,280			
48.30	26,087	75,879			
48.40	26,282	78,497			
48.50	26,477	81,135			
48.60	26,671	83,793			
48.70	26,866	86,469			
48.80	27,061	89,166			
48.90	27,256	91,882			
49.00	27,451	94,617			
49.10	27,652	97,372			
49.20	27,852	100,147			
49.30	28,052	102,943			
49.40	28,253	105,758			
49.50	28,454	108,593			
49.60	28,654	111,449			
49.70	28,855	114,324			
49.80	29,055	117,219			
49.90	29,255	120,135			
50.00	29,456	123,071			
50.10	29,662	126,026			

Summary for Pond P-109: SWMB P-109

Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 1.48" for 1-yr event
 Inflow = 3.15 cfs @ 12.27 hrs, Volume= 25,063 cf
 Outflow = 1.00 cfs @ 13.03 hrs, Volume= 25,063 cf, Atten= 68%, Lag= 46.0 min
 Discarded = 1.00 cfs @ 13.03 hrs, Volume= 25,063 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 43.06' @ 13.03 hrs Surf.Area= 6,955 sf Storage= 6,857 cf

Plug-Flow detention time= 48.2 min calculated for 25,063 cf (100% of inflow)
 Center-of-Mass det. time= 48.1 min (887.9 - 839.8)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	26,865 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	5,939	0	0
43.00	6,891	6,415	6,415
44.00	7,900	7,396	13,811
45.00	8,966	8,433	22,244
45.50	9,519	4,621	26,865

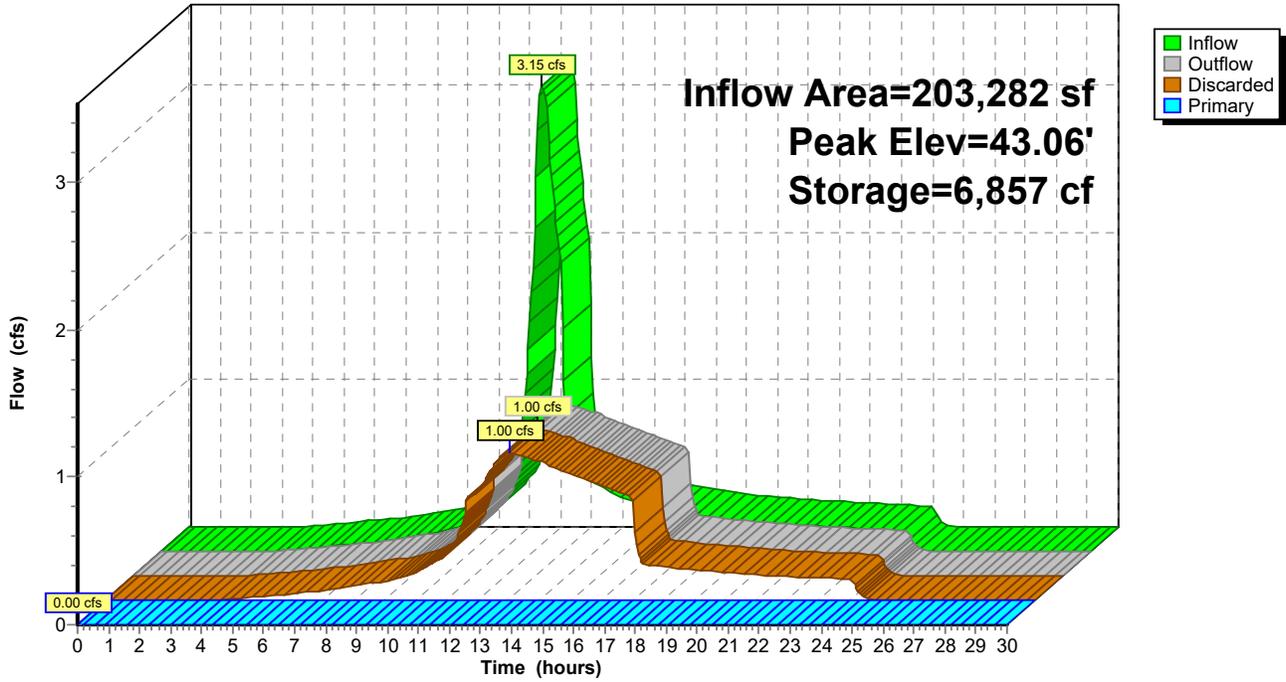
Device	Routing	Invert	Outlet Devices
#1	Primary	44.50'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	43.80'	1.0' long + 4.0 ' SideZ x 8.0' breadth Outlet Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Discarded	42.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 38.00'

Discarded OutFlow Max=1.00 cfs @ 13.03 hrs HW=43.06' (Free Discharge)
 ↑**3=Exfiltration** (Controls 1.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.00' (Free Discharge)
 ↑**1=Overflow Spillway** (Controls 0.00 cfs)
 ↑**2=Outlet Spillway** (Controls 0.00 cfs)

Pond P-109: SWMB P-109

Hydrograph



Stage-Discharge for Pond P-109: SWMB P-109

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
42.00	0.00	0.00	0.00	44.60	9.15	1.51	7.64
42.05	0.70	0.70	0.00	44.65	10.83	1.53	9.30
42.10	0.72	0.72	0.00	44.70	12.72	1.55	11.17
42.15	0.73	0.73	0.00	44.75	14.86	1.57	13.29
42.20	0.74	0.74	0.00	44.80	17.22	1.58	15.63
42.25	0.76	0.76	0.00	44.85	19.81	1.60	18.21
42.30	0.77	0.77	0.00	44.90	22.64	1.62	21.02
42.35	0.79	0.79	0.00	44.95	25.73	1.64	24.10
42.40	0.80	0.80	0.00	45.00	29.08	1.66	27.43
42.45	0.82	0.82	0.00	45.05	32.65	1.67	30.97
42.50	0.83	0.83	0.00	45.10	36.47	1.69	34.78
42.55	0.85	0.85	0.00	45.15	40.29	1.71	38.58
42.60	0.86	0.86	0.00	45.20	44.31	1.73	42.58
42.65	0.88	0.88	0.00	45.25	48.53	1.75	46.78
42.70	0.89	0.89	0.00	45.30	52.95	1.77	51.18
42.75	0.91	0.91	0.00	45.35	57.56	1.78	55.78
42.80	0.92	0.92	0.00	45.40	62.38	1.80	60.58
42.85	0.94	0.94	0.00	45.45	67.46	1.82	65.64
42.90	0.95	0.95	0.00	45.50	72.76	1.84	70.92
42.95	0.97	0.97	0.00				
43.00	0.98	0.98	0.00				
43.05	1.00	1.00	0.00				
43.10	1.01	1.01	0.00				
43.15	1.03	1.03	0.00				
43.20	1.04	1.04	0.00				
43.25	1.06	1.06	0.00				
43.30	1.08	1.08	0.00				
43.35	1.09	1.09	0.00				
43.40	1.11	1.11	0.00				
43.45	1.12	1.12	0.00				
43.50	1.14	1.14	0.00				
43.55	1.16	1.16	0.00				
43.60	1.17	1.17	0.00				
43.65	1.19	1.19	0.00				
43.70	1.21	1.21	0.00				
43.75	1.22	1.22	0.00				
43.80	1.24	1.24	0.00				
43.85	1.29	1.26	0.03				
43.90	1.37	1.27	0.10				
43.95	1.50	1.29	0.21				
44.00	1.66	1.31	0.36				
44.05	1.88	1.32	0.55				
44.10	2.14	1.34	0.80				
44.15	2.46	1.36	1.10				
44.20	2.84	1.37	1.47				
44.25	3.29	1.39	1.90				
44.30	3.82	1.41	2.41				
44.35	4.42	1.43	2.99				
44.40	5.11	1.44	3.66				
44.45	5.81	1.46	4.35				
44.50	6.59	1.48	5.11				
44.55	7.72	1.50	6.22				

Stage-Area-Storage for Pond P-109: SWMB P-109

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
42.00	5,939	0	44.60	8,540	18,742
42.05	5,987	298	44.65	8,593	19,171
42.10	6,034	599	44.70	8,646	19,602
42.15	6,082	902	44.75	8,700	20,035
42.20	6,129	1,207	44.80	8,753	20,472
42.25	6,177	1,515	44.85	8,806	20,911
42.30	6,225	1,825	44.90	8,859	21,352
42.35	6,272	2,137	44.95	8,913	21,797
42.40	6,320	2,452	45.00	8,966	22,244
42.45	6,367	2,769	45.05	9,021	22,693
42.50	6,415	3,089	45.10	9,077	23,146
42.55	6,463	3,410	45.15	9,132	23,601
42.60	6,510	3,735	45.20	9,187	24,059
42.65	6,558	4,061	45.25	9,243	24,520
42.70	6,605	4,391	45.30	9,298	24,983
42.75	6,653	4,722	45.35	9,353	25,449
42.80	6,701	5,056	45.40	9,408	25,918
42.85	6,748	5,392	45.45	9,464	26,390
42.90	6,796	5,731	45.50	9,519	26,865
42.95	6,843	6,072			
43.00	6,891	6,415			
43.05	6,941	6,761			
43.10	6,992	7,109			
43.15	7,042	7,460			
43.20	7,093	7,813			
43.25	7,143	8,169			
43.30	7,194	8,528			
43.35	7,244	8,889			
43.40	7,295	9,252			
43.45	7,345	9,618			
43.50	7,396	9,987			
43.55	7,446	10,358			
43.60	7,496	10,731			
43.65	7,547	11,107			
43.70	7,597	11,486			
43.75	7,648	11,867			
43.80	7,698	12,251			
43.85	7,749	12,637			
43.90	7,799	13,026			
43.95	7,850	13,417			
44.00	7,900	13,811			
44.05	7,953	14,207			
44.10	8,007	14,606			
44.15	8,060	15,007			
44.20	8,113	15,412			
44.25	8,167	15,819			
44.30	8,220	16,228			
44.35	8,273	16,641			
44.40	8,326	17,056			
44.45	8,380	17,473			
44.50	8,433	17,894			
44.55	8,486	18,317			

Summary for Pond SB-LS: SB-LS

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 0.03" for 1-yr event
 Inflow = 0.00 cfs @ 24.34 hrs, Volume= 136 cf
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 40.90' @ 30.00 hrs Surf.Area= 391 sf Storage= 136 cf

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

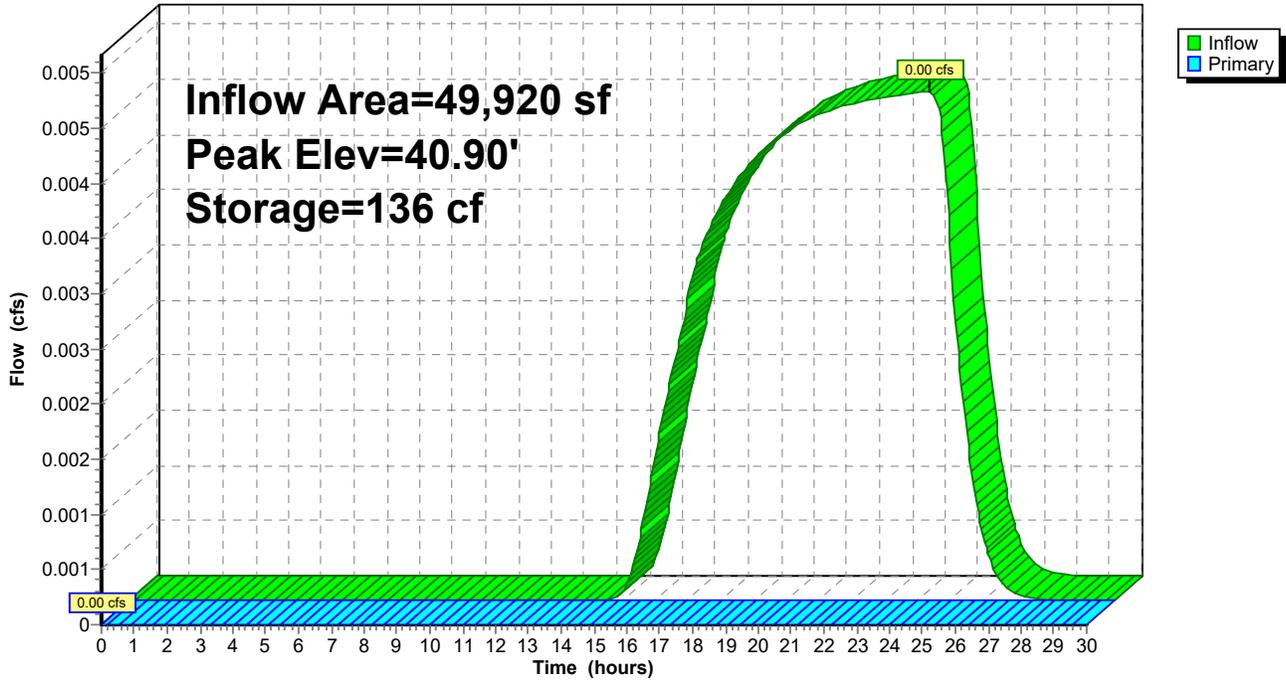
Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	3,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
40.50	290	0	0
41.00	416	177	177
42.00	741	579	755
43.00	1,489	1,115	1,870
43.50	1,747	809	2,679
44.00	2,020	942	3,621

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	50.0' long + 3.0 ' SideZ x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=40.50' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond SB-LS: SB-LS

Hydrograph



Stage-Discharge for Pond SB-LS: SB-LS

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
40.50	0.00	41.54	0.00	42.58	0.00	43.62	4.95
40.52	0.00	41.56	0.00	42.60	0.00	43.64	6.25
40.54	0.00	41.58	0.00	42.62	0.00	43.66	7.64
40.56	0.00	41.60	0.00	42.64	0.00	43.68	9.13
40.58	0.00	41.62	0.00	42.66	0.00	43.70	10.70
40.60	0.00	41.64	0.00	42.68	0.00	43.72	12.43
40.62	0.00	41.66	0.00	42.70	0.00	43.74	14.26
40.64	0.00	41.68	0.00	42.72	0.00	43.76	16.19
40.66	0.00	41.70	0.00	42.74	0.00	43.78	18.21
40.68	0.00	41.72	0.00	42.76	0.00	43.80	20.34
40.70	0.00	41.74	0.00	42.78	0.00	43.82	22.55
40.72	0.00	41.76	0.00	42.80	0.00	43.84	24.86
40.74	0.00	41.78	0.00	42.82	0.00	43.86	27.27
40.76	0.00	41.80	0.00	42.84	0.00	43.88	29.77
40.78	0.00	41.82	0.00	42.86	0.00	43.90	32.36
40.80	0.00	41.84	0.00	42.88	0.00	43.92	35.11
40.82	0.00	41.86	0.00	42.90	0.00	43.94	37.97
40.84	0.00	41.88	0.00	42.92	0.00	43.96	40.93
40.86	0.00	41.90	0.00	42.94	0.00	43.98	43.99
40.88	0.00	41.92	0.00	42.96	0.00	44.00	47.16
40.90	0.00	41.94	0.00	42.98	0.00		
40.92	0.00	41.96	0.00	43.00	0.00		
40.94	0.00	41.98	0.00	43.02	0.00		
40.96	0.00	42.00	0.00	43.04	0.00		
40.98	0.00	42.02	0.00	43.06	0.00		
41.00	0.00	42.04	0.00	43.08	0.00		
41.02	0.00	42.06	0.00	43.10	0.00		
41.04	0.00	42.08	0.00	43.12	0.00		
41.06	0.00	42.10	0.00	43.14	0.00		
41.08	0.00	42.12	0.00	43.16	0.00		
41.10	0.00	42.14	0.00	43.18	0.00		
41.12	0.00	42.16	0.00	43.20	0.00		
41.14	0.00	42.18	0.00	43.22	0.00		
41.16	0.00	42.20	0.00	43.24	0.00		
41.18	0.00	42.22	0.00	43.26	0.00		
41.20	0.00	42.24	0.00	43.28	0.00		
41.22	0.00	42.26	0.00	43.30	0.00		
41.24	0.00	42.28	0.00	43.32	0.00		
41.26	0.00	42.30	0.00	43.34	0.00		
41.28	0.00	42.32	0.00	43.36	0.00		
41.30	0.00	42.34	0.00	43.38	0.00		
41.32	0.00	42.36	0.00	43.40	0.00		
41.34	0.00	42.38	0.00	43.42	0.00		
41.36	0.00	42.40	0.00	43.44	0.00		
41.38	0.00	42.42	0.00	43.46	0.00		
41.40	0.00	42.44	0.00	43.48	0.00		
41.42	0.00	42.46	0.00	43.50	0.00		
41.44	0.00	42.48	0.00	43.52	0.34		
41.46	0.00	42.50	0.00	43.54	0.95		
41.48	0.00	42.52	0.00	43.56	1.75		
41.50	0.00	42.54	0.00	43.58	2.69		
41.52	0.00	42.56	0.00	43.60	3.77		

Stage-Area-Storage for Pond SB-LS: SB-LS

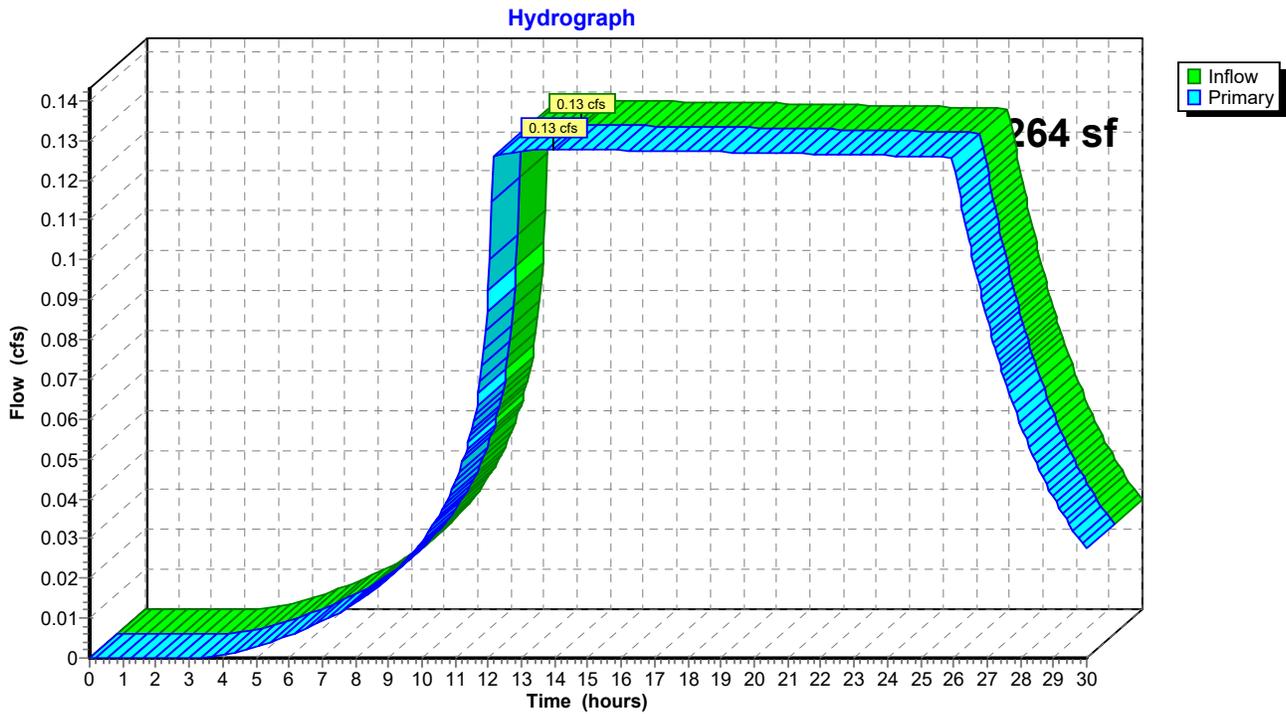
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
40.50	290	0	43.10	1,541	2,021
40.55	303	15	43.15	1,566	2,099
40.60	315	30	43.20	1,592	2,178
40.65	328	46	43.25	1,618	2,258
40.70	340	63	43.30	1,644	2,340
40.75	353	80	43.35	1,670	2,423
40.80	366	98	43.40	1,695	2,507
40.85	378	117	43.45	1,721	2,592
40.90	391	136	43.50	1,747	2,679
40.95	403	156	43.55	1,774	2,767
41.00	416	177	43.60	1,802	2,856
41.05	432	198	43.65	1,829	2,947
41.10	449	220	43.70	1,856	3,039
41.15	465	243	43.75	1,884	3,133
41.20	481	266	43.80	1,911	3,228
41.25	497	291	43.85	1,938	3,324
41.30	513	316	43.90	1,965	3,421
41.35	530	342	43.95	1,993	3,520
41.40	546	369	44.00	2,020	3,621
41.45	562	397			
41.50	579	425			
41.55	595	454			
41.60	611	485			
41.65	627	516			
41.70	644	547			
41.75	660	580			
41.80	676	613			
41.85	692	648			
41.90	708	683			
41.95	725	718			
42.00	741	755			
42.05	778	793			
42.10	816	833			
42.15	853	875			
42.20	891	918			
42.25	928	964			
42.30	965	1,011			
42.35	1,003	1,060			
42.40	1,040	1,111			
42.45	1,078	1,164			
42.50	1,115	1,219			
42.55	1,152	1,276			
42.60	1,190	1,334			
42.65	1,227	1,395			
42.70	1,265	1,457			
42.75	1,302	1,521			
42.80	1,339	1,587			
42.85	1,377	1,655			
42.90	1,414	1,725			
42.95	1,452	1,796			
43.00	1,489	1,870			
43.05	1,515	1,945			

Summary for Link DP-1: Wetlands WA2 - WA12

Inflow Area = 757,264 sf, 63.15% Impervious, Inflow Depth > 0.13" for 1-yr event
Inflow = 0.13 cfs @ 13.94 hrs, Volume= 7,900 cf
Primary = 0.13 cfs @ 13.94 hrs, Volume= 7,900 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA12



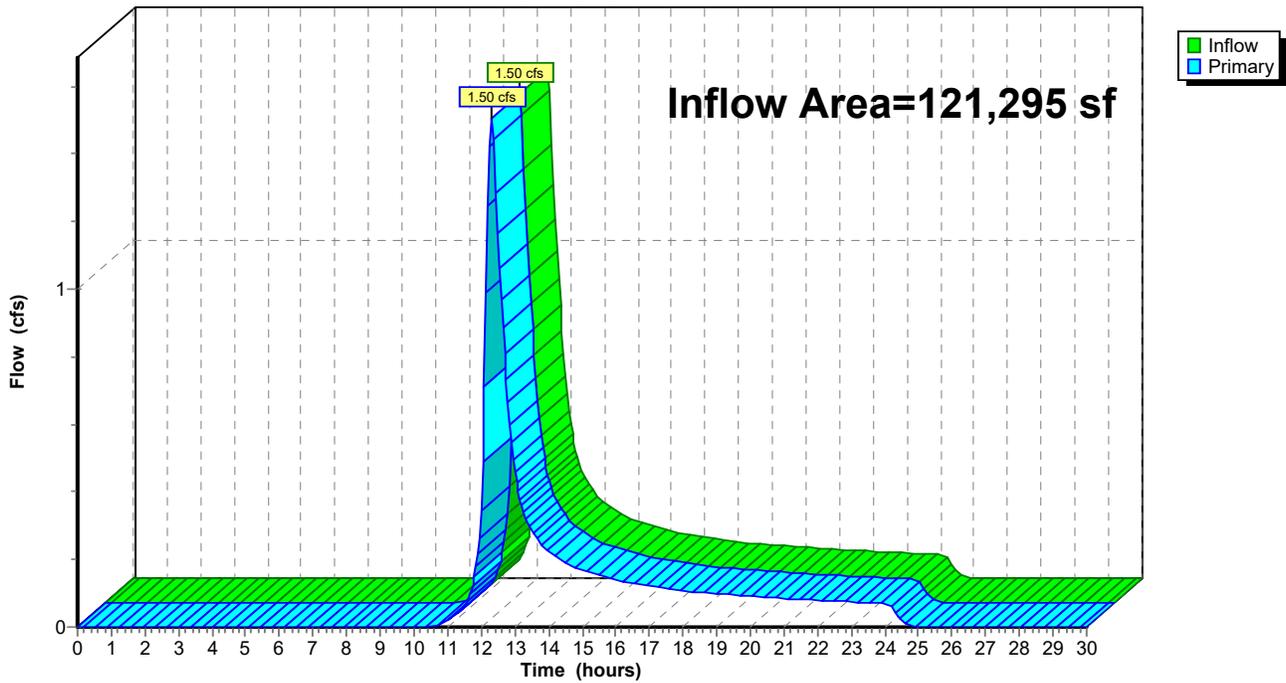
Summary for Link DP-2: Frontage Road

Inflow Area = 121,295 sf, 29.98% Impervious, Inflow Depth = 0.88" for 1-yr event
Inflow = 1.50 cfs @ 12.32 hrs, Volume= 8,927 cf
Primary = 1.50 cfs @ 12.32 hrs, Volume= 8,927 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-2: Frontage Road

Hydrograph



Summary for Subcatchment PDA-101: PDA-101

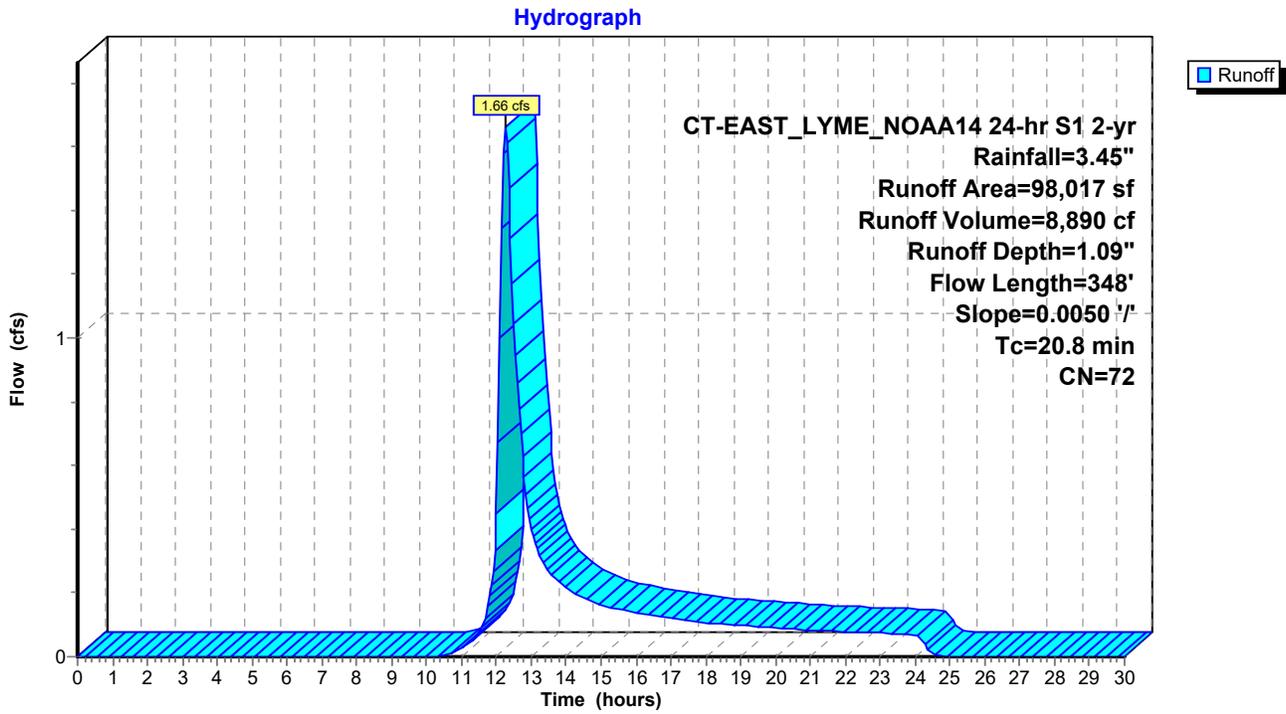
Runoff = 1.66 cfs @ 12.26 hrs, Volume= 8,890 cf, Depth= 1.09"
 Routed to Pond P-101 : SWMB P-101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
15,098	55	Woods, Good, HSG B
28,559	48	Brush, Good, HSG B
12,892	61	>75% Grass cover, Good, HSG B
41,468	98	Paved parking, HSG B
98,017	72	Weighted Average
56,549		57.69% Pervious Area
41,468		42.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0050	0.06		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.40"
6.4	190	0.0050	0.49		Shallow Concentrated Flow, Brush Short Grass Pasture Kv= 7.0 fps
0.6	108	0.0050	3.21	2.52	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
20.8	348	Total			

Subcatchment PDA-101: PDA-101



Summary for Subcatchment PDA-102: PDA-102

Runoff = 6.30 cfs @ 12.05 hrs, Volume= 19,667 cf, Depth= 2.69"
 Routed to Pond P-102 : SWMB P-102

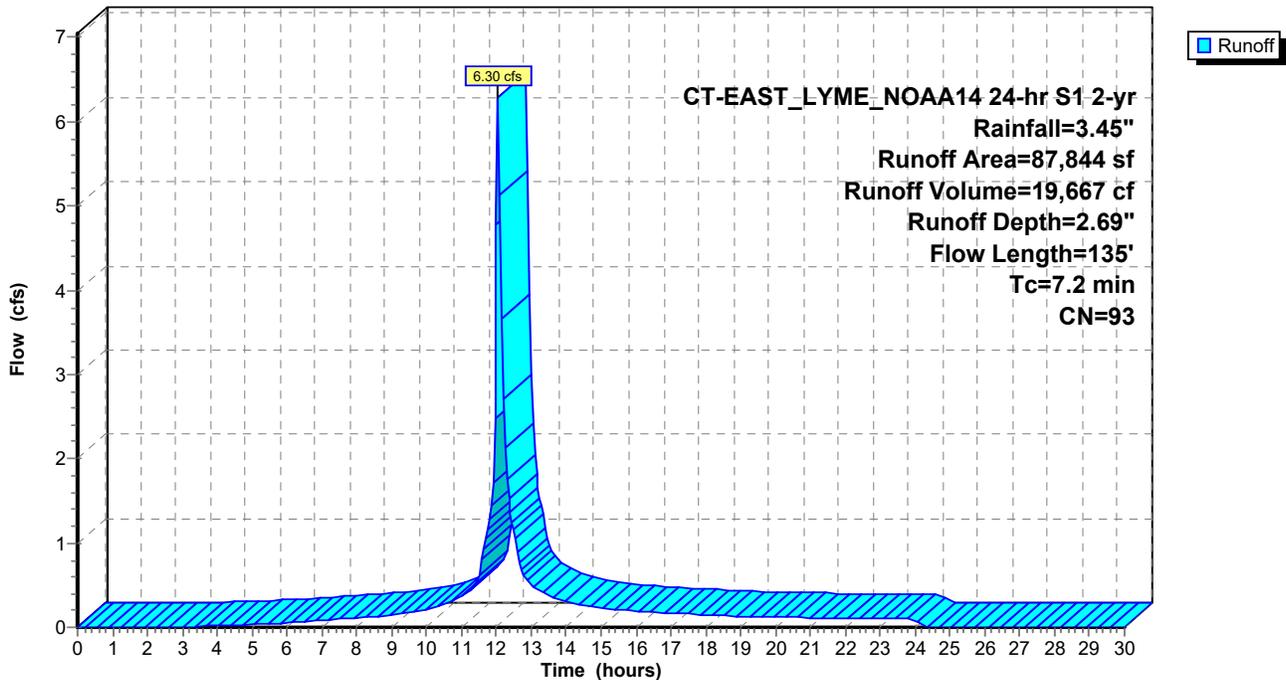
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
12,499	61	>75% Grass cover, Good, HSG B
75,345	98	Paved parking, HSG B
87,844	93	Weighted Average
12,499		14.23% Pervious Area
75,345		85.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	45	0.0100	0.11		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 3.40"
0.6	90	0.0150	2.49		Shallow Concentrated Flow, Paved Paved Kv= 20.3 fps
7.2	135	Total			

Subcatchment PDA-102: PDA-102

Hydrograph



Summary for Subcatchment PDA-103: PDA-103

Runoff = 1.98 cfs @ 12.02 hrs, Volume= 5,807 cf, Depth= 2.89"
 Routed to Pond P-103 : SWMB P-103

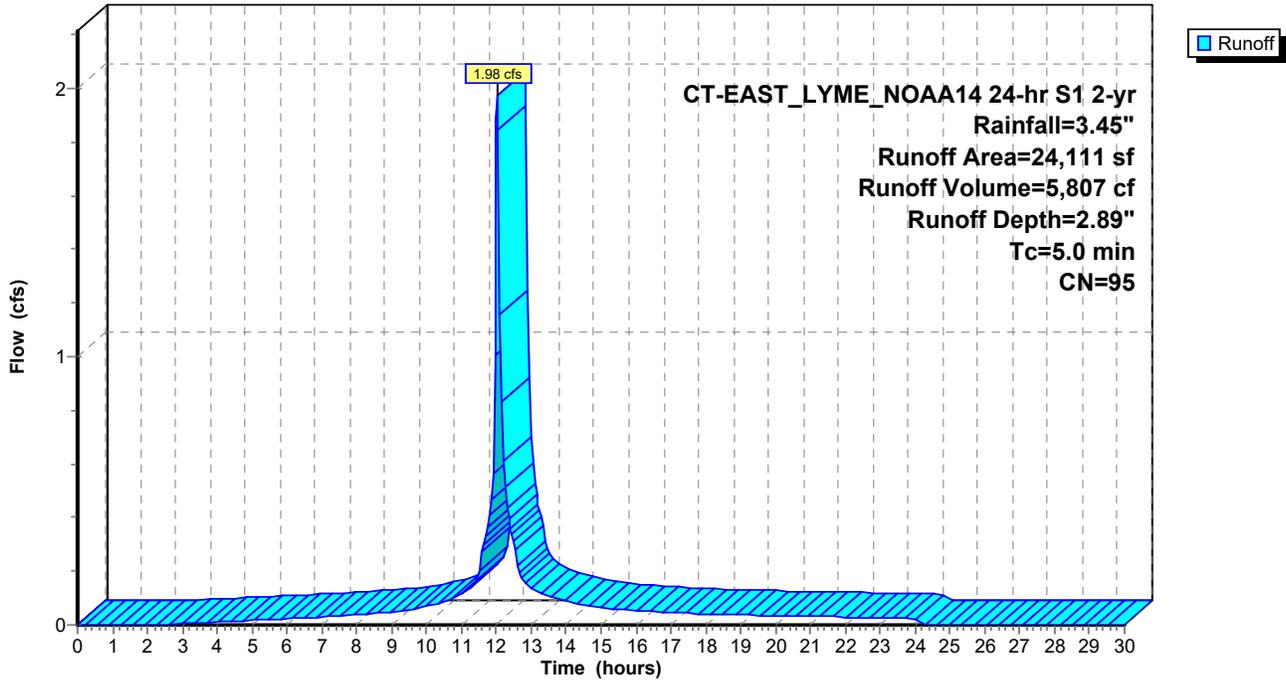
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
2,159	61	>75% Grass cover, Good, HSG B
21,952	98	Paved parking, HSG B
24,111	95	Weighted Average
2,159		8.95% Pervious Area
21,952		91.05% Impervious Area

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

Subcatchment PDA-103: PDA-103

Hydrograph



Summary for Subcatchment PDA-104: PDA-104

Runoff = 0.01 cfs @ 15.16 hrs, Volume= 476 cf, Depth= 0.11"
 Routed to Reach 1R : Grass Swale

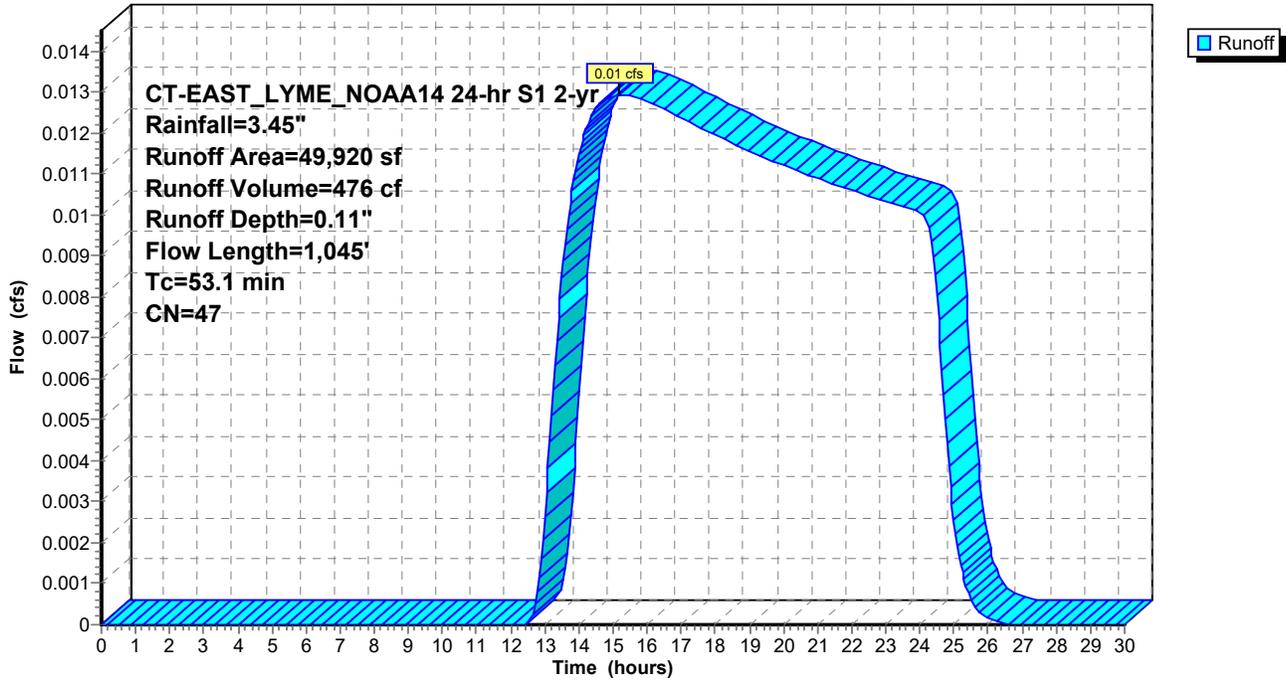
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
10,624	30	Woods, Good, HSG A
29,321	55	Woods, Good, HSG B
7,850	39	>75% Grass cover, Good, HSG A
2,125	61	>75% Grass cover, Good, HSG B
49,920	47	Weighted Average
49,920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	75	0.0050	0.04		Sheet Flow, Sheet Woods: Light underbrush n= 0.400 P2= 3.40"
9.0	190	0.0050	0.35		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
13.1	480	0.0150	0.61		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
2.2	300	0.0050	2.25	8.99	Channel Flow, Grass Swale Area= 4.0 sf Perim= 12.4' r= 0.32' n= 0.022 Earth, clean & straight
53.1	1,045	Total			

Subcatchment PDA-104: PDA-104

Hydrograph



Summary for Subcatchment PDA-105: PDA-105

Runoff = 1.43 cfs @ 12.02 hrs, Volume= 4,196 cf, Depth= 2.89"
 Routed to Pond P-104 : P-104

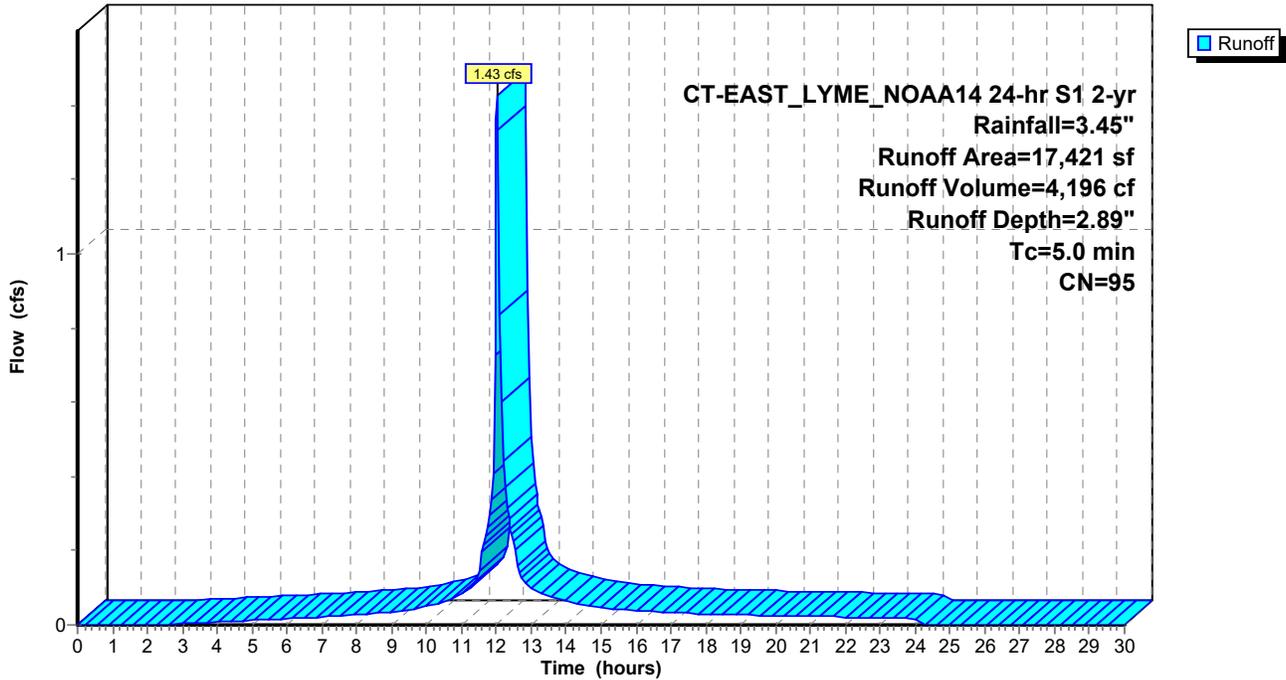
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
15,999	98	Paved parking, HSG B
1,422	61	>75% Grass cover, Good, HSG B
17,421	95	Weighted Average
1,422		8.16% Pervious Area
15,999		91.84% Impervious Area

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

Subcatchment PDA-105: PDA-105

Hydrograph



Summary for Subcatchment PDA-106: PDA-106

Runoff = 0.69 cfs @ 12.03 hrs, Volume= 1,966 cf, Depth= 2.05"
 Routed to Reach 2R : 18" HDPE

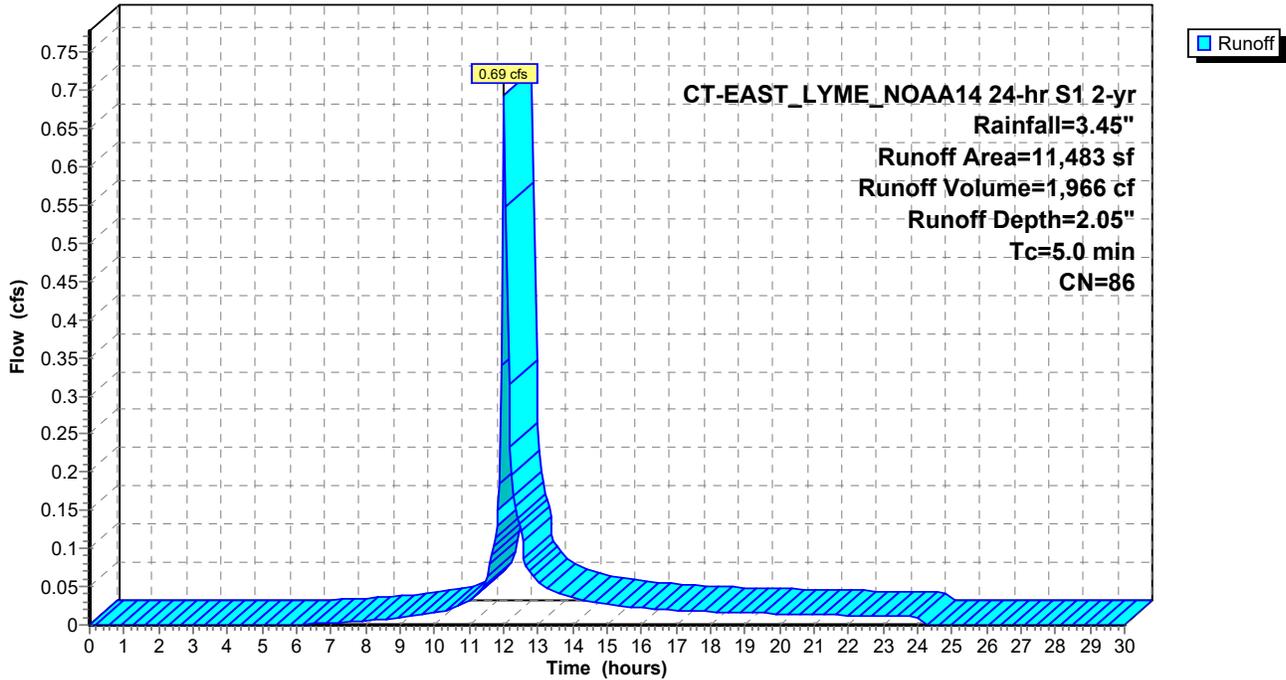
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
3,625	61	>75% Grass cover, Good, HSG B
7,858	98	Paved parking, HSG B
11,483	86	Weighted Average
3,625		31.57% Pervious Area
7,858		68.43% Impervious Area

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

Subcatchment PDA-106: PDA-106

Hydrograph



Summary for Subcatchment PDA-107: PDA-107

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
 Routed to Link DP-1 : Wetlands WA2 - WA12

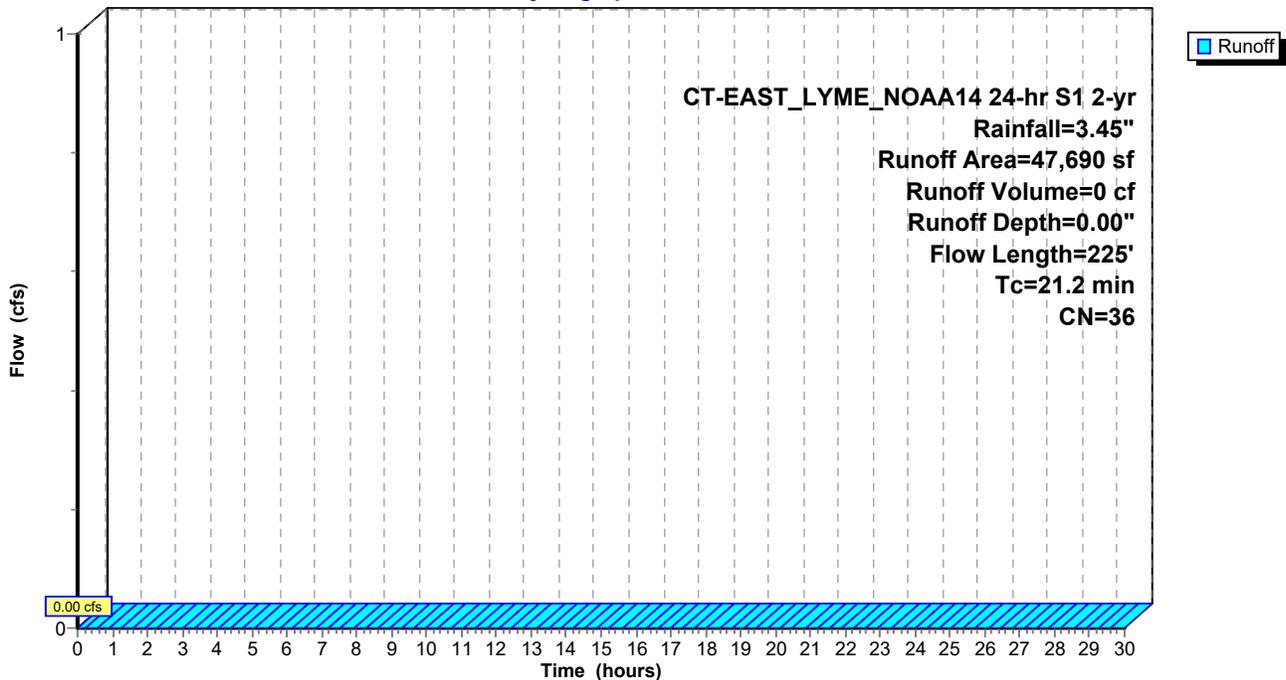
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
20,022	30	Woods, Good, HSG A
5,821	39	>75% Grass cover, Good, HSG A
2,302	61	>75% Grass cover, Good, HSG B
19,545	39	Pasture/grassland/range, Good, HSG A
47,690	36	Weighted Average
47,690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
5.1	150	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.1	15	0.1300	1.80		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
21.2	225	Total			

Subcatchment PDA-107: PDA-107

Hydrograph



Summary for Subcatchment PDA-108: PDA-108 - ROOF

Runoff = 15.96 cfs @ 12.02 hrs, Volume= 49,359 cf, Depth= 3.22"
 Routed to Pond P-105 : SWMB P-105

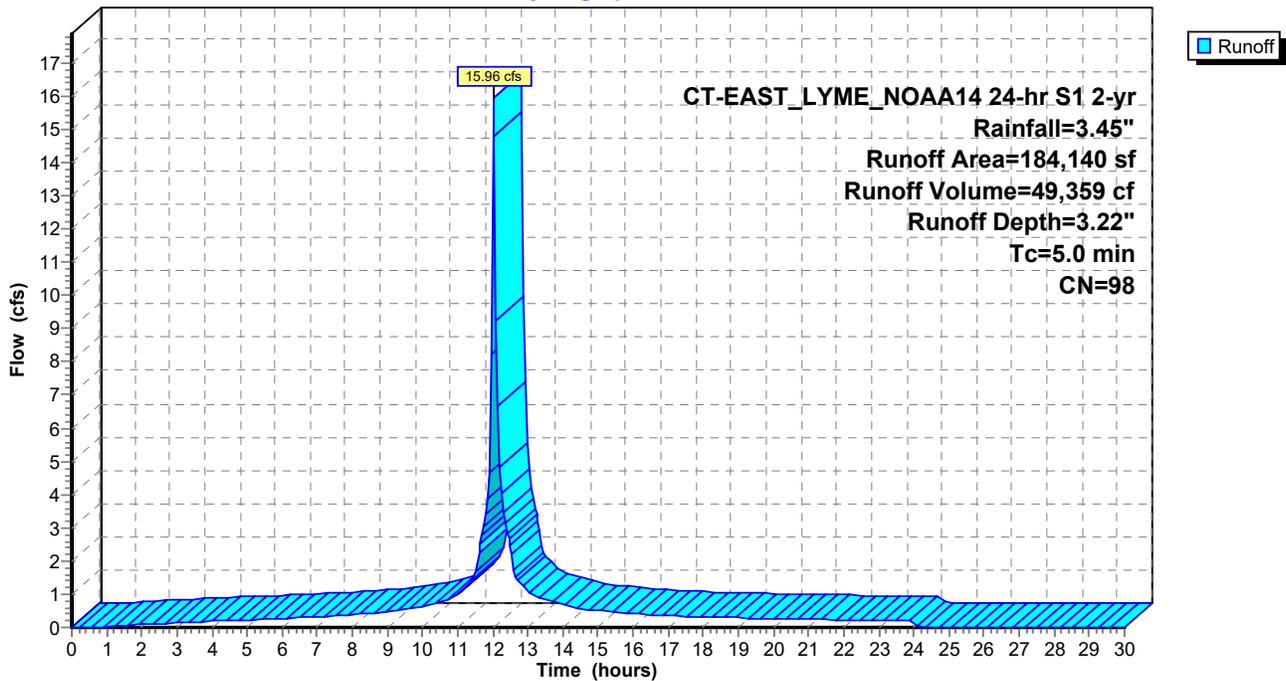
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
20,237	98	Roofs, HSG B
163,903	98	Roofs, HSG A
184,140	98	Weighted Average
184,140		100.00% Impervious Area

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

Subcatchment PDA-108: PDA-108 - ROOF

Hydrograph



Summary for Subcatchment PDA-109: PDA-109

Runoff = 3.75 cfs @ 12.03 hrs, Volume= 10,724 cf, Depth= 2.14"
 Routed to Pond P-106 : SWMB-106

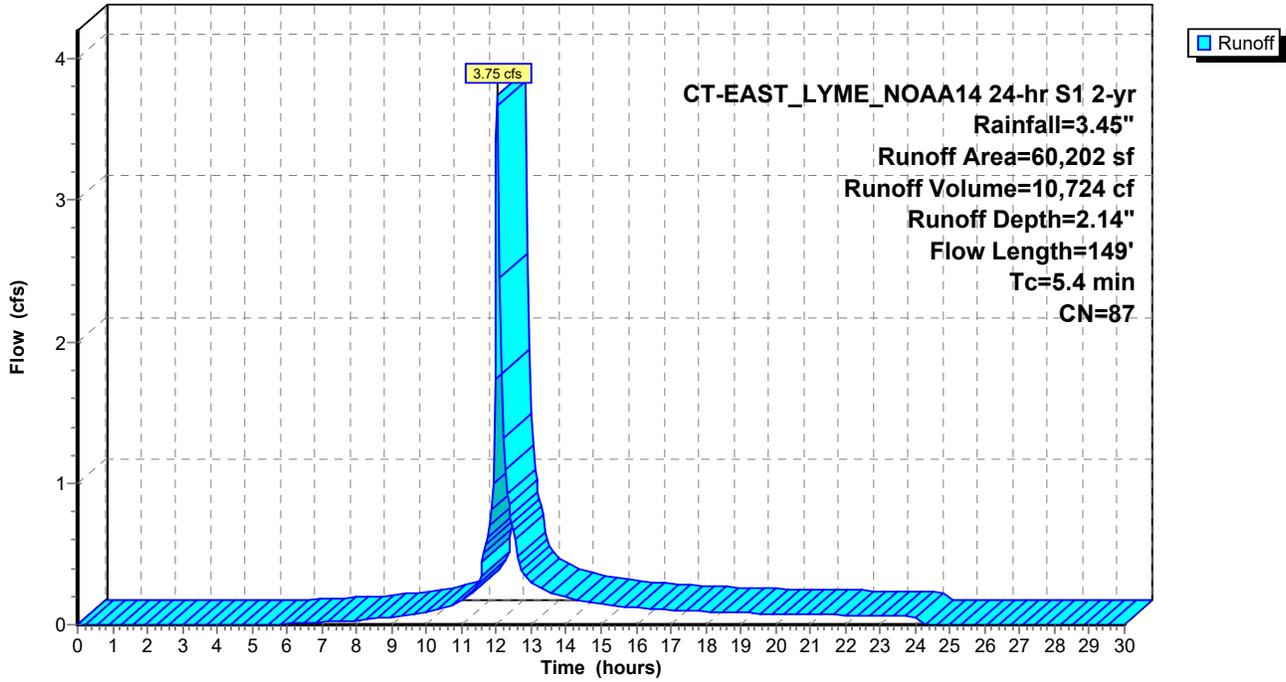
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
35,618	98	Paved parking, HSG A
11,394	98	Paved parking, HSG B
8,291	39	>75% Grass cover, Good, HSG A
4,899	61	>75% Grass cover, Good, HSG B
60,202	87	Weighted Average
13,190		21.91% Pervious Area
47,012		78.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	45	0.0200	0.15		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.1	20	0.0150	2.49		Shallow Concentrated Flow, gutter flow Paved Kv= 20.3 fps
0.3	84	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
5.4	149	Total			

Subcatchment PDA-109: PDA-109

Hydrograph



Summary for Subcatchment PDA-110: PDA-110

Runoff = 7.28 cfs @ 12.02 hrs, Volume= 21,104 cf, Depth= 2.79"
 Routed to Pond P-107 : SWMB P-107

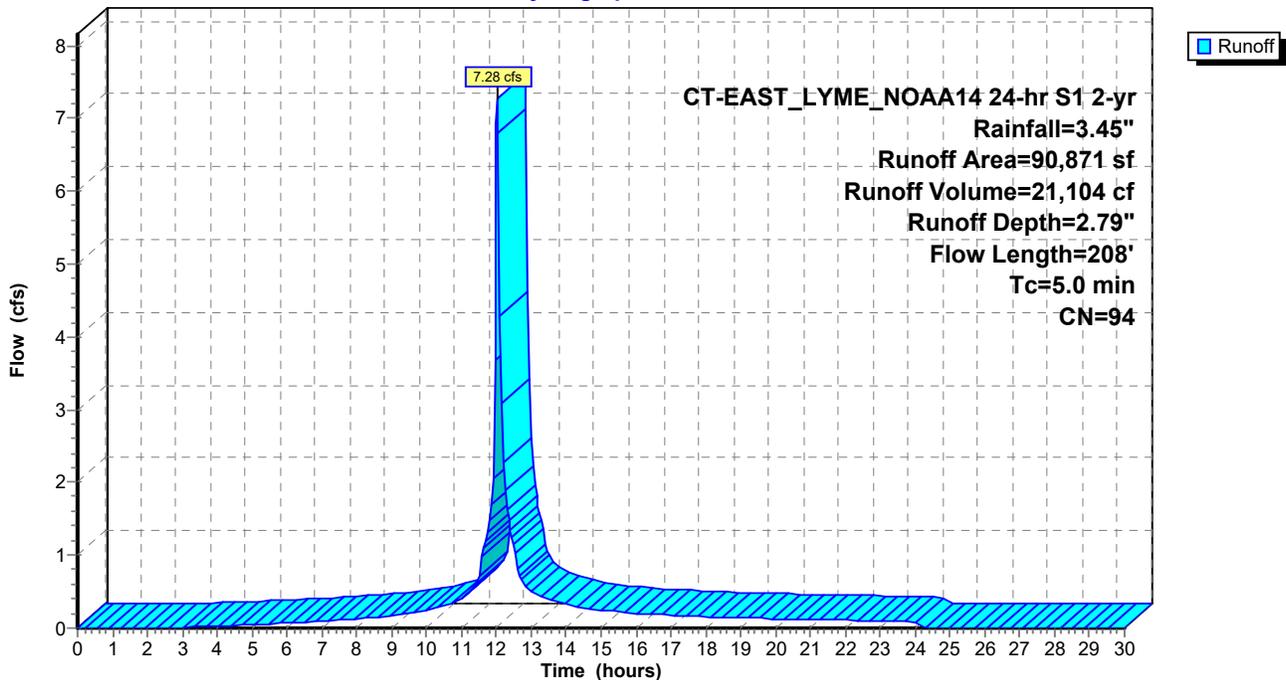
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
84,435	98	Paved parking, HSG A
6,436	39	>75% Grass cover, Good, HSG A
90,871	94	Weighted Average
6,436		7.08% Pervious Area
84,435		92.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	20	0.0200	0.13		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.5	70	0.0150	2.49		Shallow Concentrated Flow, Gutter Flow Paved Kv= 20.3 fps
0.4	118	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
3.5	208	Total, Increased to minimum Tc = 5.0 min			

Subcatchment PDA-110: PDA-110

Hydrograph



Summary for Subcatchment PDA-111: PDA-111

Runoff = 0.01 cfs @ 23.99 hrs, Volume= 156 cf, Depth= 0.02"
 Routed to Link DP-1 : Wetlands WA2 - WA12

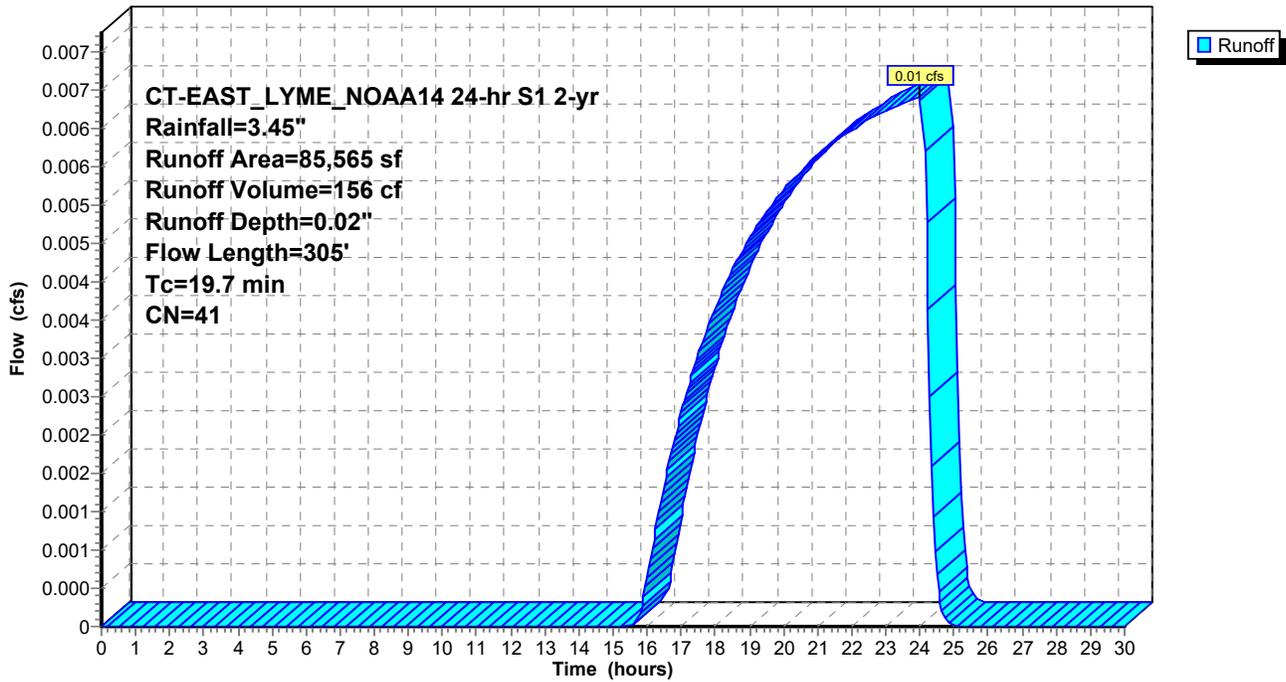
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
36,238	30	Woods, Good, HSG A
27,610	39	>75% Grass cover, Good, HSG A
3,052	55	Woods, Good, HSG B
18,665	61	Pasture/grassland/range, Good, HSG B
85,565	41	Weighted Average
85,565		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		Sheet Flow, Wooded
					Woods: Light underbrush n= 0.400 P2= 3.40"
3.9	255	0.0470	1.08		Shallow Concentrated Flow, Wooded
					Woodland Kv= 5.0 fps
19.7	305	Total			

Subcatchment PDA-111: PDA-111

Hydrograph



Summary for Subcatchment PDA-200: PDA-200

Runoff = 2.24 cfs @ 12.31 hrs, Volume= 12,802 cf, Depth= 1.27"

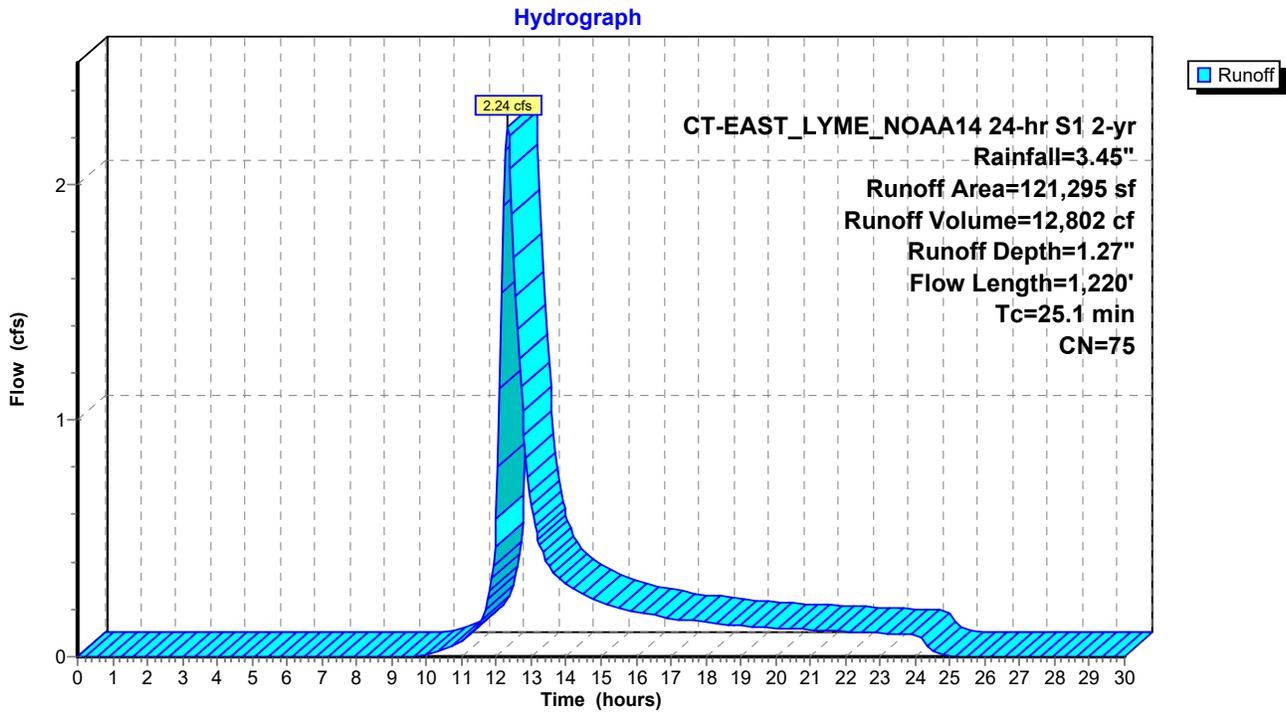
Routed to Link DP-2 : Frontage Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 2-yr Rainfall=3.45"

Area (sf)	CN	Description
23,430	61	Pasture/grassland/range, Good, HSG B
52,449	61	>75% Grass cover, Good, HSG B
35,803	98	Paved parking, HSG B
567	98	Paved parking, HSG A
8,668	96	Gravel surface, HSG B
378	39	>75% Grass cover, Good, HSG A
121,295	75	Weighted Average
84,925		70.02% Pervious Area
36,370		29.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
3.2	60	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.9	160	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
2.9	930	0.0100	5.26	6.46	Pipe Channel, Piping 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
25.1	1,220	Total			

Subcatchment PDA-200: PDA-200



Summary for Reach 1R: Grass Swale

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 0.11" for 2-yr event
 Inflow = 0.01 cfs @ 15.16 hrs, Volume= 476 cf
 Outflow = 0.01 cfs @ 15.52 hrs, Volume= 476 cf, Atten= 0%, Lag= 21.7 min
 Routed to Pond SB-LS : SB-LS

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.46 fps, Min. Travel Time= 11.2 min
 Avg. Velocity = 0.40 fps, Avg. Travel Time= 13.0 min

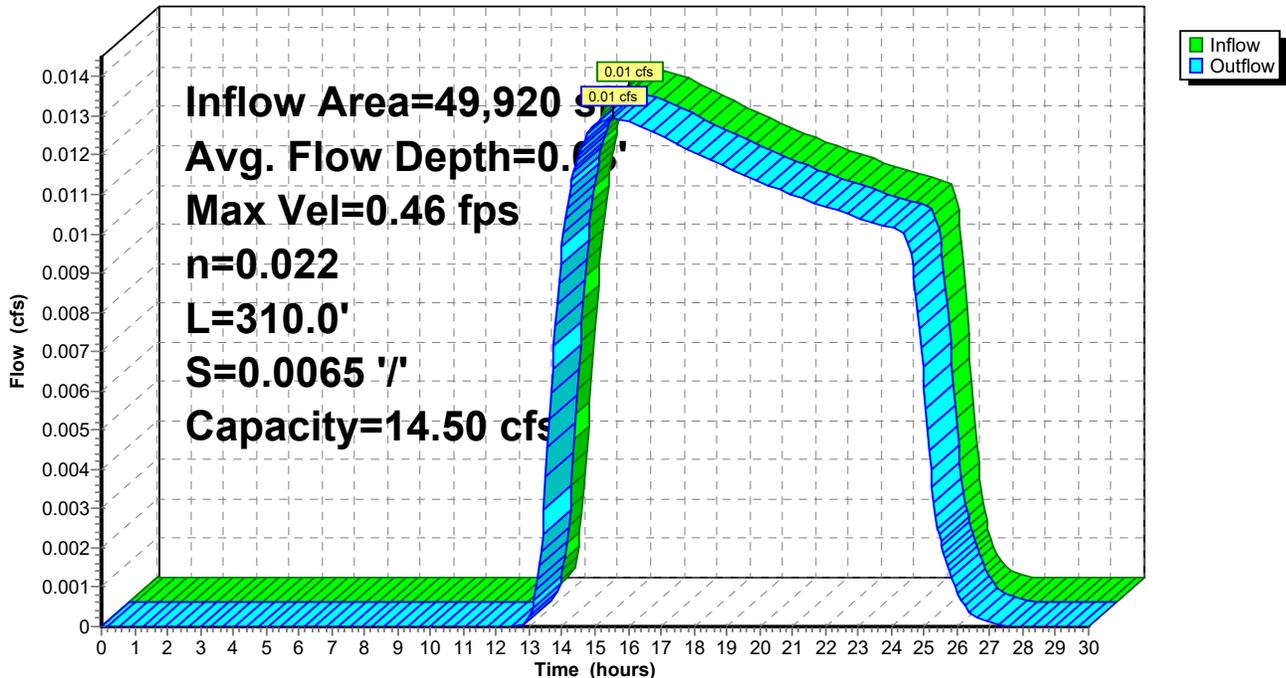
Peak Storage= 9 cf @ 15.33 hrs
 Average Depth at Peak Storage= 0.03' , Surface Width= 1.16'
 Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 14.50 cfs

1.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight
 Side Slope Z-value= 3.0 '/' Top Width= 7.00'
 Length= 310.0' Slope= 0.0065 '/'
 Inlet Invert= 47.00', Outlet Invert= 45.00'



Reach 1R: Grass Swale

Hydrograph



Stage-Discharge for Reach 1R: Grass Swale

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
47.00	0.00	0.00	47.52	2.49	3.31
47.01	0.25	0.00	47.53	2.51	3.45
47.02	0.38	0.01	47.54	2.54	3.59
47.03	0.49	0.02	47.55	2.57	3.74
47.04	0.59	0.03	47.56	2.59	3.89
47.05	0.67	0.04	47.57	2.62	4.05
47.06	0.75	0.05	47.58	2.65	4.20
47.07	0.82	0.07	47.59	2.67	4.37
47.08	0.88	0.09	47.60	2.70	4.53
47.09	0.95	0.11	47.61	2.72	4.70
47.10	1.00	0.13	47.62	2.75	4.87
47.11	1.06	0.15	47.63	2.77	5.05
47.12	1.11	0.18	47.64	2.80	5.23
47.13	1.16	0.21	47.65	2.82	5.41
47.14	1.21	0.24	47.66	2.85	5.60
47.15	1.26	0.27	47.67	2.87	5.79
47.16	1.30	0.31	47.68	2.90	5.99
47.17	1.35	0.35	47.69	2.92	6.19
47.18	1.39	0.39	47.70	2.94	6.39
47.19	1.43	0.43	47.71	2.97	6.60
47.20	1.47	0.47	47.72	2.99	6.81
47.21	1.51	0.52	47.73	3.02	7.02
47.22	1.55	0.57	47.74	3.04	7.24
47.23	1.59	0.62	47.75	3.06	7.47
47.24	1.63	0.67	47.76	3.09	7.70
47.25	1.66	0.73	47.77	3.11	7.93
47.26	1.70	0.79	47.78	3.13	8.17
47.27	1.73	0.85	47.79	3.16	8.41
47.28	1.77	0.91	47.80	3.18	8.65
47.29	1.80	0.98	47.81	3.20	8.90
47.30	1.84	1.05	47.82	3.23	9.15
47.31	1.87	1.12	47.83	3.25	9.41
47.32	1.90	1.19	47.84	3.27	9.68
47.33	1.93	1.27	47.85	3.29	9.94
47.34	1.97	1.35	47.86	3.32	10.21
47.35	2.00	1.43	47.87	3.34	10.49
47.36	2.03	1.52	47.88	3.36	10.77
47.37	2.06	1.61	47.89	3.38	11.06
47.38	2.09	1.70	47.90	3.41	11.34
47.39	2.12	1.79	47.91	3.43	11.64
47.40	2.15	1.89	47.92	3.45	11.94
47.41	2.18	1.99	47.93	3.47	12.24
47.42	2.21	2.10	47.94	3.49	12.55
47.43	2.24	2.20	47.95	3.52	12.86
47.44	2.27	2.31	47.96	3.54	13.18
47.45	2.29	2.43	47.97	3.56	13.50
47.46	2.32	2.54	47.98	3.58	13.83
47.47	2.35	2.66	47.99	3.60	14.16
47.48	2.38	2.79	48.00	3.62	14.50
47.49	2.41	2.91			
47.50	2.43	3.04			
47.51	2.46	3.17			

Stage-Area-Storage for Reach 1R: Grass Swale

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
47.00	0.0	0	47.52	1.3	413
47.01	0.0	3	47.53	1.4	426
47.02	0.0	7	47.54	1.4	439
47.03	0.0	10	47.55	1.5	452
47.04	0.0	14	47.56	1.5	465
47.05	0.1	18	47.57	1.5	479
47.06	0.1	22	47.58	1.6	493
47.07	0.1	26	47.59	1.6	507
47.08	0.1	31	47.60	1.7	521
47.09	0.1	35	47.61	1.7	535
47.10	0.1	40	47.62	1.8	550
47.11	0.1	45	47.63	1.8	564
47.12	0.2	51	47.64	1.9	579
47.13	0.2	56	47.65	1.9	594
47.14	0.2	62	47.66	2.0	610
47.15	0.2	67	47.67	2.0	625
47.16	0.2	73	47.68	2.1	641
47.17	0.3	80	47.69	2.1	657
47.18	0.3	86	47.70	2.2	673
47.19	0.3	92	47.71	2.2	689
47.20	0.3	99	47.72	2.3	705
47.21	0.3	106	47.73	2.3	722
47.22	0.4	113	47.74	2.4	739
47.23	0.4	120	47.75	2.4	756
47.24	0.4	128	47.76	2.5	773
47.25	0.4	136	47.77	2.5	790
47.26	0.5	143	47.78	2.6	808
47.27	0.5	151	47.79	2.7	825
47.28	0.5	160	47.80	2.7	843
47.29	0.5	168	47.81	2.8	861
47.30	0.6	177	47.82	2.8	880
47.31	0.6	185	47.83	2.9	898
47.32	0.6	194	47.84	3.0	917
47.33	0.7	204	47.85	3.0	935
47.34	0.7	213	47.86	3.1	954
47.35	0.7	222	47.87	3.1	974
47.36	0.7	232	47.88	3.2	993
47.37	0.8	242	47.89	3.3	1,013
47.38	0.8	252	47.90	3.3	1,032
47.39	0.8	262	47.91	3.4	1,052
47.40	0.9	273	47.92	3.5	1,072
47.41	0.9	283	47.93	3.5	1,093
47.42	0.9	294	47.94	3.6	1,113
47.43	1.0	305	47.95	3.7	1,134
47.44	1.0	316	47.96	3.7	1,155
47.45	1.1	328	47.97	3.8	1,176
47.46	1.1	339	47.98	3.9	1,197
47.47	1.1	351	47.99	3.9	1,218
47.48	1.2	363	48.00	4.0	1,240
47.49	1.2	375			
47.50	1.3	388			
47.51	1.3	400			

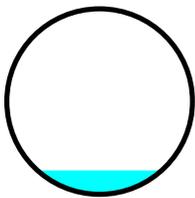
Summary for Reach 2R: 18" HDPE

Inflow Area = 219,734 sf, 97.37% Impervious, Inflow Depth = 0.42" for 2-yr event
 Inflow = 1.10 cfs @ 12.06 hrs, Volume= 7,773 cf
 Outflow = 1.02 cfs @ 12.19 hrs, Volume= 7,773 cf, Atten= 8%, Lag= 8.0 min
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.78 fps, Min. Travel Time= 3.7 min
 Avg. Velocity = 1.15 fps, Avg. Travel Time= 9.0 min

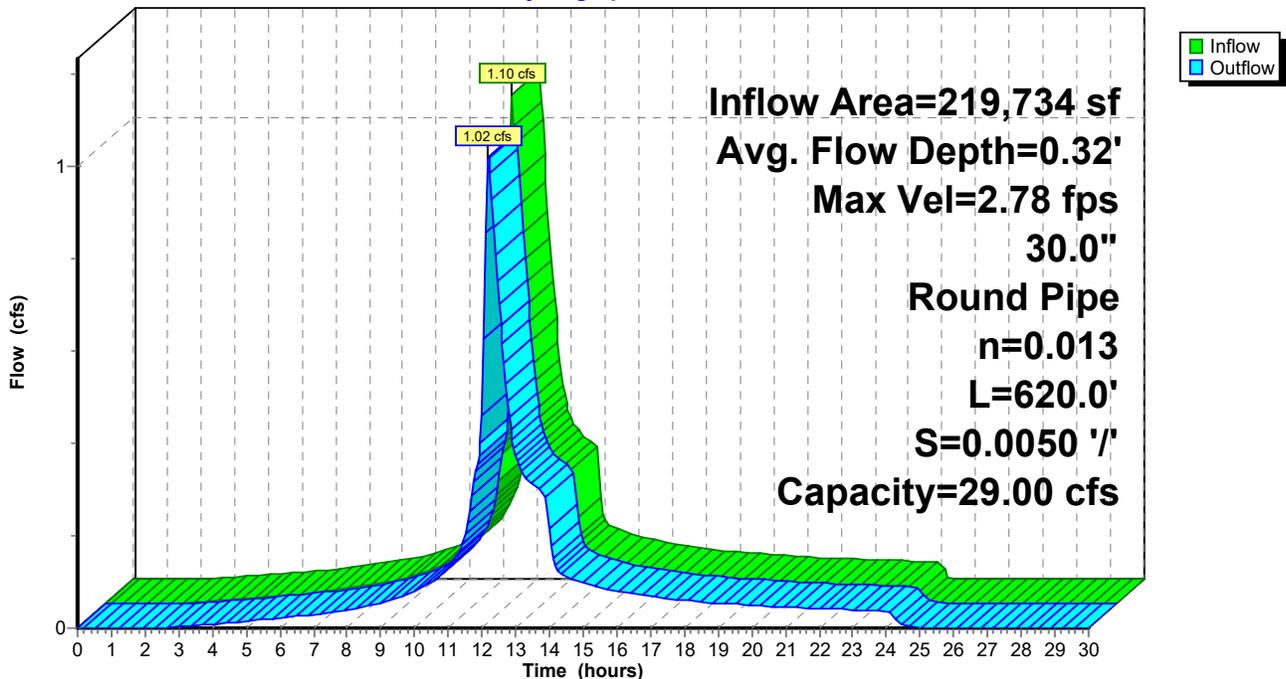
Peak Storage= 230 cf @ 12.12 hrs
 Average Depth at Peak Storage= 0.32', Surface Width= 1.68'
 Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.00 cfs

30.0" Round Pipe
 n= 0.013
 Length= 620.0' Slope= 0.0050 '/'
 Inlet Invert= 48.10', Outlet Invert= 45.00'



Reach 2R: 18" HDPE

Hydrograph



Stage-Discharge for Reach 2R: 18" HDPE

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
48.10	0.00	0.00	49.14	5.43	10.50	50.18	6.73	29.38
48.12	0.42	0.00	49.16	5.48	10.86	50.20	6.73	29.61
48.14	0.71	0.01	49.18	5.53	11.24	50.22	6.72	29.83
48.16	0.93	0.03	49.20	5.58	11.61	50.24	6.71	30.04
48.18	1.13	0.05	49.22	5.63	11.99	50.26	6.71	30.23
48.20	1.31	0.09	49.24	5.67	12.37	50.28	6.70	30.41
48.22	1.48	0.13	49.26	5.72	12.75	50.30	6.68	30.58
48.24	1.63	0.18	49.28	5.76	13.14	50.32	6.67	30.72
48.26	1.78	0.24	49.30	5.81	13.52	50.34	6.65	30.85
48.28	1.92	0.30	49.32	5.85	13.91	50.36	6.63	30.96
48.30	2.06	0.38	49.34	5.89	14.31	50.38	6.61	31.06
48.32	2.18	0.46	49.36	5.93	14.70	50.40	6.59	31.13
48.34	2.31	0.56	49.38	5.97	15.09	50.42	6.56	31.17
48.36	2.43	0.66	49.40	6.01	15.49	50.44	6.53	31.19
48.38	2.55	0.77	49.42	6.04	15.89	50.46	6.50	31.18
48.40	2.66	0.89	49.44	6.08	16.29	50.48	6.46	31.15
48.42	2.77	1.02	49.46	6.11	16.69	50.50	6.42	31.07
48.44	2.87	1.15	49.48	6.15	17.09	50.52	6.37	30.94
48.46	2.98	1.30	49.50	6.18	17.49	50.54	6.31	30.75
48.48	3.08	1.45	49.52	6.22	17.89	50.56	6.23	30.48
48.50	3.18	1.61	49.54	6.25	18.29	50.58	6.12	29.98
48.52	3.27	1.78	49.56	6.28	18.69	50.60	5.91	29.00
48.54	3.37	1.96	49.58	6.31	19.09			
48.56	3.46	2.15	49.60	6.34	19.49			
48.58	3.55	2.34	49.62	6.36	19.88			
48.60	3.63	2.54	49.64	6.39	20.28			
48.62	3.72	2.75	49.66	6.42	20.67			
48.64	3.80	2.97	49.68	6.44	21.06			
48.66	3.88	3.19	49.70	6.47	21.45			
48.68	3.97	3.42	49.72	6.49	21.84			
48.70	4.04	3.66	49.74	6.51	22.23			
48.72	4.12	3.91	49.76	6.53	22.61			
48.74	4.20	4.17	49.78	6.55	22.99			
48.76	4.27	4.43	49.80	6.57	23.36			
48.78	4.34	4.69	49.82	6.59	23.73			
48.80	4.41	4.97	49.84	6.61	24.10			
48.82	4.48	5.25	49.86	6.62	24.46			
48.84	4.55	5.54	49.88	6.64	24.82			
48.86	4.62	5.83	49.90	6.65	25.17			
48.88	4.68	6.13	49.92	6.67	25.52			
48.90	4.75	6.43	49.94	6.68	25.86			
48.92	4.81	6.74	49.96	6.69	26.20			
48.94	4.87	7.06	49.98	6.70	26.53			
48.96	4.94	7.38	50.00	6.71	26.85			
48.98	5.00	7.71	50.02	6.72	27.17			
49.00	5.05	8.04	50.04	6.72	27.47			
49.02	5.11	8.38	50.06	6.73	27.77			
49.04	5.17	8.72	50.08	6.73	28.07			
49.06	5.22	9.07	50.10	6.73	28.35			
49.08	5.28	9.42	50.12	6.74	28.62			
49.10	5.33	9.77	50.14	6.74	28.89			
49.12	5.38	10.13	50.16	6.73	29.14			

Stage-Area-Storage for Reach 2R: 18" HDPE

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
48.10	0.0	0
48.15	0.0	15
48.20	0.1	41
48.25	0.1	75
48.30	0.2	114
48.35	0.3	158
48.40	0.3	207
48.45	0.4	259
48.50	0.5	314
48.55	0.6	373
48.60	0.7	433
48.65	0.8	496
48.70	0.9	562
48.75	1.0	629
48.80	1.1	698
48.85	1.2	768
48.90	1.4	840
48.95	1.5	912
49.00	1.6	986
49.05	1.7	1,061
49.10	1.8	1,137
49.15	2.0	1,213
49.20	2.1	1,290
49.25	2.2	1,367
49.30	2.3	1,444
49.35	2.5	1,522
49.40	2.6	1,599
49.45	2.7	1,677
49.50	2.8	1,754
49.55	3.0	1,830
49.60	3.1	1,907
49.65	3.2	1,982
49.70	3.3	2,057
49.75	3.4	2,131
49.80	3.6	2,204
49.85	3.7	2,276
49.90	3.8	2,346
49.95	3.9	2,415
50.00	4.0	2,482
50.05	4.1	2,547
50.10	4.2	2,610
50.15	4.3	2,671
50.20	4.4	2,729
50.25	4.5	2,784
50.30	4.6	2,837
50.35	4.7	2,885
50.40	4.7	2,929
50.45	4.8	2,969
50.50	4.8	3,003
50.55	4.9	3,029
50.60	4.9	3,043

Summary for Pond 3R: OCS-102 to MH-101

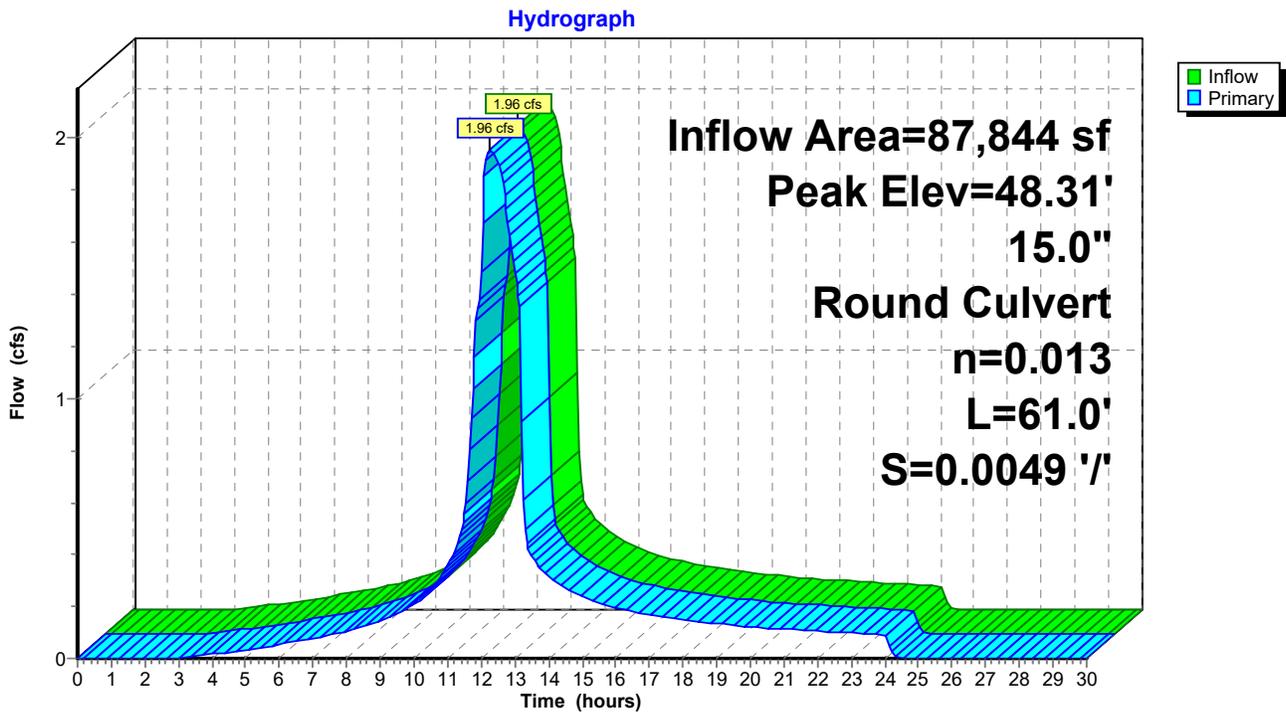
Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 2.69" for 2-yr event
 Inflow = 1.96 cfs @ 12.27 hrs, Volume= 19,665 cf
 Outflow = 1.96 cfs @ 12.27 hrs, Volume= 19,665 cf, Atten= 0%, Lag= 0.0 min
 Primary = 1.96 cfs @ 12.27 hrs, Volume= 19,665 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.31' @ 12.27 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	47.50'	15.0" Round Culvert L= 61.0' Ke= 0.500 Inlet / Outlet Invert= 47.50' / 47.20' S= 0.0049 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=1.95 cfs @ 12.27 hrs HW=48.31' (Free Discharge)
 ↳ **1=Culvert** (Barrel Controls 1.95 cfs @ 3.31 fps)

Pond 3R: OCS-102 to MH-101



Stage-Discharge for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.50	0.00	48.02	0.89	48.54	2.94
47.51	0.00	48.03	0.92	48.55	2.98
47.52	0.00	48.04	0.95	48.56	3.03
47.53	0.00	48.05	0.98	48.57	3.07
47.54	0.00	48.06	1.02	48.58	3.11
47.55	0.01	48.07	1.05	48.59	3.16
47.56	0.01	48.08	1.08	48.60	3.20
47.57	0.01	48.09	1.12	48.61	3.25
47.58	0.02	48.10	1.15	48.62	3.29
47.59	0.03	48.11	1.19	48.63	3.33
47.60	0.03	48.12	1.22	48.64	3.37
47.61	0.04	48.13	1.26	48.65	3.42
47.62	0.05	48.14	1.30	48.66	3.46
47.63	0.06	48.15	1.33	48.67	3.50
47.64	0.06	48.16	1.37	48.68	3.55
47.65	0.07	48.17	1.41	48.69	3.59
47.66	0.09	48.18	1.44	48.70	3.63
47.67	0.10	48.19	1.48	48.71	3.67
47.68	0.11	48.20	1.52	48.72	3.72
47.69	0.12	48.21	1.56	48.73	3.76
47.70	0.14	48.22	1.60	48.74	3.80
47.71	0.15	48.23	1.64	48.75	3.84
47.72	0.16	48.24	1.68		
47.73	0.18	48.25	1.72		
47.74	0.20	48.26	1.75		
47.75	0.21	48.27	1.79		
47.76	0.23	48.28	1.84		
47.77	0.25	48.29	1.88		
47.78	0.27	48.30	1.92		
47.79	0.29	48.31	1.96		
47.80	0.31	48.32	2.00		
47.81	0.33	48.33	2.04		
47.82	0.35	48.34	2.08		
47.83	0.37	48.35	2.12		
47.84	0.39	48.36	2.16		
47.85	0.42	48.37	2.21		
47.86	0.44	48.38	2.25		
47.87	0.46	48.39	2.29		
47.88	0.49	48.40	2.33		
47.89	0.51	48.41	2.38		
47.90	0.54	48.42	2.42		
47.91	0.57	48.43	2.46		
47.92	0.59	48.44	2.51		
47.93	0.62	48.45	2.55		
47.94	0.65	48.46	2.59		
47.95	0.68	48.47	2.64		
47.96	0.70	48.48	2.68		
47.97	0.73	48.49	2.72		
47.98	0.76	48.50	2.77		
47.99	0.79	48.51	2.81		
48.00	0.82	48.52	2.85		
48.01	0.86	48.53	2.90		

Stage-Area-Storage for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0	48.71	0
47.68	0	48.20	0	48.72	0
47.69	0	48.21	0	48.73	0
47.70	0	48.22	0	48.74	0
47.71	0	48.23	0	48.75	0
47.72	0	48.24	0		
47.73	0	48.25	0		
47.74	0	48.26	0		
47.75	0	48.27	0		
47.76	0	48.28	0		
47.77	0	48.29	0		
47.78	0	48.30	0		
47.79	0	48.31	0		
47.80	0	48.32	0		
47.81	0	48.33	0		
47.82	0	48.34	0		
47.83	0	48.35	0		
47.84	0	48.36	0		
47.85	0	48.37	0		
47.86	0	48.38	0		
47.87	0	48.39	0		
47.88	0	48.40	0		
47.89	0	48.41	0		
47.90	0	48.42	0		
47.91	0	48.43	0		
47.92	0	48.44	0		
47.93	0	48.45	0		
47.94	0	48.46	0		
47.95	0	48.47	0		
47.96	0	48.48	0		
47.97	0	48.49	0		
47.98	0	48.50	0		
47.99	0	48.51	0		
48.00	0	48.52	0		
48.01	0	48.53	0		

Summary for Pond 4R: MH-101 to MH-102

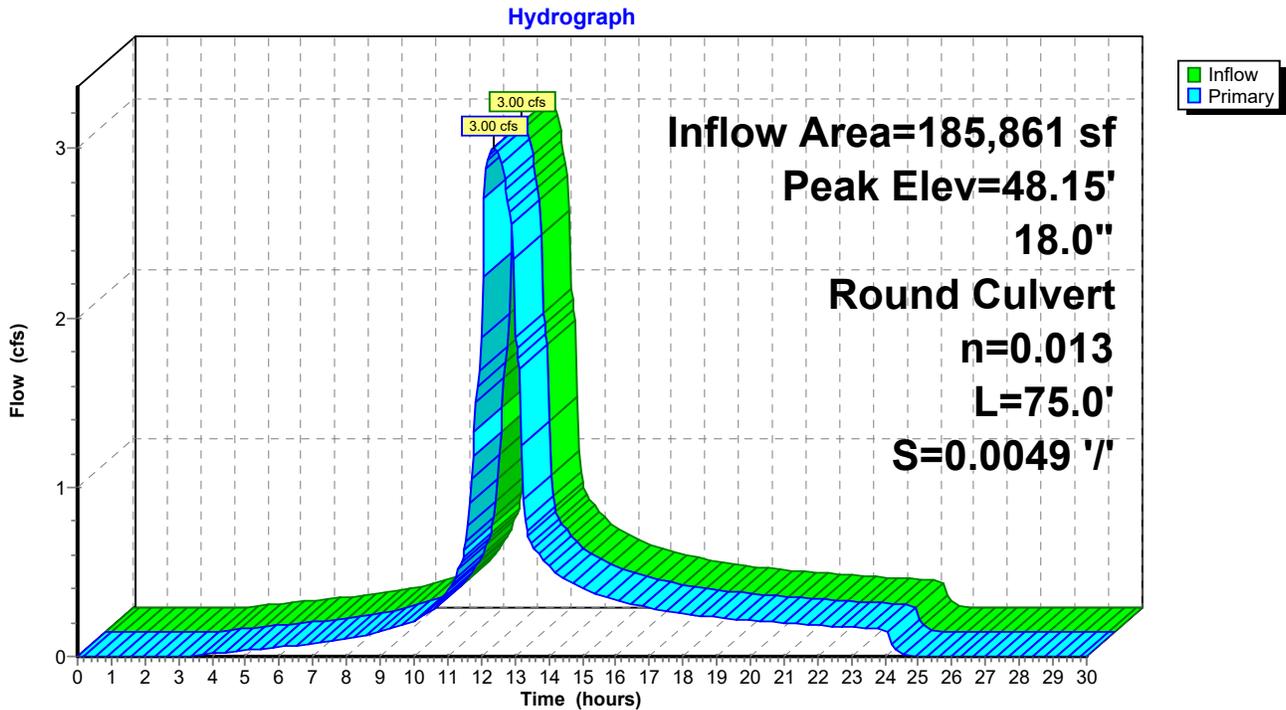
Inflow Area = 185,861 sf, 62.85% Impervious, Inflow Depth = 1.84" for 2-yr event
 Inflow = 3.00 cfs @ 12.38 hrs, Volume= 28,554 cf
 Outflow = 3.00 cfs @ 12.38 hrs, Volume= 28,554 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.00 cfs @ 12.38 hrs, Volume= 28,554 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.15' @ 12.38 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	47.20'	18.0" Round Culvert L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.83' S= 0.0049 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=3.00 cfs @ 12.38 hrs HW=48.15' (Free Discharge)
 ↑1=Culvert (Barrel Controls 3.00 cfs @ 3.65 fps)

Pond 4R: MH-101 to MH-102



Stage-Discharge for Pond 4R: MH-101 to MH-102

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.20	0.00	47.72	1.01	48.24	3.52
47.21	0.00	47.73	1.05	48.25	3.57
47.22	0.00	47.74	1.09	48.26	3.63
47.23	0.00	47.75	1.13	48.27	3.69
47.24	0.00	47.76	1.17	48.28	3.74
47.25	0.01	47.77	1.21	48.29	3.80
47.26	0.01	47.78	1.25	48.30	3.86
47.27	0.02	47.79	1.29	48.31	3.91
47.28	0.02	47.80	1.33	48.32	3.97
47.29	0.03	47.81	1.37	48.33	4.03
47.30	0.04	47.82	1.41	48.34	4.09
47.31	0.04	47.83	1.45	48.35	4.14
47.32	0.05	47.84	1.50	48.36	4.20
47.33	0.06	47.85	1.54	48.37	4.26
47.34	0.07	47.86	1.58	48.38	4.32
47.35	0.08	47.87	1.63	48.39	4.37
47.36	0.10	47.88	1.67	48.40	4.43
47.37	0.11	47.89	1.72	48.41	4.49
47.38	0.12	47.90	1.76	48.42	4.55
47.39	0.14	47.91	1.81	48.43	4.61
47.40	0.15	47.92	1.86	48.44	4.66
47.41	0.17	47.93	1.90	48.45	4.72
47.42	0.18	47.94	1.95	48.46	4.78
47.43	0.20	47.95	2.00	48.47	4.84
47.44	0.22	47.96	2.05	48.48	4.90
47.45	0.24	47.97	2.09	48.49	4.95
47.46	0.26	47.98	2.14	48.50	5.01
47.47	0.28	47.99	2.19	48.51	5.07
47.48	0.30	48.00	2.24	48.52	5.13
47.49	0.32	48.01	2.29	48.53	5.18
47.50	0.35	48.02	2.34	48.54	5.24
47.51	0.37	48.03	2.39	48.55	5.30
47.52	0.39	48.04	2.44	48.56	5.36
47.53	0.42	48.05	2.49	48.57	5.41
47.54	0.44	48.06	2.54	48.58	5.47
47.55	0.47	48.07	2.60	48.59	5.53
47.56	0.50	48.08	2.65	48.60	5.59
47.57	0.52	48.09	2.70	48.61	5.64
47.58	0.55	48.10	2.75	48.62	5.70
47.59	0.58	48.11	2.81	48.63	5.76
47.60	0.61	48.12	2.86	48.64	5.81
47.61	0.64	48.13	2.91	48.65	5.87
47.62	0.67	48.14	2.97	48.66	5.92
47.63	0.70	48.15	3.02	48.67	5.98
47.64	0.74	48.16	3.08	48.68	6.04
47.65	0.77	48.17	3.13	48.69	6.09
47.66	0.80	48.18	3.18	48.70	6.15
47.67	0.84	48.19	3.24		
47.68	0.87	48.20	3.29		
47.69	0.91	48.21	3.35		
47.70	0.94	48.22	3.41		
47.71	0.98	48.23	3.46		

Stage-Area-Storage for Pond 4R: MH-101 to MH-102

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0	48.34	0
47.31	0	47.83	0	48.35	0
47.32	0	47.84	0	48.36	0
47.33	0	47.85	0	48.37	0
47.34	0	47.86	0	48.38	0
47.35	0	47.87	0	48.39	0
47.36	0	47.88	0	48.40	0
47.37	0	47.89	0	48.41	0
47.38	0	47.90	0	48.42	0
47.39	0	47.91	0	48.43	0
47.40	0	47.92	0	48.44	0
47.41	0	47.93	0	48.45	0
47.42	0	47.94	0	48.46	0
47.43	0	47.95	0	48.47	0
47.44	0	47.96	0	48.48	0
47.45	0	47.97	0	48.49	0
47.46	0	47.98	0	48.50	0
47.47	0	47.99	0	48.51	0
47.48	0	48.00	0	48.52	0
47.49	0	48.01	0	48.53	0
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0		
47.68	0	48.20	0		
47.69	0	48.21	0		
47.70	0	48.22	0		
47.71	0	48.23	0		

Summary for Pond 5R: MH-102 to MH-103

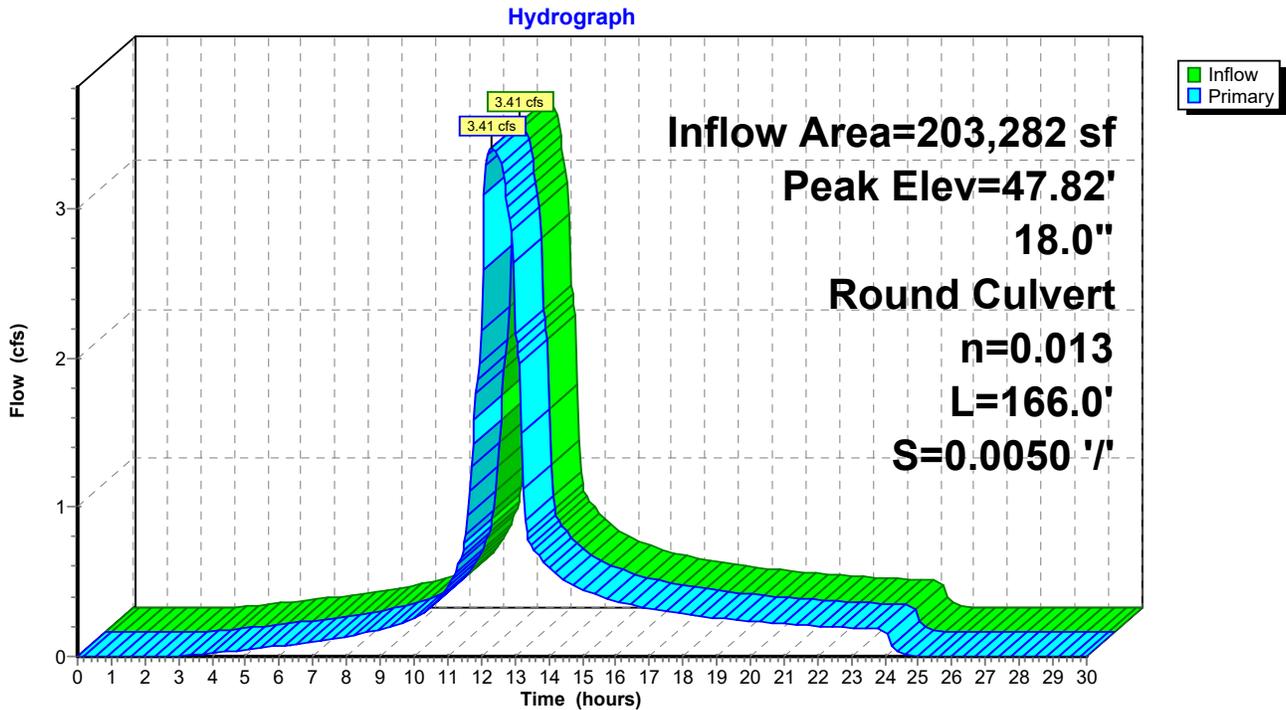
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 1.93" for 2-yr event
 Inflow = 3.41 cfs @ 12.33 hrs, Volume= 32,749 cf
 Outflow = 3.41 cfs @ 12.33 hrs, Volume= 32,749 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.41 cfs @ 12.33 hrs, Volume= 32,749 cf
 Routed to Pond 6R : MH-103 to FES-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.82' @ 12.33 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.83'	18.0" Round Culvert L= 166.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 46.83' / 46.00' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=3.41 cfs @ 12.33 hrs HW=47.82' (Free Discharge)
 ↳ **1=Culvert** (Barrel Controls 3.41 cfs @ 3.90 fps)

Pond 5R: MH-102 to MH-103



Stage-Discharge for Pond 5R: MH-102 to MH-103

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.83	0.00	47.35	1.05	47.87	3.69
46.84	0.00	47.36	1.09	47.88	3.75
46.85	0.00	47.37	1.13	47.89	3.81
46.86	0.00	47.38	1.17	47.90	3.87
46.87	0.00	47.39	1.22	47.91	3.93
46.88	0.01	47.40	1.26	47.92	3.99
46.89	0.01	47.41	1.30	47.93	4.05
46.90	0.02	47.42	1.34	47.94	4.11
46.91	0.02	47.43	1.39	47.95	4.17
46.92	0.03	47.44	1.43	47.96	4.22
46.93	0.04	47.45	1.47	47.97	4.28
46.94	0.04	47.46	1.52	47.98	4.34
46.95	0.05	47.47	1.56	47.99	4.40
46.96	0.06	47.48	1.61	48.00	4.46
46.97	0.07	47.49	1.66	48.01	4.52
46.98	0.08	47.50	1.70	48.02	4.58
46.99	0.10	47.51	1.75	48.03	4.64
47.00	0.11	47.52	1.80	48.04	4.70
47.01	0.12	47.53	1.85	48.05	4.76
47.02	0.14	47.54	1.89	48.06	4.82
47.03	0.15	47.55	1.94	48.07	4.88
47.04	0.17	47.56	1.99	48.08	4.94
47.05	0.19	47.57	2.04	48.09	5.00
47.06	0.21	47.58	2.09	48.10	5.06
47.07	0.22	47.59	2.14	48.11	5.12
47.08	0.24	47.60	2.20	48.12	5.18
47.09	0.26	47.61	2.25	48.13	5.24
47.10	0.29	47.62	2.30	48.14	5.29
47.11	0.31	47.63	2.35	48.15	5.35
47.12	0.33	47.64	2.40	48.16	5.41
47.13	0.35	47.65	2.46	48.17	5.47
47.14	0.38	47.66	2.51	48.18	5.53
47.15	0.40	47.67	2.56	48.19	5.59
47.16	0.43	47.68	2.62	48.20	5.64
47.17	0.46	47.69	2.67	48.21	5.70
47.18	0.48	47.70	2.73	48.22	5.76
47.19	0.51	47.71	2.78	48.23	5.82
47.20	0.54	47.72	2.84	48.24	5.87
47.21	0.57	47.73	2.89	48.25	5.93
47.22	0.60	47.74	2.95	48.26	5.99
47.23	0.63	47.75	3.00	48.27	6.04
47.24	0.66	47.76	3.06	48.28	6.10
47.25	0.69	47.77	3.12	48.29	6.15
47.26	0.73	47.78	3.17	48.30	6.21
47.27	0.76	47.79	3.23	48.31	6.26
47.28	0.80	47.80	3.29	48.32	6.32
47.29	0.83	47.81	3.34	48.33	6.37
47.30	0.87	47.82	3.40		
47.31	0.90	47.83	3.46		
47.32	0.94	47.84	3.52		
47.33	0.98	47.85	3.58		
47.34	1.02	47.86	3.63		

Stage-Area-Storage for Pond 5R: MH-102 to MH-103

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.83	0	47.35	0	47.87	0
46.84	0	47.36	0	47.88	0
46.85	0	47.37	0	47.89	0
46.86	0	47.38	0	47.90	0
46.87	0	47.39	0	47.91	0
46.88	0	47.40	0	47.92	0
46.89	0	47.41	0	47.93	0
46.90	0	47.42	0	47.94	0
46.91	0	47.43	0	47.95	0
46.92	0	47.44	0	47.96	0
46.93	0	47.45	0	47.97	0
46.94	0	47.46	0	47.98	0
46.95	0	47.47	0	47.99	0
46.96	0	47.48	0	48.00	0
46.97	0	47.49	0	48.01	0
46.98	0	47.50	0	48.02	0
46.99	0	47.51	0	48.03	0
47.00	0	47.52	0	48.04	0
47.01	0	47.53	0	48.05	0
47.02	0	47.54	0	48.06	0
47.03	0	47.55	0	48.07	0
47.04	0	47.56	0	48.08	0
47.05	0	47.57	0	48.09	0
47.06	0	47.58	0	48.10	0
47.07	0	47.59	0	48.11	0
47.08	0	47.60	0	48.12	0
47.09	0	47.61	0	48.13	0
47.10	0	47.62	0	48.14	0
47.11	0	47.63	0	48.15	0
47.12	0	47.64	0	48.16	0
47.13	0	47.65	0	48.17	0
47.14	0	47.66	0	48.18	0
47.15	0	47.67	0	48.19	0
47.16	0	47.68	0	48.20	0
47.17	0	47.69	0	48.21	0
47.18	0	47.70	0	48.22	0
47.19	0	47.71	0	48.23	0
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0		
47.31	0	47.83	0		
47.32	0	47.84	0		
47.33	0	47.85	0		
47.34	0	47.86	0		

Summary for Pond 6R: MH-103 to FES-101

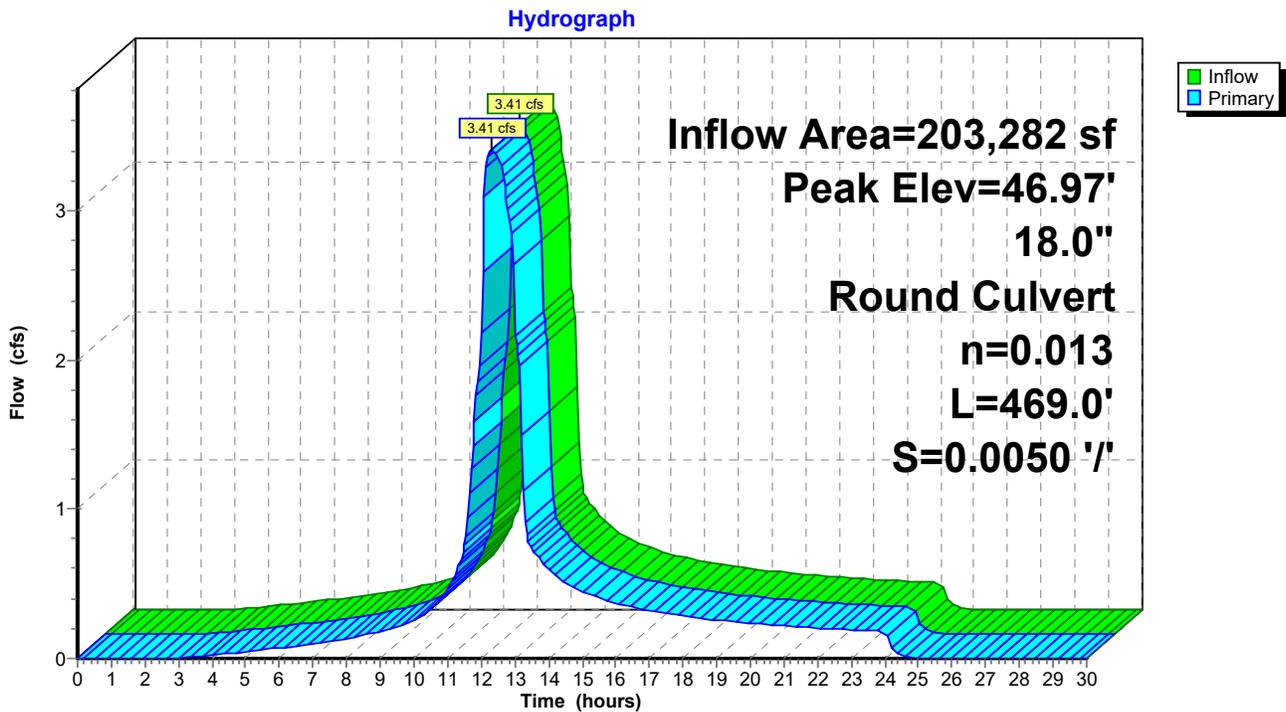
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 1.93" for 2-yr event
 Inflow = 3.41 cfs @ 12.33 hrs, Volume= 32,749 cf
 Outflow = 3.41 cfs @ 12.33 hrs, Volume= 32,749 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.41 cfs @ 12.33 hrs, Volume= 32,749 cf
 Routed to Pond P-109 : SWMB P-109

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 46.97' @ 12.33 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.00'	18.0" Round Culvert L= 469.0' Ke= 0.500 Inlet / Outlet Invert= 46.00' / 43.65' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=3.41 cfs @ 12.33 hrs HW=46.97' (Free Discharge)
 ↳1=Culvert (Barrel Controls 3.41 cfs @ 4.02 fps)

Pond 6R: MH-103 to FES-101



Stage-Discharge for Pond 6R: MH-103 to FES-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.00	0.00	46.52	1.08	47.04	3.85
46.01	0.00	46.53	1.12	47.05	3.91
46.02	0.00	46.54	1.16	47.06	3.97
46.03	0.00	46.55	1.21	47.07	4.03
46.04	0.00	46.56	1.25	47.08	4.09
46.05	0.01	46.57	1.29	47.09	4.15
46.06	0.01	46.58	1.34	47.10	4.21
46.07	0.02	46.59	1.38	47.11	4.28
46.08	0.02	46.60	1.43	47.12	4.34
46.09	0.03	46.61	1.47	47.13	4.40
46.10	0.04	46.62	1.52	47.14	4.46
46.11	0.04	46.63	1.57	47.15	4.52
46.12	0.05	46.64	1.61	47.16	4.59
46.13	0.06	46.65	1.66	47.17	4.65
46.14	0.07	46.66	1.71	47.18	4.71
46.15	0.08	46.67	1.76	47.19	4.77
46.16	0.10	46.68	1.81	47.20	4.83
46.17	0.11	46.69	1.86	47.21	4.89
46.18	0.12	46.70	1.91	47.22	4.96
46.19	0.14	46.71	1.96	47.23	5.02
46.20	0.15	46.72	2.01	47.24	5.08
46.21	0.17	46.73	2.06	47.25	5.14
46.22	0.19	46.74	2.11	47.26	5.20
46.23	0.21	46.75	2.17	47.27	5.26
46.24	0.23	46.76	2.22	47.28	5.32
46.25	0.25	46.77	2.27	47.29	5.38
46.26	0.27	46.78	2.33	47.30	5.44
46.27	0.29	46.79	2.38	47.31	5.50
46.28	0.31	46.80	2.44	47.32	5.56
46.29	0.33	46.81	2.49	47.33	5.62
46.30	0.36	46.82	2.55	47.34	5.68
46.31	0.38	46.83	2.60	47.35	5.74
46.32	0.41	46.84	2.66	47.36	5.80
46.33	0.44	46.85	2.72	47.37	5.86
46.34	0.46	46.86	2.77	47.38	5.92
46.35	0.49	46.87	2.83	47.39	5.98
46.36	0.52	46.88	2.89	47.40	6.03
46.37	0.55	46.89	2.95	47.41	6.09
46.38	0.58	46.90	3.01	47.42	6.15
46.39	0.61	46.91	3.06	47.43	6.20
46.40	0.64	46.92	3.12	47.44	6.26
46.41	0.68	46.93	3.18	47.45	6.32
46.42	0.71	46.94	3.24	47.46	6.37
46.43	0.74	46.95	3.30	47.47	6.43
46.44	0.78	46.96	3.36	47.48	6.48
46.45	0.81	46.97	3.42	47.49	6.53
46.46	0.85	46.98	3.48	47.50	6.59
46.47	0.89	46.99	3.54		
46.48	0.92	47.00	3.60		
46.49	0.96	47.01	3.66		
46.50	1.00	47.02	3.72		
46.51	1.04	47.03	3.78		

Stage-Area-Storage for Pond 6R: MH-103 to FES-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.00	0	46.52	0	47.04	0
46.01	0	46.53	0	47.05	0
46.02	0	46.54	0	47.06	0
46.03	0	46.55	0	47.07	0
46.04	0	46.56	0	47.08	0
46.05	0	46.57	0	47.09	0
46.06	0	46.58	0	47.10	0
46.07	0	46.59	0	47.11	0
46.08	0	46.60	0	47.12	0
46.09	0	46.61	0	47.13	0
46.10	0	46.62	0	47.14	0
46.11	0	46.63	0	47.15	0
46.12	0	46.64	0	47.16	0
46.13	0	46.65	0	47.17	0
46.14	0	46.66	0	47.18	0
46.15	0	46.67	0	47.19	0
46.16	0	46.68	0	47.20	0
46.17	0	46.69	0	47.21	0
46.18	0	46.70	0	47.22	0
46.19	0	46.71	0	47.23	0
46.20	0	46.72	0	47.24	0
46.21	0	46.73	0	47.25	0
46.22	0	46.74	0	47.26	0
46.23	0	46.75	0	47.27	0
46.24	0	46.76	0	47.28	0
46.25	0	46.77	0	47.29	0
46.26	0	46.78	0	47.30	0
46.27	0	46.79	0	47.31	0
46.28	0	46.80	0	47.32	0
46.29	0	46.81	0	47.33	0
46.30	0	46.82	0	47.34	0
46.31	0	46.83	0	47.35	0
46.32	0	46.84	0	47.36	0
46.33	0	46.85	0	47.37	0
46.34	0	46.86	0	47.38	0
46.35	0	46.87	0	47.39	0
46.36	0	46.88	0	47.40	0
46.37	0	46.89	0	47.41	0
46.38	0	46.90	0	47.42	0
46.39	0	46.91	0	47.43	0
46.40	0	46.92	0	47.44	0
46.41	0	46.93	0	47.45	0
46.42	0	46.94	0	47.46	0
46.43	0	46.95	0	47.47	0
46.44	0	46.96	0	47.48	0
46.45	0	46.97	0	47.49	0
46.46	0	46.98	0	47.50	0
46.47	0	46.99	0		
46.48	0	47.00	0		
46.49	0	47.01	0		
46.50	0	47.02	0		
46.51	0	47.03	0		

Summary for Pond P-101: SWMB P-101

Inflow Area = 98,017 sf, 42.31% Impervious, Inflow Depth = 1.09" for 2-yr event
 Inflow = 1.66 cfs @ 12.26 hrs, Volume= 8,890 cf
 Outflow = 1.08 cfs @ 12.49 hrs, Volume= 8,890 cf, Atten= 35%, Lag= 13.9 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Pond 4R : MH-101 to MH-102
 Secondary = 1.08 cfs @ 12.49 hrs, Volume= 8,890 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.59' @ 12.49 hrs Surf.Area= 8,124 sf Storage= 610 cf

Plug-Flow detention time= 3.1 min calculated for 8,875 cf (100% of inflow)
 Center-of-Mass det. time= 3.1 min (910.1 - 906.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.40'	5,666 cf	84.83'W x 95.76'L x 2.33'H Field A 18,955 cf Overall - 4,791 cf Embedded = 14,164 cf x 40.0% Voids
#2A	47.90'	4,791 cf	ADS_StormTech SC-310 +Cap x 325 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 325 Chambers in 25 Rows
		10,457 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.10'	4.0' long x 0.73' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.40'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.10'

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.40' (Free Discharge)

- ↑1=Low Level Orifice (Controls 0.00 cfs)
- ↑2=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

Secondary OutFlow Max=1.08 cfs @ 12.49 hrs HW=47.59' (Free Discharge)

- ↑3=Underdrain (Controls 1.08 cfs)

Pond P-101: SWMB P-101 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

25 Rows x 34.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 84.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

325 Chambers x 14.7 cf = 4,791.1 cf Chamber Storage

18,955.2 cf Field - 4,791.1 cf Chambers = 14,164.0 cf Stone x 40.0% Voids = 5,665.6 cf Stone Storage

Chamber Storage + Stone Storage = 10,456.7 cf = 0.240 af

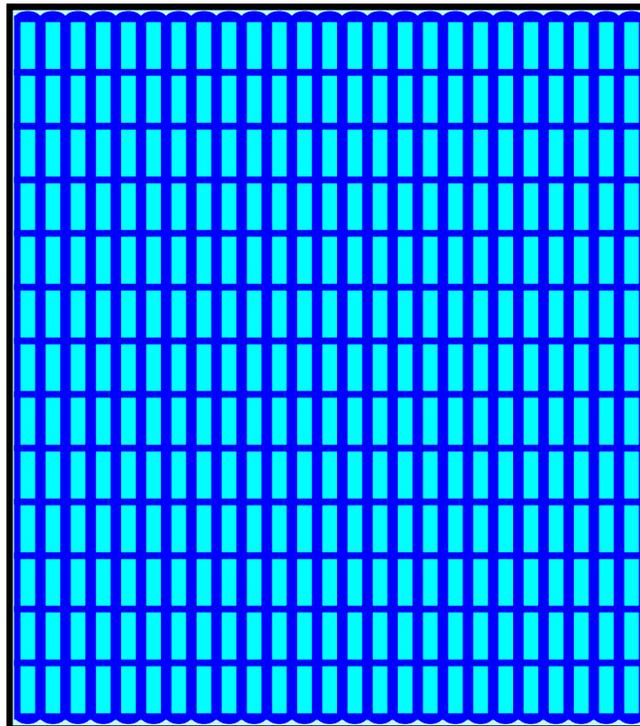
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 84.83' x 2.33'

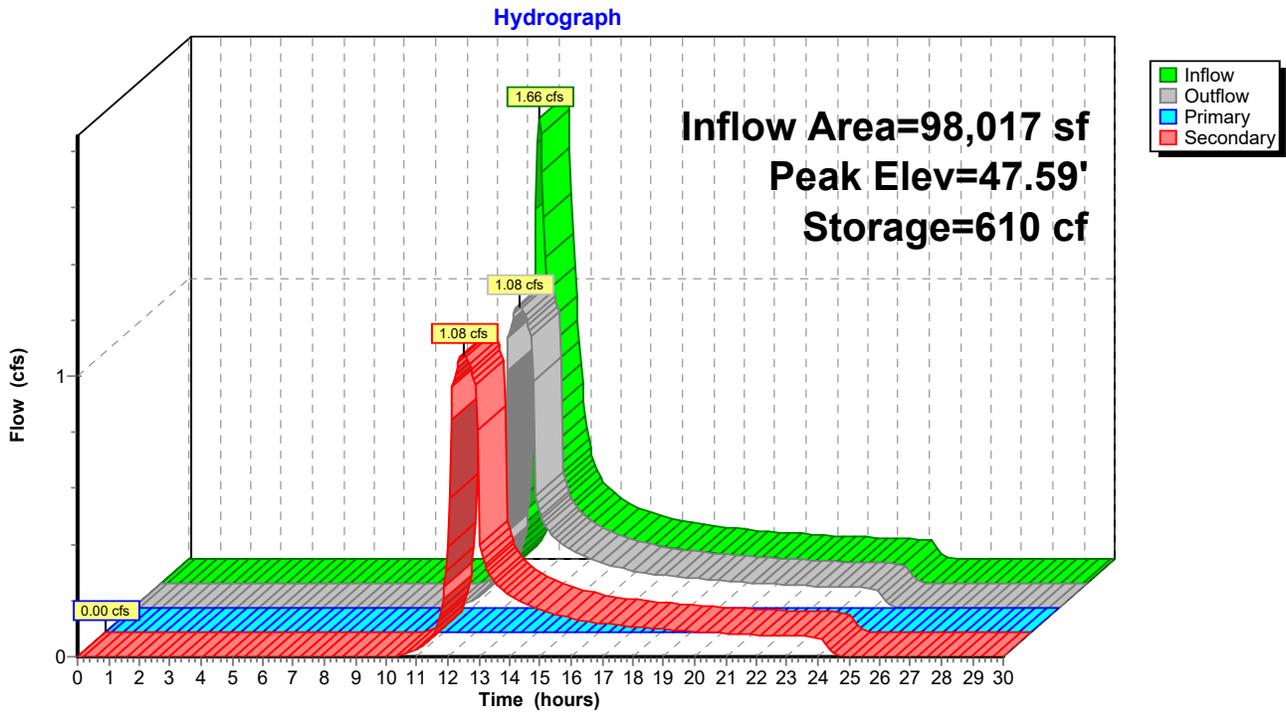
325 Chambers

702.0 cy Field

524.6 cy Stone



Pond P-101: SWMB P-101



Stage-Discharge for Pond P-101: SWMB P-101

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.40	0.00	0.00	0.00
47.45	0.98	0.00	0.98
47.50	1.01	0.00	1.01
47.55	1.05	0.00	1.05
47.60	1.08	0.00	1.08
47.65	1.12	0.00	1.12
47.70	1.16	0.00	1.16
47.75	1.19	0.00	1.19
47.80	1.23	0.00	1.23
47.85	1.27	0.00	1.27
47.90	1.30	0.00	1.30
47.95	1.34	0.00	1.34
48.00	1.37	0.00	1.37
48.05	1.41	0.00	1.41
48.10	1.45	0.00	1.45
48.15	1.48	0.00	1.48
48.20	1.52	0.00	1.52
48.25	1.56	0.00	1.56
48.30	1.59	0.00	1.59
48.35	1.63	0.00	1.63
48.40	1.66	0.00	1.66
48.45	1.70	0.00	1.70
48.50	1.74	0.00	1.74
48.55	1.78	0.01	1.77
48.60	1.84	0.03	1.81
48.65	1.91	0.07	1.84
48.70	1.99	0.11	1.88
48.75	2.08	0.17	1.92
48.80	2.18	0.23	1.95
48.85	2.28	0.30	1.99
48.90	2.39	0.36	2.03
48.95	2.49	0.43	2.06
49.00	2.57	0.47	2.10
49.05	2.65	0.52	2.13
49.10	2.73	0.56	2.17
49.15	2.95	0.74	2.21
49.20	3.29	1.05	2.24
49.25	3.71	1.44	2.28
49.30	4.20	1.89	2.31
49.35	4.74	2.39	2.35
49.40	5.34	2.95	2.39
49.45	5.98	3.56	2.42
49.50	6.66	4.21	2.46
49.55	7.39	4.90	2.50
49.60	8.16	5.63	2.53
49.65	8.97	6.40	2.57
49.70	9.82	7.21	2.60
49.75	10.70	8.06	2.64
49.80	11.61	8.94	2.68

Stage-Area-Storage for Pond P-101: SWMB P-101

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.40	8,124	0
47.45	8,124	162
47.50	8,124	325
47.55	8,124	487
47.60	8,124	650
47.65	8,124	812
47.70	8,124	975
47.75	8,124	1,137
47.80	8,124	1,300
47.85	8,124	1,462
47.90	8,124	1,625
47.95	8,124	1,954
48.00	8,124	2,282
48.05	8,124	2,609
48.10	8,124	2,933
48.15	8,124	3,254
48.20	8,124	3,572
48.25	8,124	3,887
48.30	8,124	4,199
48.35	8,124	4,506
48.40	8,124	4,810
48.45	8,124	5,109
48.50	8,124	5,403
48.55	8,124	5,694
48.60	8,124	5,979
48.65	8,124	6,258
48.70	8,124	6,531
48.75	8,124	6,797
48.80	8,124	7,055
48.85	8,124	7,306
48.90	8,124	7,546
48.95	8,124	7,774
49.00	8,124	7,987
49.05	8,124	8,185
49.10	8,124	8,372
49.15	8,124	8,550
49.20	8,124	8,722
49.25	8,124	8,886
49.30	8,124	9,049
49.35	8,124	9,211
49.40	8,124	9,374
49.45	8,124	9,536
49.50	8,124	9,699
49.55	8,124	9,861
49.60	8,124	10,023
49.65	8,124	10,186
49.70	8,124	10,348
49.75	8,124	10,457
49.80	8,124	10,457

Summary for Pond P-102: SWMB P-102

Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 2.69" for 2-yr event
 Inflow = 6.30 cfs @ 12.05 hrs, Volume= 19,667 cf
 Outflow = 1.96 cfs @ 12.27 hrs, Volume= 19,665 cf, Atten= 69%, Lag= 13.2 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Pond 3R : OCS-102 to MH-101
 Secondary = 1.96 cfs @ 12.27 hrs, Volume= 19,665 cf
 Routed to Pond 3R : OCS-102 to MH-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 48.09' @ 12.27 hrs Surf.Area= 10,996 sf Storage= 3,006 cf

Plug-Flow detention time= 8.9 min calculated for 19,632 cf (100% of inflow)
 Center-of-Mass det. time= 8.8 min (810.3 - 801.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.50'	7,657 cf	114.83'W x 95.76'L x 2.33'H Field A 25,658 cf Overall - 6,516 cf Embedded = 19,142 cf x 40.0% Voids
#2A	48.00'	6,516 cf	ADS_StormTech SC-310 +Cap x 442 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 442 Chambers in 34 Rows
		14,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	4.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.15'	4.0' long x 3.90' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.50'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.40'

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.50' (Free Discharge)

- ↑1=Low Level Orifice (Controls 0.00 cfs)
- ↑2=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

Secondary OutFlow Max=1.95 cfs @ 12.27 hrs HW=48.09' (Free Discharge)

- ↑3=Underdrain (Controls 1.95 cfs)

Pond P-102: SWMB P-102 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

34 Rows x 34.0" Wide + 6.0" Spacing x 33 + 12.0" Side Stone x 2 = 114.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

442 Chambers x 14.7 cf = 6,515.9 cf Chamber Storage

25,658.4 cf Field - 6,515.9 cf Chambers = 19,142.4 cf Stone x 40.0% Voids = 7,657.0 cf Stone Storage

Chamber Storage + Stone Storage = 14,172.9 cf = 0.325 af

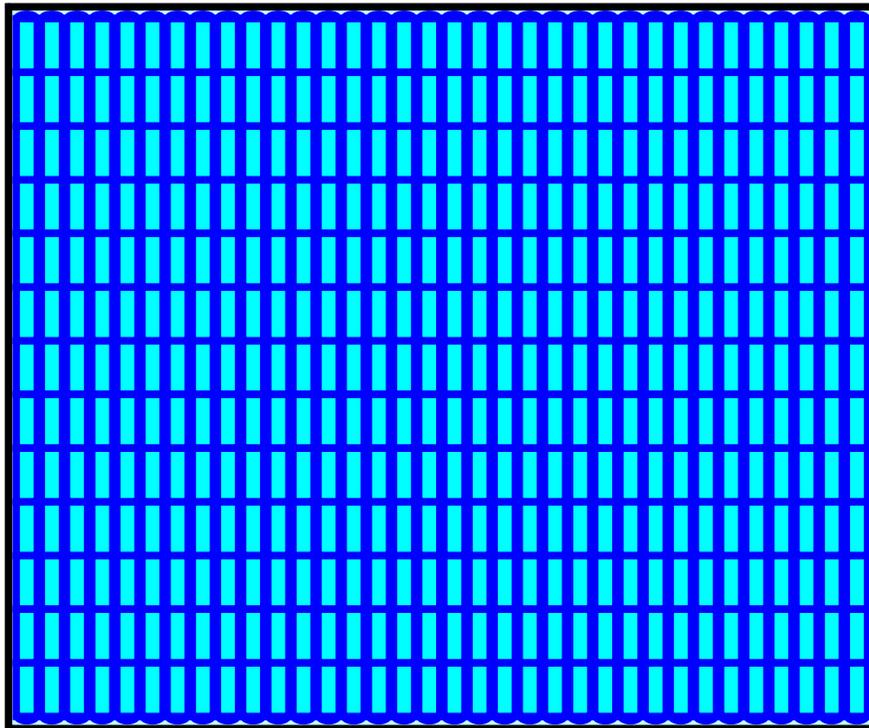
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 114.83' x 2.33'

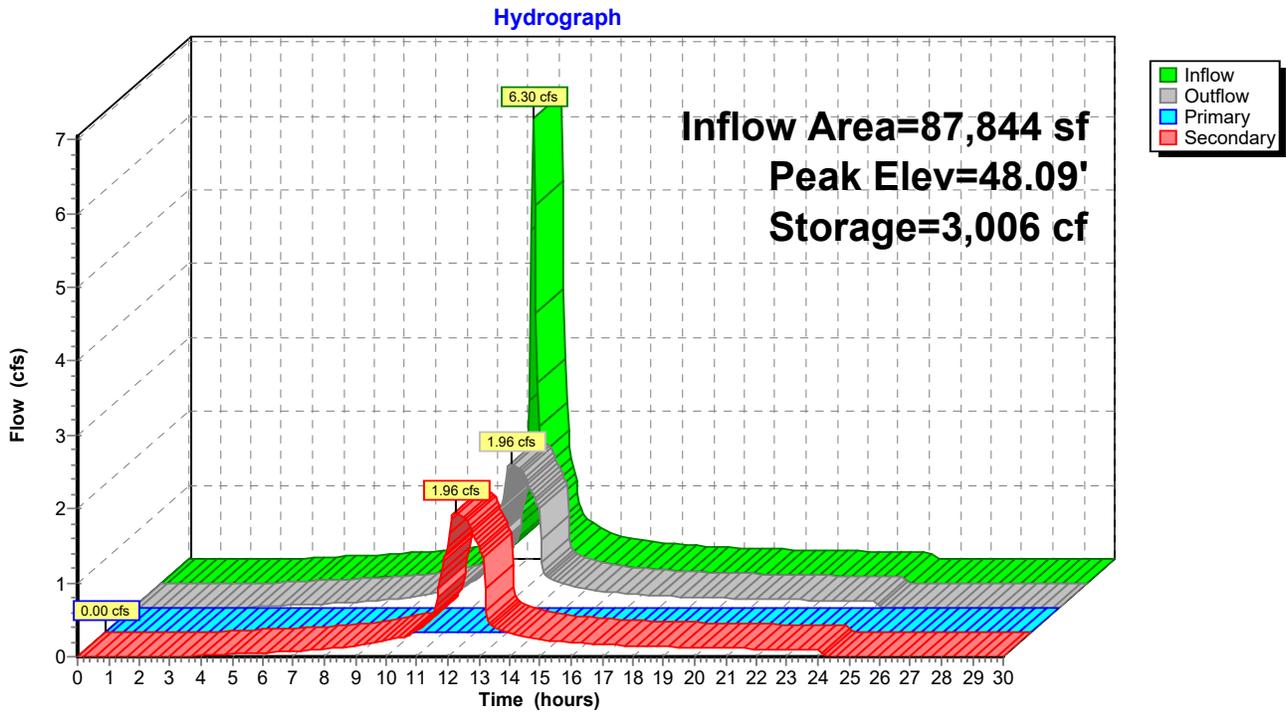
442 Chambers

950.3 cy Field

709.0 cy Stone



Pond P-102: SWMB P-102



Stage-Discharge for Pond P-102: SWMB P-102

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.50	0.00	0.00	0.00	52.70	108.50	101.21	7.29
47.60	1.39	0.00	1.39	52.80	113.09	105.68	7.41
47.70	1.50	0.00	1.50	52.90	117.74	110.22	7.52
47.80	1.62	0.00	1.62	53.00	122.46	114.82	7.64
47.90	1.74	0.00	1.74				
48.00	1.85	0.00	1.85				
48.10	1.97	0.00	1.97				
48.20	2.08	0.00	2.08				
48.30	2.20	0.00	2.20				
48.40	2.31	0.00	2.31				
48.50	2.43	0.00	2.43				
48.60	2.57	0.02	2.55				
48.70	2.74	0.08	2.66				
48.80	2.93	0.15	2.78				
48.90	3.10	0.20	2.89				
49.00	3.25	0.24	3.01				
49.10	3.40	0.28	3.12				
49.20	3.69	0.45	3.24				
49.30	4.46	1.10	3.36				
49.40	5.49	2.02	3.47				
49.50	6.73	3.15	3.59				
49.60	8.16	4.46	3.70				
49.70	9.75	5.93	3.82				
49.80	11.49	7.56	3.93				
49.90	13.38	9.33	4.05				
50.00	15.39	11.23	4.17				
50.10	17.54	13.26	4.28				
50.20	19.81	15.41	4.40				
50.30	22.20	17.68	4.51				
50.40	24.70	20.07	4.63				
50.50	27.32	22.57	4.74				
50.60	30.04	25.18	4.86				
50.70	32.87	27.90	4.98				
50.80	35.81	30.72	5.09				
50.90	38.84	33.64	5.21				
51.00	41.98	36.65	5.32				
51.10	45.21	39.77	5.44				
51.20	48.53	42.98	5.55				
51.30	51.95	46.28	5.67				
51.40	55.46	49.68	5.79				
51.50	59.06	53.16	5.90				
51.60	62.74	56.73	6.02				
51.70	66.51	60.38	6.13				
51.80	70.37	64.12	6.25				
51.90	74.30	67.94	6.36				
52.00	78.31	71.83	6.48				
52.10	82.41	75.81	6.60				
52.20	86.57	79.86	6.71				
52.30	90.82	83.99	6.83				
52.40	95.13	88.19	6.94				
52.50	99.52	92.46	7.06				
52.60	103.98	96.80	7.17				

Stage-Area-Storage for Pond P-102: SWMB P-102

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.50	10,996	0	52.70	10,996	14,173
47.60	10,996	440	52.80	10,996	14,173
47.70	10,996	880	52.90	10,996	14,173
47.80	10,996	1,320	53.00	10,996	14,173
47.90	10,996	1,759			
48.00	10,996	2,199			
48.10	10,996	3,092			
48.20	10,996	3,974			
48.30	10,996	4,842			
48.40	10,996	5,692			
48.50	10,996	6,520			
48.60	10,996	7,326			
48.70	10,996	8,106			
48.80	10,996	8,855			
48.90	10,996	9,566			
49.00	10,996	10,232			
49.10	10,996	10,829			
49.20	10,996	11,350			
49.30	10,996	11,824			
49.40	10,996	12,267			
49.50	10,996	12,707			
49.60	10,996	13,147			
49.70	10,996	13,586			
49.80	10,996	14,026			
49.90	10,996	14,173			
50.00	10,996	14,173			
50.10	10,996	14,173			
50.20	10,996	14,173			
50.30	10,996	14,173			
50.40	10,996	14,173			
50.50	10,996	14,173			
50.60	10,996	14,173			
50.70	10,996	14,173			
50.80	10,996	14,173			
50.90	10,996	14,173			
51.00	10,996	14,173			
51.10	10,996	14,173			
51.20	10,996	14,173			
51.30	10,996	14,173			
51.40	10,996	14,173			
51.50	10,996	14,173			
51.60	10,996	14,173			
51.70	10,996	14,173			
51.80	10,996	14,173			
51.90	10,996	14,173			
52.00	10,996	14,173			
52.10	10,996	14,173			
52.20	10,996	14,173			
52.30	10,996	14,173			
52.40	10,996	14,173			
52.50	10,996	14,173			
52.60	10,996	14,173			

Summary for Pond P-103: SWMB P-103

Inflow Area = 24,111 sf, 91.05% Impervious, Inflow Depth = 2.89" for 2-yr event
 Inflow = 1.98 cfs @ 12.02 hrs, Volume= 5,807 cf
 Outflow = 0.69 cfs @ 12.19 hrs, Volume= 5,808 cf, Atten= 65%, Lag= 9.9 min
 Primary = 0.39 cfs @ 12.19 hrs, Volume= 650 cf
 Routed to Reach 2R : 18" HDPE
 Secondary = 0.30 cfs @ 12.19 hrs, Volume= 5,158 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 50.66' @ 12.19 hrs Surf.Area= 2,096 sf Storage= 1,004 cf

Plug-Flow detention time= 12.1 min calculated for 5,798 cf (100% of inflow)
 Center-of-Mass det. time= 12.2 min (797.3 - 785.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.80'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	50.30'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	50.30'	8.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	51.40'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	49.80'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.00'

Primary OutFlow Max=0.39 cfs @ 12.19 hrs HW=50.66' (Free Discharge)

↑1=Low Level Orifice (Orifice Controls 0.39 cfs @ 2.04 fps)

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

Secondary OutFlow Max=0.30 cfs @ 12.19 hrs HW=50.66' (Free Discharge)

↑3=Underdrain (Controls 0.30 cfs)

Pond P-103: SWMB P-103 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

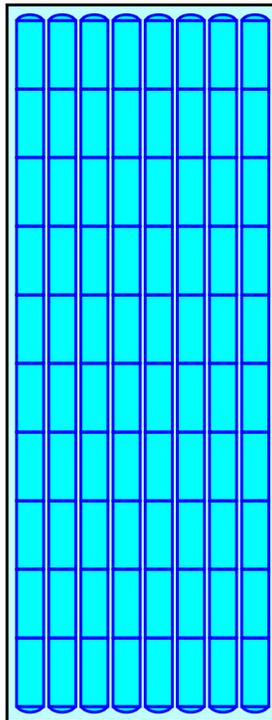
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

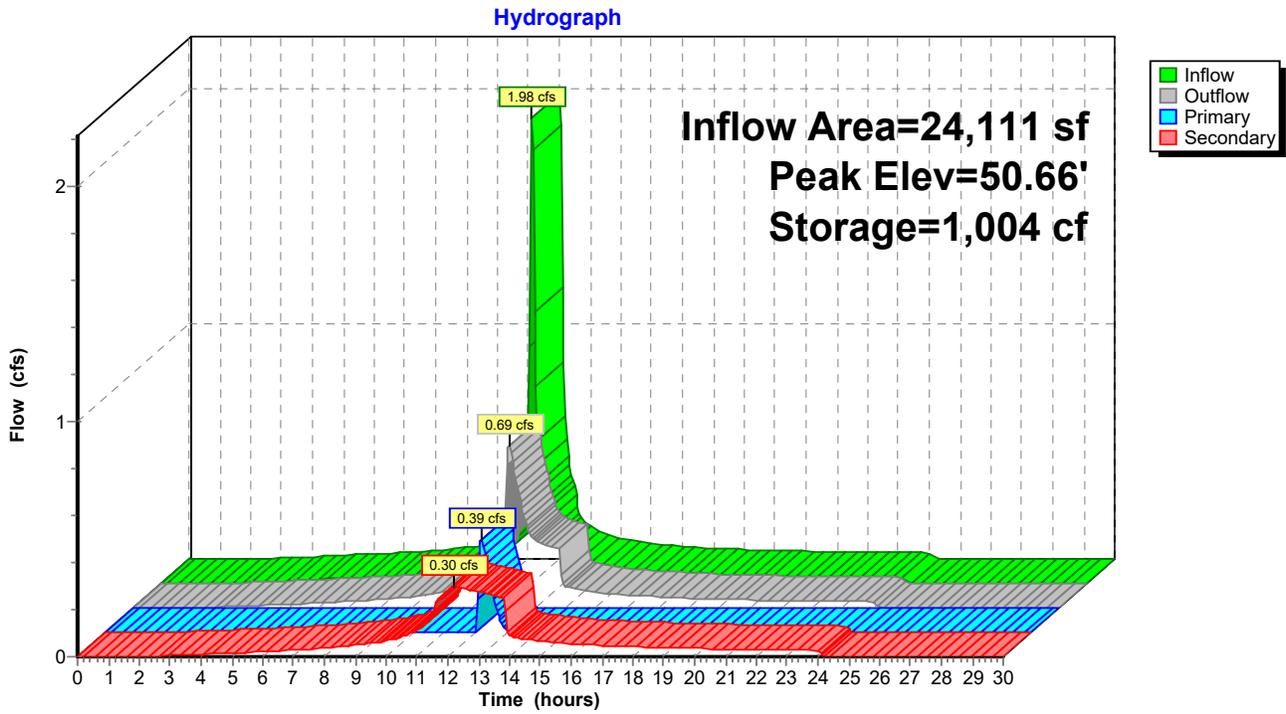
80 Chambers

181.1 cy Field

137.4 cy Stone



Pond P-103: SWMB P-103



Stage-Discharge for Pond P-103: SWMB P-103

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
49.80	0.00	0.00	0.00	52.40	16.45	16.04	0.41
49.85	0.25	0.00	0.25	52.45	17.57	17.16	0.41
49.90	0.25	0.00	0.25	52.50	18.72	18.30	0.41
49.95	0.25	0.00	0.25	52.55	19.89	19.47	0.42
50.00	0.26	0.00	0.26	52.60	21.10	20.68	0.42
50.05	0.26	0.00	0.26	52.65	22.33	21.91	0.42
50.10	0.26	0.00	0.26	52.70	23.59	23.16	0.43
50.15	0.26	0.00	0.26	52.75	24.88	24.45	0.43
50.20	0.27	0.00	0.27	52.80	26.20	25.76	0.43
50.25	0.27	0.00	0.27	52.85	27.54	27.10	0.44
50.30	0.27	0.00	0.27	52.90	28.91	28.47	0.44
50.35	0.29	0.01	0.28	52.95	30.30	29.86	0.44
50.40	0.32	0.04	0.28	53.00	31.72	31.27	0.45
50.45	0.36	0.08	0.28	53.05	33.17	32.72	0.45
50.50	0.42	0.13	0.29	53.10	34.64	34.18	0.45
50.55	0.49	0.20	0.29	53.15	36.13	35.67	0.46
50.60	0.58	0.28	0.29	53.20	37.65	37.19	0.46
50.65	0.67	0.37	0.30	53.25	39.19	38.73	0.46
50.70	0.77	0.47	0.30	53.30	40.76	40.30	0.47
50.75	0.88	0.57	0.30	53.35	42.35	41.89	0.47
50.80	0.98	0.68	0.31	53.40	43.97	43.50	0.47
50.85	1.09	0.78	0.31	53.45	45.61	45.13	0.48
50.90	1.19	0.87	0.31	53.50	47.27	46.79	0.48
50.95	1.27	0.95	0.32	53.55	48.95	48.47	0.48
51.00	1.34	1.02	0.32	53.60	50.66	50.18	0.49
51.05	1.41	1.08	0.32	53.65	52.39	51.90	0.49
51.10	1.47	1.15	0.33	53.70	54.14	53.65	0.49
51.15	1.54	1.21	0.33	53.75	55.91	55.42	0.49
51.20	1.60	1.27	0.33	53.80	57.71	57.21	0.50
51.25	1.65	1.32	0.34	53.85	59.52	59.02	0.50
51.30	1.71	1.37	0.34	53.90	61.36	60.86	0.50
51.35	1.76	1.42	0.34	53.95	63.22	62.71	0.51
51.40	1.82	1.47	0.34	54.00	65.10	64.59	0.51
51.45	2.01	1.67	0.35				
51.50	2.33	1.98	0.35				
51.55	2.73	2.38	0.35				
51.60	3.19	2.84	0.36				
51.65	3.71	3.35	0.36				
51.70	4.29	3.92	0.36				
51.75	4.91	4.54	0.37				
51.80	5.57	5.20	0.37				
51.85	6.28	5.91	0.37				
51.90	7.03	6.65	0.38				
51.95	7.81	7.43	0.38				
52.00	8.64	8.25	0.38				
52.05	9.50	9.11	0.39				
52.10	10.39	10.00	0.39				
52.15	11.32	10.93	0.39				
52.20	12.28	11.89	0.40				
52.25	13.28	12.88	0.40				
52.30	14.30	13.90	0.40				
52.35	15.36	14.96	0.41				

Stage-Area-Storage for Pond P-103: SWMB P-103

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.80	2,096	0	52.40	2,096	2,664
49.85	2,096	42	52.45	2,096	2,664
49.90	2,096	84	52.50	2,096	2,664
49.95	2,096	126	52.55	2,096	2,664
50.00	2,096	168	52.60	2,096	2,664
50.05	2,096	210	52.65	2,096	2,664
50.10	2,096	251	52.70	2,096	2,664
50.15	2,096	293	52.75	2,096	2,664
50.20	2,096	335	52.80	2,096	2,664
50.25	2,096	377	52.85	2,096	2,664
50.30	2,096	419	52.90	2,096	2,664
50.35	2,096	502	52.95	2,096	2,664
50.40	2,096	585	53.00	2,096	2,664
50.45	2,096	667	53.05	2,096	2,664
50.50	2,096	749	53.10	2,096	2,664
50.55	2,096	830	53.15	2,096	2,664
50.60	2,096	910	53.20	2,096	2,664
50.65	2,096	990	53.25	2,096	2,664
50.70	2,096	1,068	53.30	2,096	2,664
50.75	2,096	1,146	53.35	2,096	2,664
50.80	2,096	1,222	53.40	2,096	2,664
50.85	2,096	1,298	53.45	2,096	2,664
50.90	2,096	1,372	53.50	2,096	2,664
50.95	2,096	1,446	53.55	2,096	2,664
51.00	2,096	1,518	53.60	2,096	2,664
51.05	2,096	1,588	53.65	2,096	2,664
51.10	2,096	1,657	53.70	2,096	2,664
51.15	2,096	1,725	53.75	2,096	2,664
51.20	2,096	1,790	53.80	2,096	2,664
51.25	2,096	1,854	53.85	2,096	2,664
51.30	2,096	1,915	53.90	2,096	2,664
51.35	2,096	1,973	53.95	2,096	2,664
51.40	2,096	2,027	54.00	2,096	2,664
51.45	2,096	2,078			
51.50	2,096	2,126			
51.55	2,096	2,172			
51.60	2,096	2,216			
51.65	2,096	2,258			
51.70	2,096	2,300			
51.75	2,096	2,342			
51.80	2,096	2,384			
51.85	2,096	2,426			
51.90	2,096	2,468			
51.95	2,096	2,510			
52.00	2,096	2,552			
52.05	2,096	2,594			
52.10	2,096	2,636			
52.15	2,096	2,664			
52.20	2,096	2,664			
52.25	2,096	2,664			
52.30	2,096	2,664			
52.35	2,096	2,664			

Summary for Pond P-104: P-104

Inflow Area = 17,421 sf, 91.84% Impervious, Inflow Depth = 2.89" for 2-yr event
 Inflow = 1.43 cfs @ 12.02 hrs, Volume= 4,196 cf
 Outflow = 0.43 cfs @ 12.21 hrs, Volume= 4,195 cf, Atten= 70%, Lag= 11.5 min
 Primary = 0.06 cfs @ 12.21 hrs, Volume= 64 cf
 Routed to Pond 5R : MH-102 to MH-103
 Secondary = 0.37 cfs @ 12.21 hrs, Volume= 4,131 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 49.31' @ 12.21 hrs Surf.Area= 2,096 sf Storage= 648 cf

Plug-Flow detention time= 8.8 min calculated for 4,195 cf (100% of inflow)
 Center-of-Mass det. time= 8.7 min (793.8 - 785.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	48.67'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	49.17'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	49.17'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	50.25'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	48.67'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 47.50'

Primary OutFlow Max=0.05 cfs @ 12.21 hrs HW=49.31' (Free Discharge)

↑1=Low Level Orifice (Orifice Controls 0.05 cfs @ 1.26 fps)

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

Secondary OutFlow Max=0.37 cfs @ 12.21 hrs HW=49.31' (Free Discharge)

↑3=Underdrain (Controls 0.37 cfs)

Pond P-104: P-104 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

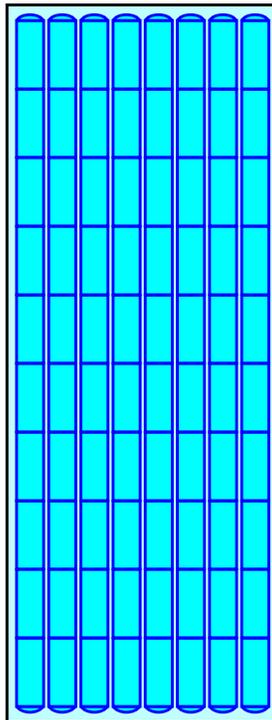
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

80 Chambers

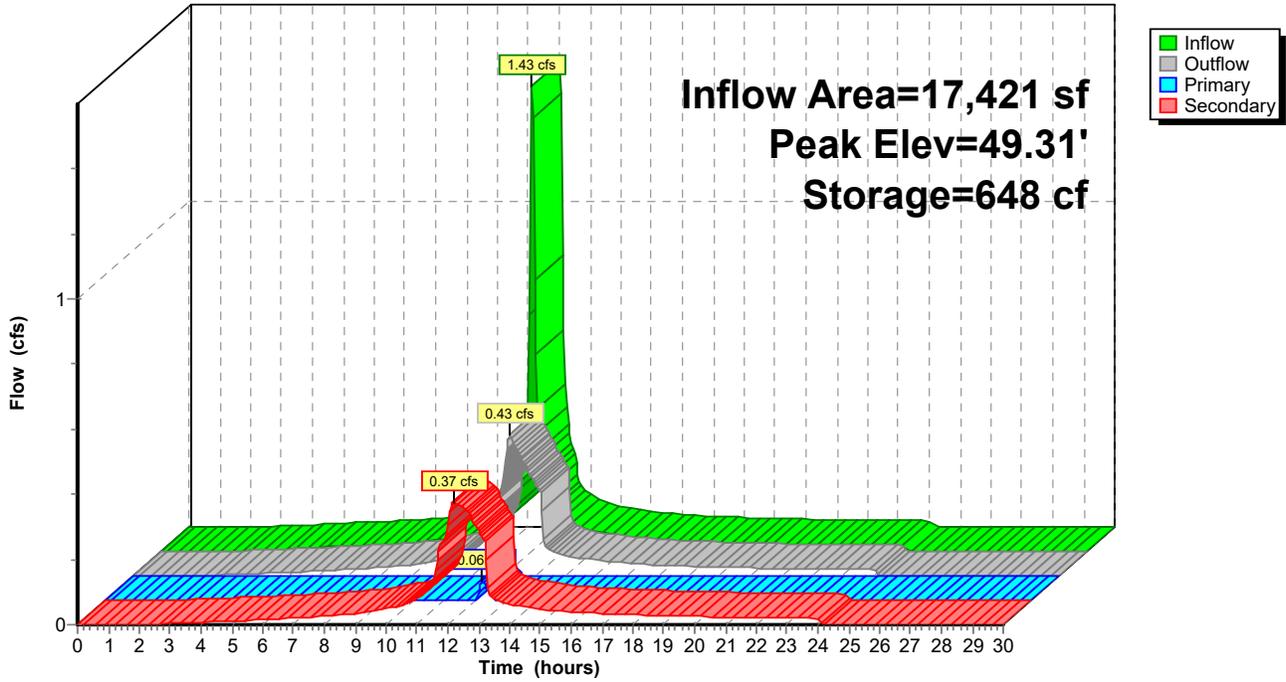
181.1 cy Field

137.4 cy Stone



Pond P-104: P-104

Hydrograph



Stage-Discharge for Pond P-104: P-104

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
48.67	0.00	0.00	0.00	51.27	16.31	15.52	0.78
48.72	0.25	0.00	0.25	51.32	17.43	16.64	0.79
48.77	0.26	0.00	0.26	51.37	18.58	17.78	0.80
48.82	0.27	0.00	0.27	51.42	19.76	18.95	0.81
48.87	0.28	0.00	0.28	51.47	20.97	20.15	0.82
48.92	0.29	0.00	0.29	51.52	22.21	21.38	0.83
48.97	0.30	0.00	0.30	51.57	23.48	22.63	0.84
49.02	0.32	0.00	0.32	51.62	24.77	23.92	0.85
49.07	0.33	0.00	0.33	51.67	26.09	25.23	0.86
49.12	0.34	0.00	0.34	51.72	27.44	26.56	0.87
49.17	0.35	0.00	0.35	51.77	28.81	27.93	0.89
49.22	0.36	0.01	0.36	51.82	30.21	29.32	0.90
49.27	0.40	0.03	0.37	51.87	31.64	30.73	0.91
49.32	0.44	0.07	0.38	51.92	33.09	32.17	0.92
49.37	0.50	0.11	0.39	51.97	34.56	33.64	0.93
49.42	0.57	0.17	0.40	52.02	36.06	35.13	0.94
49.47	0.64	0.23	0.41	52.07	37.59	36.64	0.95
49.52	0.71	0.30	0.42	52.12	39.14	38.18	0.96
49.57	0.79	0.36	0.43	52.17	40.71	39.74	0.97
49.62	0.86	0.43	0.44	52.22	42.31	41.33	0.98
49.67	0.92	0.47	0.45	52.27	43.93	42.94	0.99
49.72	0.98	0.52	0.46	52.32	45.57	44.57	1.00
49.77	1.03	0.56	0.47	52.37	47.24	46.23	1.01
49.82	1.08	0.60	0.48	52.42	48.93	47.91	1.02
49.87	1.13	0.63	0.49	52.47	50.64	49.61	1.03
49.92	1.17	0.67	0.50	52.52	52.37	51.33	1.04
49.97	1.21	0.70	0.51	52.57	54.13	53.08	1.05
50.02	1.25	0.73	0.52	52.62	55.91	54.85	1.06
50.07	1.29	0.76	0.53	52.67	57.71	56.64	1.07
50.12	1.33	0.79	0.54	52.72	59.53	58.45	1.08
50.17	1.37	0.82	0.55	52.77	61.37	60.28	1.09
50.22	1.41	0.85	0.56	52.82	63.23	62.13	1.10
50.27	1.48	0.91	0.57				
50.32	1.72	1.14	0.58				
50.37	2.06	1.47	0.59				
50.42	2.48	1.87	0.61				
50.47	2.95	2.34	0.62				
50.52	3.48	2.86	0.63				
50.57	4.06	3.43	0.64				
50.62	4.69	4.04	0.65				
50.67	5.36	4.71	0.66				
50.72	6.08	5.41	0.67				
50.77	6.83	6.15	0.68				
50.82	7.62	6.93	0.69				
50.87	8.45	7.75	0.70				
50.92	9.32	8.61	0.71				
50.97	10.22	9.50	0.72				
51.02	11.15	10.42	0.73				
51.07	12.12	11.38	0.74				
51.12	13.12	12.37	0.75				
51.17	14.15	13.39	0.76				
51.22	15.21	14.44	0.77				

Stage-Area-Storage for Pond P-104: P-104

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
48.67	2,096	0	51.27	2,096	2,664
48.72	2,096	42	51.32	2,096	2,664
48.77	2,096	84	51.37	2,096	2,664
48.82	2,096	126	51.42	2,096	2,664
48.87	2,096	168	51.47	2,096	2,664
48.92	2,096	210	51.52	2,096	2,664
48.97	2,096	251	51.57	2,096	2,664
49.02	2,096	293	51.62	2,096	2,664
49.07	2,096	335	51.67	2,096	2,664
49.12	2,096	377	51.72	2,096	2,664
49.17	2,096	419	51.77	2,096	2,664
49.22	2,096	502	51.82	2,096	2,664
49.27	2,096	585	51.87	2,096	2,664
49.32	2,096	667	51.92	2,096	2,664
49.37	2,096	749	51.97	2,096	2,664
49.42	2,096	830	52.02	2,096	2,664
49.47	2,096	910	52.07	2,096	2,664
49.52	2,096	990	52.12	2,096	2,664
49.57	2,096	1,068	52.17	2,096	2,664
49.62	2,096	1,146	52.22	2,096	2,664
49.67	2,096	1,222	52.27	2,096	2,664
49.72	2,096	1,298	52.32	2,096	2,664
49.77	2,096	1,372	52.37	2,096	2,664
49.82	2,096	1,446	52.42	2,096	2,664
49.87	2,096	1,518	52.47	2,096	2,664
49.92	2,096	1,588	52.52	2,096	2,664
49.97	2,096	1,657	52.57	2,096	2,664
50.02	2,096	1,725	52.62	2,096	2,664
50.07	2,096	1,790	52.67	2,096	2,664
50.12	2,096	1,854	52.72	2,096	2,664
50.17	2,096	1,915	52.77	2,096	2,664
50.22	2,096	1,973	52.82	2,096	2,664
50.27	2,096	2,027			
50.32	2,096	2,078			
50.37	2,096	2,126			
50.42	2,096	2,172			
50.47	2,096	2,216			
50.52	2,096	2,258			
50.57	2,096	2,300			
50.62	2,096	2,342			
50.67	2,096	2,384			
50.72	2,096	2,426			
50.77	2,096	2,468			
50.82	2,096	2,510			
50.87	2,096	2,552			
50.92	2,096	2,594			
50.97	2,096	2,636			
51.02	2,096	2,664			
51.07	2,096	2,664			
51.12	2,096	2,664			
51.17	2,096	2,664			
51.22	2,096	2,664			

Summary for Pond P-105: SWMB P-105

Inflow Area = 184,140 sf, 100.00% Impervious, Inflow Depth = 3.22" for 2-yr event
 Inflow = 15.96 cfs @ 12.02 hrs, Volume= 49,359 cf
 Outflow = 2.52 cfs @ 12.48 hrs, Volume= 49,359 cf, Atten= 84%, Lag= 27.6 min
 Discarded = 2.52 cfs @ 12.48 hrs, Volume= 49,359 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.04' @ 12.48 hrs Surf.Area= 16,134 sf Storage= 10,577 cf

Plug-Flow detention time= 22.3 min calculated for 49,277 cf (100% of inflow)
 Center-of-Mass det. time= 22.3 min (778.4 - 756.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.00'	14,226 cf	167.75'W x 96.18'L x 3.50'H Field A 56,468 cf Overall - 20,903 cf Embedded = 35,565 cf x 40.0% Voids
#2A	49.50'	20,903 cf	ADS_StormTech SC-740 +Cap x 455 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 455 Chambers in 35 Rows
		35,129 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	4.0' long x 2.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 2.5' Crest Height
#2	Primary	50.70'	6.0" Vert. 6" Low Level Orifice C= 0.600 Limited to weir flow at low heads
#3	Discarded	49.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 46.00'

Discarded OutFlow Max=2.52 cfs @ 12.48 hrs HW=50.04' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 2.52 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=49.00' (Free Discharge)
 ↑ **1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
 ↓ **2=6" Low Level Orifice** (Controls 0.00 cfs)

Pond P-105: SWMB P-105 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 94.18' Row Length +12.0" End Stone x 2 = 96.18' Base Length

35 Rows x 51.0" Wide + 6.0" Spacing x 34 + 12.0" Side Stone x 2 = 167.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

455 Chambers x 45.9 cf = 20,902.7 cf Chamber Storage

56,467.7 cf Field - 20,902.7 cf Chambers = 35,565.0 cf Stone x 40.0% Voids = 14,226.0 cf Stone Storage

Chamber Storage + Stone Storage = 35,128.7 cf = 0.806 af

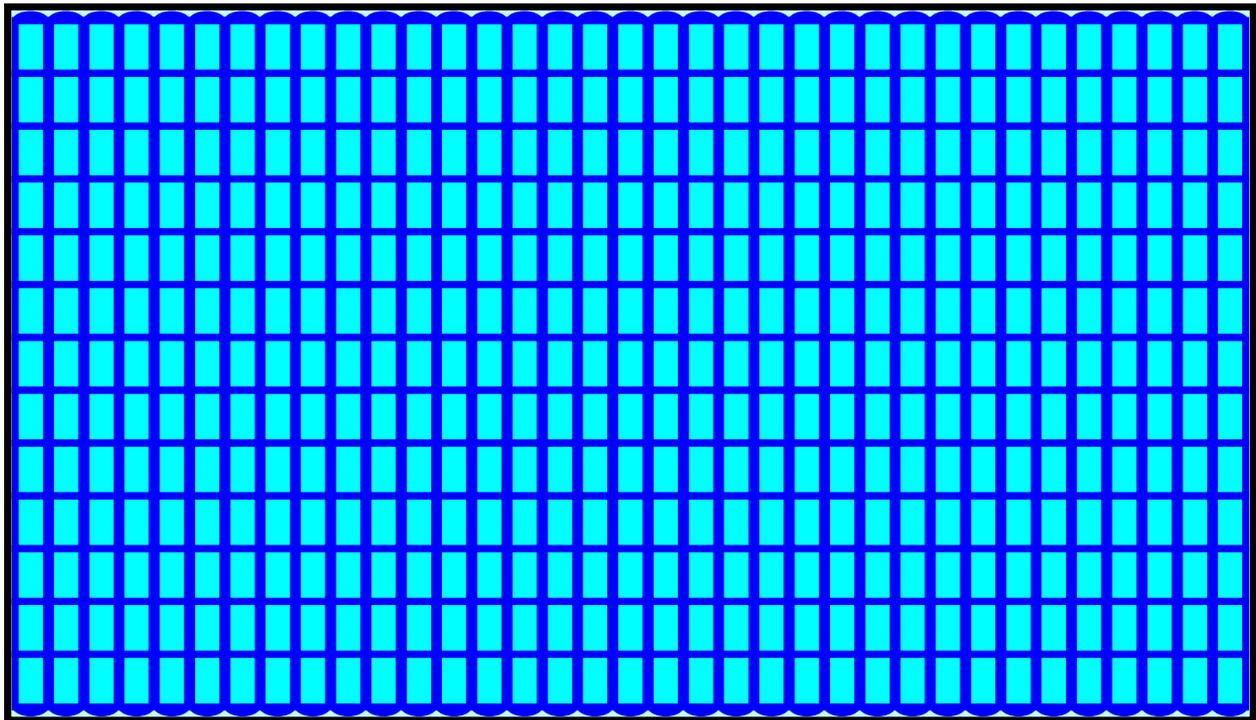
Overall Storage Efficiency = 62.2%

Overall System Size = 96.18' x 167.75' x 3.50'

455 Chambers

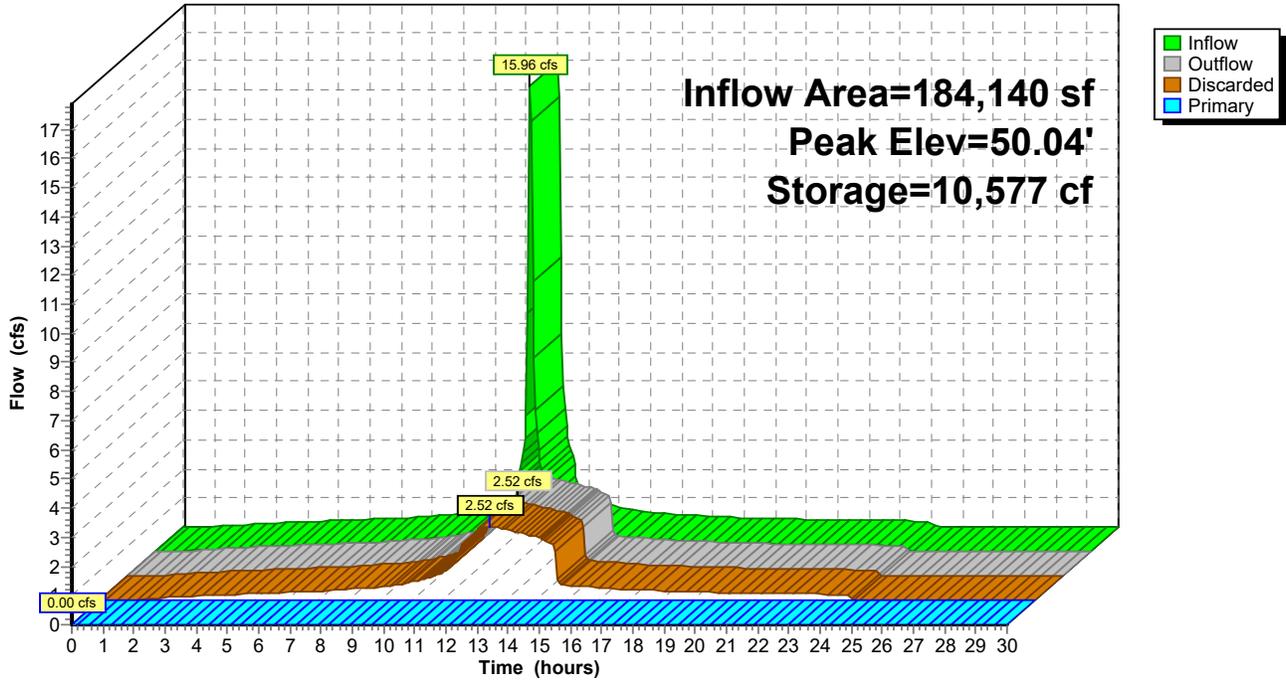
2,091.4 cy Field

1,317.2 cy Stone



Pond P-105: SWMB P-105

Hydrograph



Stage-Discharge for Pond P-105: SWMB P-105

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
49.00	0.00	0.00	0.00	51.60	10.32	3.49	6.83
49.05	1.90	1.90	0.00	51.65	11.15	3.52	7.63
49.10	1.93	1.93	0.00	51.70	12.01	3.55	8.46
49.15	1.96	1.96	0.00	51.75	12.90	3.58	9.32
49.20	1.99	1.99	0.00	51.80	13.82	3.61	10.21
49.25	2.02	2.02	0.00	51.85	14.76	3.64	11.12
49.30	2.05	2.05	0.00	51.90	15.73	3.67	12.06
49.35	2.09	2.09	0.00	51.95	16.72	3.70	13.02
49.40	2.12	2.12	0.00	52.00	17.74	3.73	14.00
49.45	2.15	2.15	0.00	52.05	18.78	3.77	15.01
49.50	2.18	2.18	0.00	52.10	19.84	3.80	16.04
49.55	2.21	2.21	0.00	52.15	20.92	3.83	17.09
49.60	2.24	2.24	0.00	52.20	22.03	3.86	18.17
49.65	2.27	2.27	0.00	52.25	23.15	3.89	19.26
49.70	2.30	2.30	0.00	52.30	24.30	3.92	20.38
49.75	2.33	2.33	0.00	52.35	25.47	3.95	21.51
49.80	2.37	2.37	0.00	52.40	26.65	3.98	22.67
49.85	2.40	2.40	0.00	52.45	27.86	4.01	23.84
49.90	2.43	2.43	0.00	52.50	29.08	4.05	25.04
49.95	2.46	2.46	0.00	52.55	30.32	4.08	26.25
50.00	2.49	2.49	0.00	52.60	31.58	4.11	27.48
50.05	2.52	2.52	0.00	52.65	32.86	4.14	28.72
50.10	2.55	2.55	0.00	52.70	34.16	4.17	29.99
50.15	2.58	2.58	0.00	52.75	35.47	4.20	31.27
50.20	2.61	2.61	0.00	52.80	36.79	4.23	32.56
50.25	2.65	2.65	0.00	52.85	38.14	4.26	33.88
50.30	2.68	2.68	0.00	52.90	39.50	4.29	35.20
50.35	2.71	2.71	0.00	52.95	40.87	4.33	36.55
50.40	2.74	2.74	0.00	53.00	42.27	4.36	37.91
50.45	2.77	2.77	0.00				
50.50	2.80	2.80	0.00				
50.55	2.83	2.83	0.00				
50.60	2.86	2.86	0.00				
50.65	2.89	2.89	0.00				
50.70	2.93	2.93	0.00				
50.75	2.96	2.96	0.01				
50.80	3.02	2.99	0.03				
50.85	3.08	3.02	0.07				
50.90	3.16	3.05	0.11				
50.95	3.25	3.08	0.17				
51.00	3.34	3.11	0.23				
51.05	3.59	3.14	0.44				
51.10	3.95	3.17	0.78				
51.15	4.39	3.21	1.18				
51.20	4.88	3.24	1.64				
51.25	5.42	3.27	2.15				
51.30	6.01	3.30	2.71				
51.35	6.63	3.33	3.30				
51.40	7.30	3.36	3.94				
51.45	8.01	3.39	4.61				
51.50	8.74	3.42	5.32				
51.55	9.51	3.45	6.06				

Stage-Area-Storage for Pond P-105: SWMB P-105

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.00	16,134	0	51.60	16,134	28,842
49.05	16,134	323	51.65	16,134	29,294
49.10	16,134	645	51.70	16,134	29,728
49.15	16,134	968	51.75	16,134	30,136
49.20	16,134	1,291	51.80	16,134	30,521
49.25	16,134	1,613	51.85	16,134	30,884
49.30	16,134	1,936	51.90	16,134	31,234
49.35	16,134	2,259	51.95	16,134	31,573
49.40	16,134	2,581	52.00	16,134	31,902
49.45	16,134	2,904	52.05	16,134	32,225
49.50	16,134	3,227	52.10	16,134	32,547
49.55	16,134	3,911	52.15	16,134	32,870
49.60	16,134	4,594	52.20	16,134	33,193
49.65	16,134	5,277	52.25	16,134	33,515
49.70	16,134	5,958	52.30	16,134	33,838
49.75	16,134	6,637	52.35	16,134	34,161
49.80	16,134	7,313	52.40	16,134	34,483
49.85	16,134	7,987	52.45	16,134	34,806
49.90	16,134	8,659	52.50	16,134	35,129
49.95	16,134	9,328	52.55	16,134	35,129
50.00	16,134	9,994	52.60	16,134	35,129
50.05	16,134	10,658	52.65	16,134	35,129
50.10	16,134	11,318	52.70	16,134	35,129
50.15	16,134	11,975	52.75	16,134	35,129
50.20	16,134	12,629	52.80	16,134	35,129
50.25	16,134	13,279	52.85	16,134	35,129
50.30	16,134	13,926	52.90	16,134	35,129
50.35	16,134	14,570	52.95	16,134	35,129
50.40	16,134	15,209	53.00	16,134	35,129
50.45	16,134	15,845			
50.50	16,134	16,477			
50.55	16,134	17,105			
50.60	16,134	17,728			
50.65	16,134	18,346			
50.70	16,134	18,959			
50.75	16,134	19,567			
50.80	16,134	20,170			
50.85	16,134	20,767			
50.90	16,134	21,359			
50.95	16,134	21,945			
51.00	16,134	22,525			
51.05	16,134	23,098			
51.10	16,134	23,666			
51.15	16,134	24,225			
51.20	16,134	24,776			
51.25	16,134	25,318			
51.30	16,134	25,851			
51.35	16,134	26,376			
51.40	16,134	26,891			
51.45	16,134	27,396			
51.50	16,134	27,891			
51.55	16,134	28,373			

Summary for Pond P-106: SWMB-106

Inflow Area = 60,202 sf, 78.09% Impervious, Inflow Depth = 2.14" for 2-yr event
 Inflow = 3.75 cfs @ 12.03 hrs, Volume= 10,724 cf
 Outflow = 0.94 cfs @ 12.30 hrs, Volume= 10,723 cf, Atten= 75%, Lag= 16.2 min
 Discarded = 0.47 cfs @ 12.30 hrs, Volume= 9,648 cf
 Primary = 0.47 cfs @ 12.30 hrs, Volume= 1,074 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 47.50' @ 12.30 hrs Surf.Area= 2,697 sf Storage= 2,474 cf

Plug-Flow detention time= 28.5 min calculated for 10,723 cf (100% of inflow)
 Center-of-Mass det. time= 28.3 min (860.8 - 832.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.00'	1,904 cf	28.17"W x 95.76"L x 2.33'H Field A 6,294 cf Overall - 1,533 cf Embedded = 4,760 cf x 40.0% Voids
#2A	46.50'	1,533 cf	ADS_StormTech SC-310 +Cap x 104 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 104 Chambers in 8 Rows
		3,437 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	47.50'	4.0' long x 5.00' rise Weir Wall 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.00'

Discarded OutFlow Max=0.47 cfs @ 12.30 hrs HW=47.50' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 0.47 cfs)

Primary OutFlow Max=0.47 cfs @ 12.30 hrs HW=47.50' (Free Discharge)
 ↑ **1=Low Level Orifice** (Orifice Controls 0.47 cfs @ 2.41 fps)
 ↓ **2=Weir Wall** (Controls 0.00 cfs)

Pond P-106: SWMB-106 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

104 Chambers x 14.7 cf = 1,533.2 cf Chamber Storage

6,293.6 cf Field - 1,533.2 cf Chambers = 4,760.4 cf Stone x 40.0% Voids = 1,904.2 cf Stone Storage

Chamber Storage + Stone Storage = 3,437.3 cf = 0.079 af

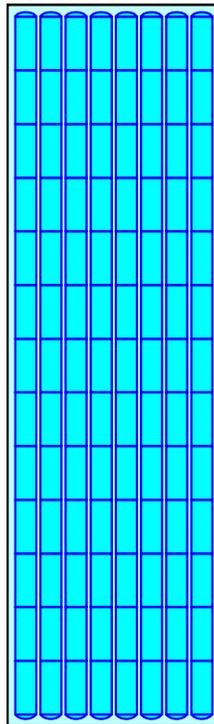
Overall Storage Efficiency = 54.6%

Overall System Size = 95.76' x 28.17' x 2.33'

104 Chambers

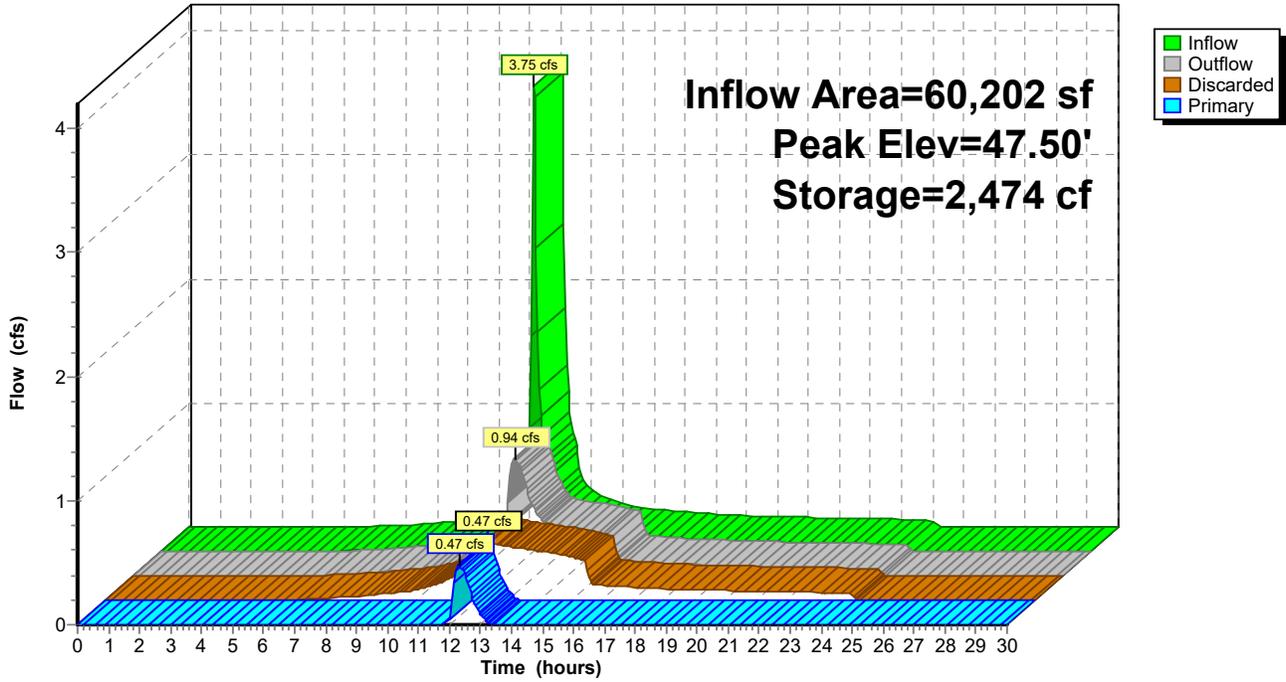
233.1 cy Field

176.3 cy Stone



Pond P-106: SWMB-106

Hydrograph



Stage-Discharge for Pond P-106: SWMB-106

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.00	0.00	0.00	0.00	51.20	101.49	0.85	100.64
46.10	0.32	0.32	0.00	51.30	105.57	0.86	104.70
46.20	0.33	0.33	0.00	51.40	109.69	0.87	108.81
46.30	0.34	0.34	0.00	51.50	113.85	0.88	112.97
46.40	0.35	0.35	0.00	51.60	118.06	0.89	117.16
46.50	0.36	0.36	0.00	51.70	122.31	0.91	121.40
46.60	0.37	0.37	0.00	51.80	126.59	0.92	125.68
46.70	0.39	0.39	0.00	51.90	130.92	0.93	129.99
46.80	0.40	0.40	0.00	52.00	135.28	0.94	134.34
46.90	0.41	0.41	0.00	52.10	139.67	0.95	138.72
47.00	0.42	0.42	0.00	52.20	144.10	0.96	143.14
47.10	0.46	0.43	0.03	52.30	148.55	0.97	147.59
47.20	0.55	0.44	0.11	52.40	153.04	0.98	152.06
47.30	0.68	0.45	0.23	52.50	157.56	0.99	156.57
47.40	0.82	0.46	0.36				
47.50	0.94	0.47	0.47				
47.60	1.45	0.48	0.97				
47.70	2.30	0.49	1.81				
47.80	3.37	0.50	2.87				
47.90	4.62	0.51	4.11				
48.00	6.03	0.52	5.51				
48.10	7.59	0.53	7.06				
48.20	9.28	0.54	8.74				
48.30	11.09	0.55	10.54				
48.40	13.02	0.56	12.46				
48.50	15.07	0.57	14.50				
48.60	17.22	0.58	16.64				
48.70	19.48	0.59	18.88				
48.80	21.83	0.60	21.23				
48.90	24.28	0.61	23.67				
49.00	26.82	0.62	26.20				
49.10	29.45	0.63	28.82				
49.20	32.17	0.65	31.53				
49.30	34.97	0.66	34.32				
49.40	37.86	0.67	37.19				
49.50	40.82	0.68	40.14				
49.60	43.86	0.69	43.18				
49.70	46.98	0.70	46.28				
49.80	50.17	0.71	49.46				
49.90	53.43	0.72	52.71				
50.00	56.76	0.73	56.03				
50.10	60.16	0.74	59.42				
50.20	63.62	0.75	62.87				
50.30	67.15	0.76	66.39				
50.40	70.74	0.77	69.97				
50.50	74.39	0.78	73.61				
50.60	78.10	0.79	77.31				
50.70	81.86	0.80	81.06				
50.80	85.69	0.81	84.87				
50.90	89.56	0.82	88.74				
51.00	93.49	0.83	92.66				
51.10	97.47	0.84	96.62				

Stage-Area-Storage for Pond P-106: SWMB-106

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.00	2,697	0	51.20	2,697	3,437
46.10	2,697	108	51.30	2,697	3,437
46.20	2,697	216	51.40	2,697	3,437
46.30	2,697	324	51.50	2,697	3,437
46.40	2,697	432	51.60	2,697	3,437
46.50	2,697	539	51.70	2,697	3,437
46.60	2,697	754	51.80	2,697	3,437
46.70	2,697	966	51.90	2,697	3,437
46.80	2,697	1,174	52.00	2,697	3,437
46.90	2,697	1,379	52.10	2,697	3,437
47.00	2,697	1,578	52.20	2,697	3,437
47.10	2,697	1,772	52.30	2,697	3,437
47.20	2,697	1,960	52.40	2,697	3,437
47.30	2,697	2,141	52.50	2,697	3,437
47.40	2,697	2,312			
47.50	2,697	2,473			
47.60	2,697	2,618			
47.70	2,697	2,745			
47.80	2,697	2,861			
47.90	2,697	2,970			
48.00	2,697	3,078			
48.10	2,697	3,186			
48.20	2,697	3,293			
48.30	2,697	3,401			
48.40	2,697	3,437			
48.50	2,697	3,437			
48.60	2,697	3,437			
48.70	2,697	3,437			
48.80	2,697	3,437			
48.90	2,697	3,437			
49.00	2,697	3,437			
49.10	2,697	3,437			
49.20	2,697	3,437			
49.30	2,697	3,437			
49.40	2,697	3,437			
49.50	2,697	3,437			
49.60	2,697	3,437			
49.70	2,697	3,437			
49.80	2,697	3,437			
49.90	2,697	3,437			
50.00	2,697	3,437			
50.10	2,697	3,437			
50.20	2,697	3,437			
50.30	2,697	3,437			
50.40	2,697	3,437			
50.50	2,697	3,437			
50.60	2,697	3,437			
50.70	2,697	3,437			
50.80	2,697	3,437			
50.90	2,697	3,437			
51.00	2,697	3,437			
51.10	2,697	3,437			

Summary for Pond P-107: SWMB P-107

Inflow Area = 90,871 sf, 92.92% Impervious, Inflow Depth = 2.79" for 2-yr event
 Inflow = 7.28 cfs @ 12.02 hrs, Volume= 21,104 cf
 Outflow = 2.53 cfs @ 12.19 hrs, Volume= 21,109 cf, Atten= 65%, Lag= 10.2 min
 Discarded = 0.81 cfs @ 12.19 hrs, Volume= 17,819 cf
 Primary = 1.72 cfs @ 12.19 hrs, Volume= 3,289 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 48.16' @ 12.19 hrs Surf.Area= 3,974 sf Storage= 4,648 cf

Plug-Flow detention time= 26.3 min calculated for 21,074 cf (100% of inflow)
 Center-of-Mass det. time= 26.4 min (819.0 - 792.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.10'	2,789 cf	41.50'W x 95.76'L x 2.33'H Field A 9,273 cf Overall - 2,300 cf Embedded = 6,973 cf x 40.0% Voids
#2A	46.60'	2,300 cf	ADS_StormTech SC-310 +Cap x 156 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 156 Chambers in 12 Rows
		5,089 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	48.00'	4.0' long x 5.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.10'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.40'

Discarded OutFlow Max=0.81 cfs @ 12.19 hrs HW=48.15' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 0.81 cfs)

Primary OutFlow Max=1.68 cfs @ 12.19 hrs HW=48.15' (Free Discharge)
 ↑ **1=Low Level Orifice** (Orifice Controls 0.90 cfs @ 4.57 fps)
 ↓ **2=Sharp-Crested Rectangular Weir** (Weir Controls 0.78 cfs @ 1.29 fps)

Pond P-107: SWMB P-107 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

12 Rows x 34.0" Wide + 6.0" Spacing x 11 + 12.0" Side Stone x 2 = 41.50' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

156 Chambers x 14.7 cf = 2,299.7 cf Chamber Storage

9,272.8 cf Field - 2,299.7 cf Chambers = 6,973.0 cf Stone x 40.0% Voids = 2,789.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,089.0 cf = 0.117 af

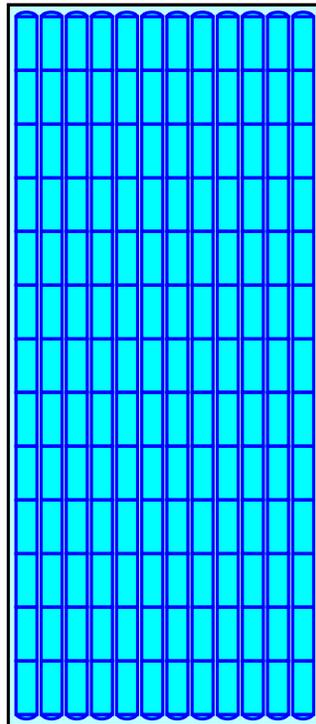
Overall Storage Efficiency = 54.9%

Overall System Size = 95.76' x 41.50' x 2.33'

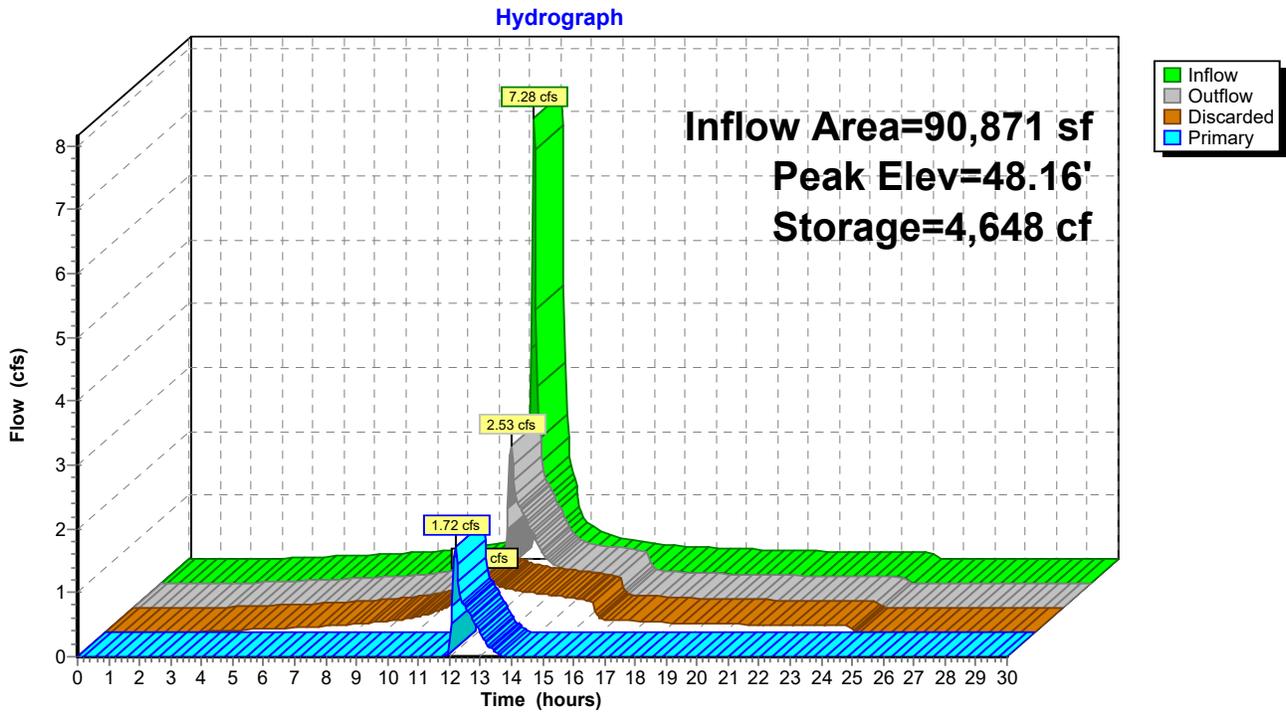
156 Chambers

343.4 cy Field

258.3 cy Stone



Pond P-107: SWMB P-107



Stage-Discharge for Pond P-107: SWMB P-107

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.10	0.00	0.00	0.00	51.30	86.34	1.35	85.00
46.20	0.48	0.48	0.00	51.40	90.22	1.36	88.86
46.30	0.49	0.49	0.00	51.50	94.15	1.38	92.77
46.40	0.51	0.51	0.00	51.60	98.14	1.40	96.74
46.50	0.53	0.53	0.00	51.70	102.17	1.41	100.76
46.60	0.55	0.55	0.00	51.80	106.25	1.43	104.82
46.70	0.56	0.56	0.00	51.90	110.37	1.45	108.93
46.80	0.58	0.58	0.00	52.00	114.54	1.47	113.08
46.90	0.60	0.60	0.00	52.10	118.76	1.48	117.27
47.00	0.61	0.61	0.00	52.20	123.01	1.50	121.51
47.10	0.66	0.63	0.03	52.30	127.30	1.52	125.78
47.20	0.76	0.65	0.11	52.40	131.63	1.53	130.10
47.30	0.89	0.66	0.23	52.50	135.99	1.55	134.44
47.40	1.04	0.68	0.36	52.60	140.39	1.57	138.83
47.50	1.17	0.70	0.47	52.70	144.83	1.58	143.24
47.60	1.27	0.72	0.56	52.80	149.29	1.60	147.69
47.70	1.37	0.73	0.63	52.90	153.78	1.62	152.16
47.80	1.45	0.75	0.70	53.00	158.30	1.64	156.67
47.90	1.53	0.77	0.76				
48.00	1.60	0.78	0.82				
48.10	2.09	0.80	1.29				
48.20	2.92	0.82	2.10				
48.30	3.97	0.83	3.14				
48.40	5.21	0.85	4.36				
48.50	6.62	0.87	5.75				
48.60	8.17	0.89	7.28				
48.70	9.86	0.90	8.95				
48.80	11.67	0.92	10.75				
48.90	13.60	0.94	12.66				
49.00	15.64	0.95	14.69				
49.10	17.80	0.97	16.83				
49.20	20.05	0.99	19.06				
49.30	22.41	1.01	21.40				
49.40	24.86	1.02	23.84				
49.50	27.40	1.04	26.36				
49.60	30.04	1.06	28.98				
49.70	32.76	1.07	31.69				
49.80	35.56	1.09	34.47				
49.90	38.45	1.11	37.34				
50.00	41.42	1.12	40.29				
50.10	44.46	1.14	43.32				
50.20	47.58	1.16	46.43				
50.30	50.78	1.18	49.60				
50.40	54.04	1.19	52.85				
50.50	57.38	1.21	56.17				
50.60	60.78	1.23	59.55				
50.70	64.25	1.24	63.00				
50.80	67.78	1.26	66.52				
50.90	71.37	1.28	70.10				
51.00	75.03	1.29	73.74				
51.10	78.74	1.31	77.43				
51.20	82.51	1.33	81.19				

Stage-Area-Storage for Pond P-107: SWMB P-107

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.10	3,974	0	51.30	3,974	5,089
46.20	3,974	159	51.40	3,974	5,089
46.30	3,974	318	51.50	3,974	5,089
46.40	3,974	477	51.60	3,974	5,089
46.50	3,974	636	51.70	3,974	5,089
46.60	3,974	795	51.80	3,974	5,089
46.70	3,974	1,114	51.90	3,974	5,089
46.80	3,974	1,429	52.00	3,974	5,089
46.90	3,974	1,739	52.10	3,974	5,089
47.00	3,974	2,042	52.20	3,974	5,089
47.10	3,974	2,339	52.30	3,974	5,089
47.20	3,974	2,627	52.40	3,974	5,089
47.30	3,974	2,906	52.50	3,974	5,089
47.40	3,974	3,174	52.60	3,974	5,089
47.50	3,974	3,428	52.70	3,974	5,089
47.60	3,974	3,667	52.80	3,974	5,089
47.70	3,974	3,881	52.90	3,974	5,089
47.80	3,974	4,069	53.00	3,974	5,089
47.90	3,974	4,240			
48.00	3,974	4,400			
48.10	3,974	4,559			
48.20	3,974	4,718			
48.30	3,974	4,877			
48.40	3,974	5,036			
48.50	3,974	5,089			
48.60	3,974	5,089			
48.70	3,974	5,089			
48.80	3,974	5,089			
48.90	3,974	5,089			
49.00	3,974	5,089			
49.10	3,974	5,089			
49.20	3,974	5,089			
49.30	3,974	5,089			
49.40	3,974	5,089			
49.50	3,974	5,089			
49.60	3,974	5,089			
49.70	3,974	5,089			
49.80	3,974	5,089			
49.90	3,974	5,089			
50.00	3,974	5,089			
50.10	3,974	5,089			
50.20	3,974	5,089			
50.30	3,974	5,089			
50.40	3,974	5,089			
50.50	3,974	5,089			
50.60	3,974	5,089			
50.70	3,974	5,089			
50.80	3,974	5,089			
50.90	3,974	5,089			
51.00	3,974	5,089			
51.10	3,974	5,089			
51.20	3,974	5,089			

Summary for Pond P-108: SWMB P-108

Inflow Area = 370,807 sf, 93.15% Impervious, Inflow Depth = 0.39" for 2-yr event
 Inflow = 3.17 cfs @ 12.20 hrs, Volume= 12,137 cf
 Outflow = 0.13 cfs @ 14.20 hrs, Volume= 9,150 cf, Atten= 96%, Lag= 119.9 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12
 Secondary = 0.13 cfs @ 14.20 hrs, Volume= 9,150 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 45.40' @ 14.20 hrs Surf.Area= 20,713 sf Storage= 8,134 cf

Plug-Flow detention time= 480.6 min calculated for 9,150 cf (75% of inflow)
 Center-of-Mass det. time= 405.7 min (1,199.1 - 793.4)

Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	153,555 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	20,005	0	0
46.00	21,777	20,891	20,891
47.00	23,610	22,694	43,585
48.00	25,502	24,556	68,141
49.00	27,451	26,477	94,617
50.00	29,456	28,454	123,071
51.00	31,513	30,485	153,555

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	49.00'	24.0" x 36.0" Horiz. OCS-203 Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	48.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#4	Secondary	45.00'	0.270 in/hr Underdrain over Surface area

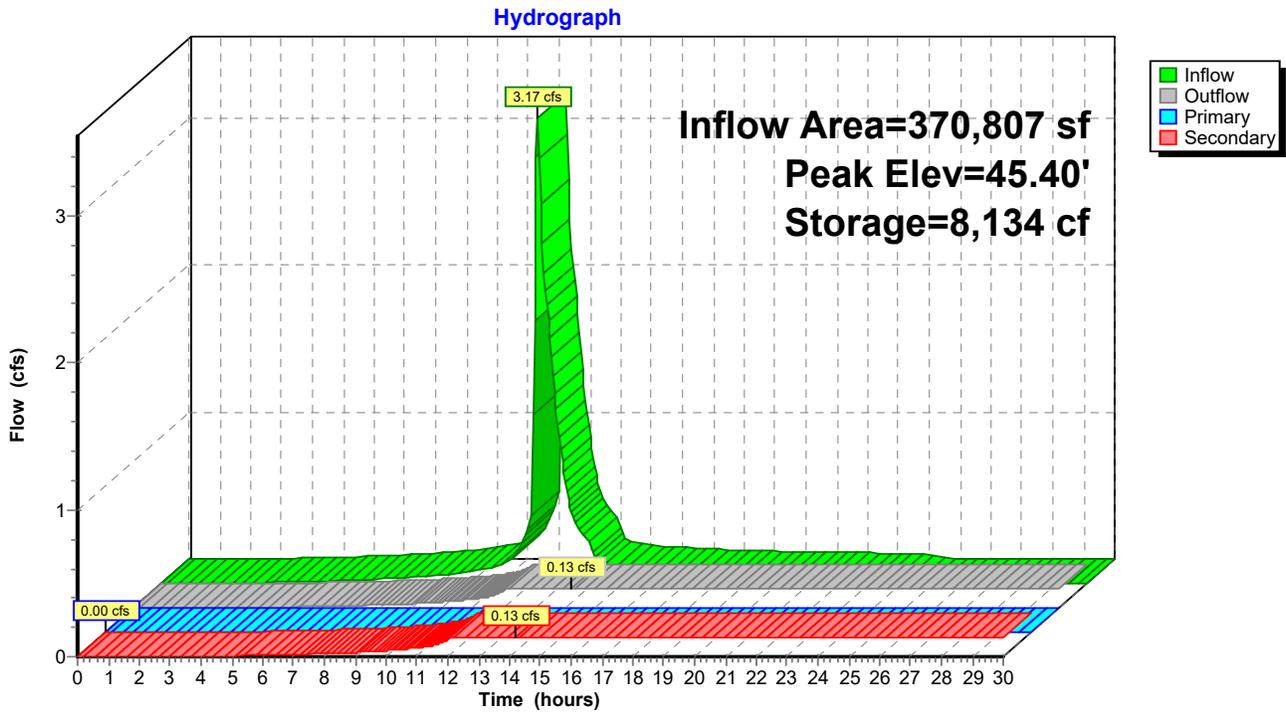
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)

- 1=Overflow Spillway (Controls 0.00 cfs)
- 2=OCS-203 Grate (Controls 0.00 cfs)
- 3=Low Level Orifice (Controls 0.00 cfs)

Secondary OutFlow Max=0.13 cfs @ 14.20 hrs HW=45.40' (Free Discharge)

- 4=Underdrain (Exfiltration Controls 0.13 cfs)

Pond P-108: SWMB P-108



Stage-Discharge for Pond P-108: SWMB P-108

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
45.00	0.00	0.00	0.00	50.20	35.43	35.25	0.19
45.10	0.13	0.00	0.13	50.30	38.86	38.67	0.19
45.20	0.13	0.00	0.13	50.40	42.80	42.61	0.19
45.30	0.13	0.00	0.13	50.50	47.37	47.18	0.19
45.40	0.13	0.00	0.13	50.60	52.54	52.35	0.19
45.50	0.13	0.00	0.13	50.70	57.78	57.58	0.19
45.60	0.13	0.00	0.13	50.80	63.41	63.21	0.19
45.70	0.13	0.00	0.13	50.90	69.43	69.24	0.20
45.80	0.13	0.00	0.13	51.00	75.85	75.66	0.20
45.90	0.13	0.00	0.13				
46.00	0.14	0.00	0.14				
46.10	0.14	0.00	0.14				
46.20	0.14	0.00	0.14				
46.30	0.14	0.00	0.14				
46.40	0.14	0.00	0.14				
46.50	0.14	0.00	0.14				
46.60	0.14	0.00	0.14				
46.70	0.14	0.00	0.14				
46.80	0.15	0.00	0.15				
46.90	0.15	0.00	0.15				
47.00	0.15	0.00	0.15				
47.10	0.15	0.00	0.15				
47.20	0.15	0.00	0.15				
47.30	0.15	0.00	0.15				
47.40	0.15	0.00	0.15				
47.50	0.15	0.00	0.15				
47.60	0.15	0.00	0.15				
47.70	0.16	0.00	0.16				
47.80	0.16	0.00	0.16				
47.90	0.16	0.00	0.16				
48.00	0.16	0.00	0.16				
48.10	0.19	0.03	0.16				
48.20	0.27	0.11	0.16				
48.30	0.39	0.23	0.16				
48.40	0.53	0.36	0.16				
48.50	0.64	0.47	0.17				
48.60	0.73	0.56	0.17				
48.70	0.80	0.63	0.17				
48.80	0.87	0.70	0.17				
48.90	0.93	0.76	0.17				
49.00	0.99	0.82	0.17				
49.10	2.08	1.91	0.17				
49.20	4.02	3.85	0.17				
49.30	6.52	6.34	0.18				
49.40	9.46	9.29	0.18				
49.50	12.80	12.62	0.18				
49.60	16.48	16.30	0.18				
49.70	20.47	20.29	0.18				
49.80	24.76	24.58	0.18				
49.90	28.80	28.62	0.18				
50.00	30.32	30.14	0.18				
50.10	32.56	32.37	0.19				

Stage-Area-Storage for Pond P-108: SWMB P-108

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
45.00	20,005	0	50.20	29,867	129,003
45.10	20,182	2,009	50.30	30,073	132,000
45.20	20,359	4,036	50.40	30,279	135,017
45.30	20,537	6,081	50.50	30,485	138,056
45.40	20,714	8,144	50.60	30,690	141,114
45.50	20,891	10,224	50.70	30,896	144,194
45.60	21,068	12,322	50.80	31,102	147,294
45.70	21,245	14,438	50.90	31,307	150,414
45.80	21,423	16,571	51.00	31,513	153,555
45.90	21,600	18,722			
46.00	21,777	20,891			
46.10	21,960	23,078			
46.20	22,144	25,283			
46.30	22,327	27,507			
46.40	22,510	29,748			
46.50	22,694	32,009			
46.60	22,877	34,287			
46.70	23,060	36,584			
46.80	23,243	38,899			
46.90	23,427	41,233			
47.00	23,610	43,585			
47.10	23,799	45,955			
47.20	23,988	48,344			
47.30	24,178	50,753			
47.40	24,367	53,180			
47.50	24,556	55,626			
47.60	24,745	58,091			
47.70	24,934	60,575			
47.80	25,124	63,078			
47.90	25,313	65,600			
48.00	25,502	68,141			
48.10	25,697	70,700			
48.20	25,892	73,280			
48.30	26,087	75,879			
48.40	26,282	78,497			
48.50	26,477	81,135			
48.60	26,671	83,793			
48.70	26,866	86,469			
48.80	27,061	89,166			
48.90	27,256	91,882			
49.00	27,451	94,617			
49.10	27,652	97,372			
49.20	27,852	100,147			
49.30	28,052	102,943			
49.40	28,253	105,758			
49.50	28,454	108,593			
49.60	28,654	111,449			
49.70	28,855	114,324			
49.80	29,055	117,219			
49.90	29,255	120,135			
50.00	29,456	123,071			
50.10	29,662	126,026			

Summary for Pond P-109: SWMB P-109

Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 1.93" for 2-yr event
 Inflow = 3.41 cfs @ 12.33 hrs, Volume= 32,749 cf
 Outflow = 1.14 cfs @ 13.25 hrs, Volume= 32,749 cf, Atten= 67%, Lag= 55.2 min
 Discarded = 1.14 cfs @ 13.25 hrs, Volume= 32,749 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 43.50' @ 13.25 hrs Surf.Area= 7,391 sf Storage= 9,955 cf

Plug-Flow detention time= 67.5 min calculated for 32,694 cf (100% of inflow)
 Center-of-Mass det. time= 67.4 min (902.7 - 835.2)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	26,865 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	5,939	0	0
43.00	6,891	6,415	6,415
44.00	7,900	7,396	13,811
45.00	8,966	8,433	22,244
45.50	9,519	4,621	26,865

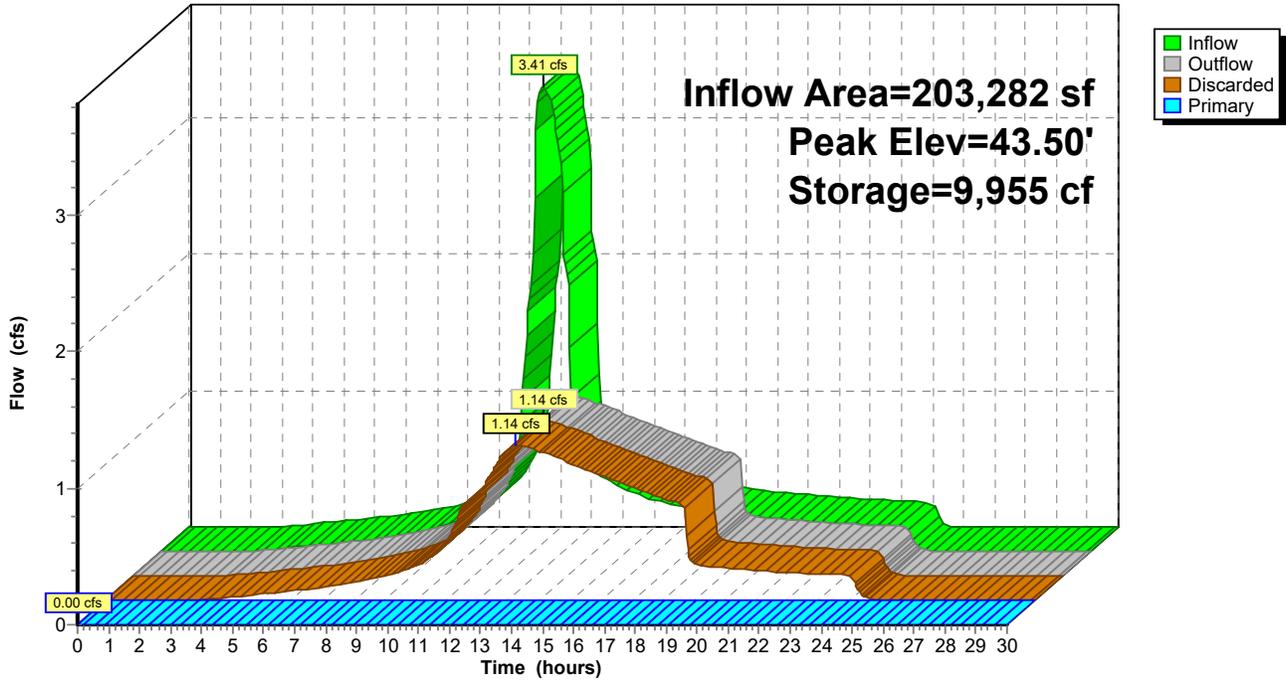
Device	Routing	Invert	Outlet Devices
#1	Primary	44.50'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	43.80'	1.0' long + 4.0 ' SideZ x 8.0' breadth Outlet Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Discarded	42.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 38.00'

Discarded OutFlow Max=1.14 cfs @ 13.25 hrs HW=43.50' (Free Discharge)
 ↑**3=Exfiltration** (Controls 1.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.00' (Free Discharge)
 ↑**1=Overflow Spillway** (Controls 0.00 cfs)
 ↑**2=Outlet Spillway** (Controls 0.00 cfs)

Pond P-109: SWMB P-109

Hydrograph



Stage-Discharge for Pond P-109: SWMB P-109

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
42.00	0.00	0.00	0.00	44.60	9.15	1.51	7.64
42.05	0.70	0.70	0.00	44.65	10.83	1.53	9.30
42.10	0.72	0.72	0.00	44.70	12.72	1.55	11.17
42.15	0.73	0.73	0.00	44.75	14.86	1.57	13.29
42.20	0.74	0.74	0.00	44.80	17.22	1.58	15.63
42.25	0.76	0.76	0.00	44.85	19.81	1.60	18.21
42.30	0.77	0.77	0.00	44.90	22.64	1.62	21.02
42.35	0.79	0.79	0.00	44.95	25.73	1.64	24.10
42.40	0.80	0.80	0.00	45.00	29.08	1.66	27.43
42.45	0.82	0.82	0.00	45.05	32.65	1.67	30.97
42.50	0.83	0.83	0.00	45.10	36.47	1.69	34.78
42.55	0.85	0.85	0.00	45.15	40.29	1.71	38.58
42.60	0.86	0.86	0.00	45.20	44.31	1.73	42.58
42.65	0.88	0.88	0.00	45.25	48.53	1.75	46.78
42.70	0.89	0.89	0.00	45.30	52.95	1.77	51.18
42.75	0.91	0.91	0.00	45.35	57.56	1.78	55.78
42.80	0.92	0.92	0.00	45.40	62.38	1.80	60.58
42.85	0.94	0.94	0.00	45.45	67.46	1.82	65.64
42.90	0.95	0.95	0.00	45.50	72.76	1.84	70.92
42.95	0.97	0.97	0.00				
43.00	0.98	0.98	0.00				
43.05	1.00	1.00	0.00				
43.10	1.01	1.01	0.00				
43.15	1.03	1.03	0.00				
43.20	1.04	1.04	0.00				
43.25	1.06	1.06	0.00				
43.30	1.08	1.08	0.00				
43.35	1.09	1.09	0.00				
43.40	1.11	1.11	0.00				
43.45	1.12	1.12	0.00				
43.50	1.14	1.14	0.00				
43.55	1.16	1.16	0.00				
43.60	1.17	1.17	0.00				
43.65	1.19	1.19	0.00				
43.70	1.21	1.21	0.00				
43.75	1.22	1.22	0.00				
43.80	1.24	1.24	0.00				
43.85	1.29	1.26	0.03				
43.90	1.37	1.27	0.10				
43.95	1.50	1.29	0.21				
44.00	1.66	1.31	0.36				
44.05	1.88	1.32	0.55				
44.10	2.14	1.34	0.80				
44.15	2.46	1.36	1.10				
44.20	2.84	1.37	1.47				
44.25	3.29	1.39	1.90				
44.30	3.82	1.41	2.41				
44.35	4.42	1.43	2.99				
44.40	5.11	1.44	3.66				
44.45	5.81	1.46	4.35				
44.50	6.59	1.48	5.11				
44.55	7.72	1.50	6.22				

Stage-Area-Storage for Pond P-109: SWMB P-109

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
42.00	5,939	0	44.60	8,540	18,742
42.05	5,987	298	44.65	8,593	19,171
42.10	6,034	599	44.70	8,646	19,602
42.15	6,082	902	44.75	8,700	20,035
42.20	6,129	1,207	44.80	8,753	20,472
42.25	6,177	1,515	44.85	8,806	20,911
42.30	6,225	1,825	44.90	8,859	21,352
42.35	6,272	2,137	44.95	8,913	21,797
42.40	6,320	2,452	45.00	8,966	22,244
42.45	6,367	2,769	45.05	9,021	22,693
42.50	6,415	3,089	45.10	9,077	23,146
42.55	6,463	3,410	45.15	9,132	23,601
42.60	6,510	3,735	45.20	9,187	24,059
42.65	6,558	4,061	45.25	9,243	24,520
42.70	6,605	4,391	45.30	9,298	24,983
42.75	6,653	4,722	45.35	9,353	25,449
42.80	6,701	5,056	45.40	9,408	25,918
42.85	6,748	5,392	45.45	9,464	26,390
42.90	6,796	5,731	45.50	9,519	26,865
42.95	6,843	6,072			
43.00	6,891	6,415			
43.05	6,941	6,761			
43.10	6,992	7,109			
43.15	7,042	7,460			
43.20	7,093	7,813			
43.25	7,143	8,169			
43.30	7,194	8,528			
43.35	7,244	8,889			
43.40	7,295	9,252			
43.45	7,345	9,618			
43.50	7,396	9,987			
43.55	7,446	10,358			
43.60	7,496	10,731			
43.65	7,547	11,107			
43.70	7,597	11,486			
43.75	7,648	11,867			
43.80	7,698	12,251			
43.85	7,749	12,637			
43.90	7,799	13,026			
43.95	7,850	13,417			
44.00	7,900	13,811			
44.05	7,953	14,207			
44.10	8,007	14,606			
44.15	8,060	15,007			
44.20	8,113	15,412			
44.25	8,167	15,819			
44.30	8,220	16,228			
44.35	8,273	16,641			
44.40	8,326	17,056			
44.45	8,380	17,473			
44.50	8,433	17,894			
44.55	8,486	18,317			

Summary for Pond SB-LS: SB-LS

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 0.11" for 2-yr event
 Inflow = 0.01 cfs @ 15.52 hrs, Volume= 476 cf
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 41.59' @ 30.00 hrs Surf.Area= 606 sf Storage= 476 cf

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

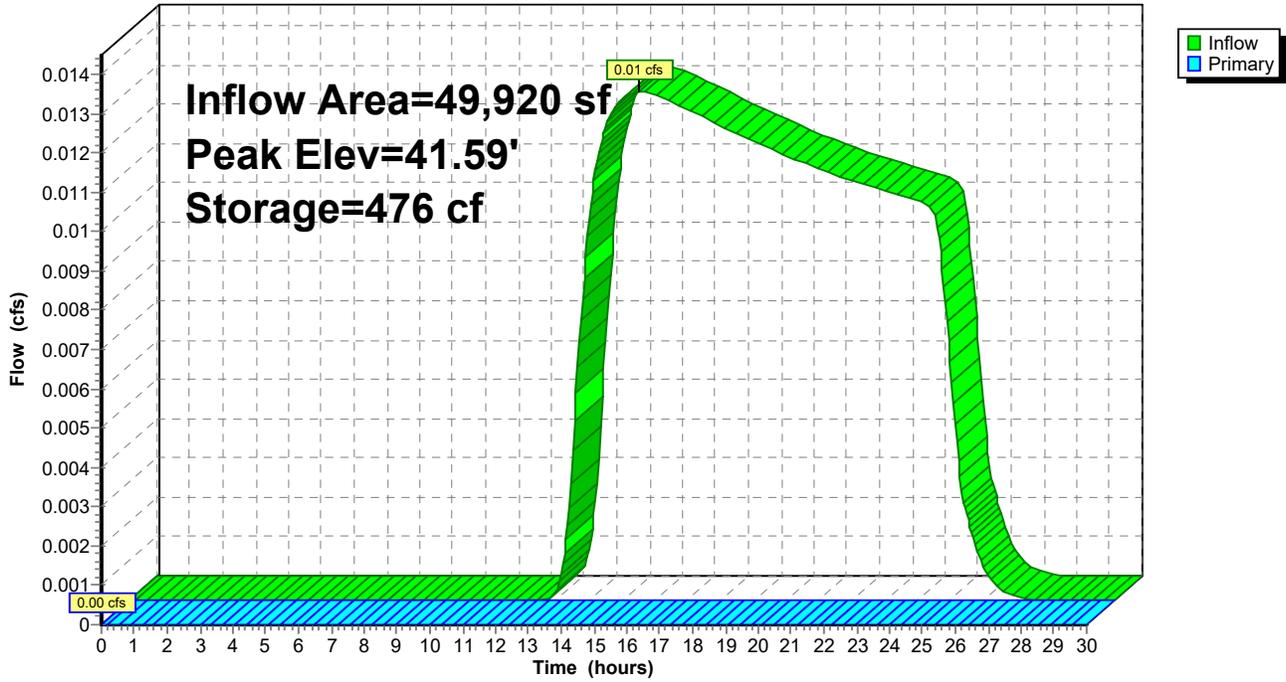
Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	3,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
40.50	290	0	0
41.00	416	177	177
42.00	741	579	755
43.00	1,489	1,115	1,870
43.50	1,747	809	2,679
44.00	2,020	942	3,621

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	50.0' long + 3.0 ' SideZ x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=40.50' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond SB-LS: SB-LS

Hydrograph



Stage-Discharge for Pond SB-LS: SB-LS

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
40.50	0.00	41.54	0.00	42.58	0.00	43.62	4.95
40.52	0.00	41.56	0.00	42.60	0.00	43.64	6.25
40.54	0.00	41.58	0.00	42.62	0.00	43.66	7.64
40.56	0.00	41.60	0.00	42.64	0.00	43.68	9.13
40.58	0.00	41.62	0.00	42.66	0.00	43.70	10.70
40.60	0.00	41.64	0.00	42.68	0.00	43.72	12.43
40.62	0.00	41.66	0.00	42.70	0.00	43.74	14.26
40.64	0.00	41.68	0.00	42.72	0.00	43.76	16.19
40.66	0.00	41.70	0.00	42.74	0.00	43.78	18.21
40.68	0.00	41.72	0.00	42.76	0.00	43.80	20.34
40.70	0.00	41.74	0.00	42.78	0.00	43.82	22.55
40.72	0.00	41.76	0.00	42.80	0.00	43.84	24.86
40.74	0.00	41.78	0.00	42.82	0.00	43.86	27.27
40.76	0.00	41.80	0.00	42.84	0.00	43.88	29.77
40.78	0.00	41.82	0.00	42.86	0.00	43.90	32.36
40.80	0.00	41.84	0.00	42.88	0.00	43.92	35.11
40.82	0.00	41.86	0.00	42.90	0.00	43.94	37.97
40.84	0.00	41.88	0.00	42.92	0.00	43.96	40.93
40.86	0.00	41.90	0.00	42.94	0.00	43.98	43.99
40.88	0.00	41.92	0.00	42.96	0.00	44.00	47.16
40.90	0.00	41.94	0.00	42.98	0.00		
40.92	0.00	41.96	0.00	43.00	0.00		
40.94	0.00	41.98	0.00	43.02	0.00		
40.96	0.00	42.00	0.00	43.04	0.00		
40.98	0.00	42.02	0.00	43.06	0.00		
41.00	0.00	42.04	0.00	43.08	0.00		
41.02	0.00	42.06	0.00	43.10	0.00		
41.04	0.00	42.08	0.00	43.12	0.00		
41.06	0.00	42.10	0.00	43.14	0.00		
41.08	0.00	42.12	0.00	43.16	0.00		
41.10	0.00	42.14	0.00	43.18	0.00		
41.12	0.00	42.16	0.00	43.20	0.00		
41.14	0.00	42.18	0.00	43.22	0.00		
41.16	0.00	42.20	0.00	43.24	0.00		
41.18	0.00	42.22	0.00	43.26	0.00		
41.20	0.00	42.24	0.00	43.28	0.00		
41.22	0.00	42.26	0.00	43.30	0.00		
41.24	0.00	42.28	0.00	43.32	0.00		
41.26	0.00	42.30	0.00	43.34	0.00		
41.28	0.00	42.32	0.00	43.36	0.00		
41.30	0.00	42.34	0.00	43.38	0.00		
41.32	0.00	42.36	0.00	43.40	0.00		
41.34	0.00	42.38	0.00	43.42	0.00		
41.36	0.00	42.40	0.00	43.44	0.00		
41.38	0.00	42.42	0.00	43.46	0.00		
41.40	0.00	42.44	0.00	43.48	0.00		
41.42	0.00	42.46	0.00	43.50	0.00		
41.44	0.00	42.48	0.00	43.52	0.34		
41.46	0.00	42.50	0.00	43.54	0.95		
41.48	0.00	42.52	0.00	43.56	1.75		
41.50	0.00	42.54	0.00	43.58	2.69		
41.52	0.00	42.56	0.00	43.60	3.77		

Stage-Area-Storage for Pond SB-LS: SB-LS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
40.50	290	0	43.10	1,541	2,021
40.55	303	15	43.15	1,566	2,099
40.60	315	30	43.20	1,592	2,178
40.65	328	46	43.25	1,618	2,258
40.70	340	63	43.30	1,644	2,340
40.75	353	80	43.35	1,670	2,423
40.80	366	98	43.40	1,695	2,507
40.85	378	117	43.45	1,721	2,592
40.90	391	136	43.50	1,747	2,679
40.95	403	156	43.55	1,774	2,767
41.00	416	177	43.60	1,802	2,856
41.05	432	198	43.65	1,829	2,947
41.10	449	220	43.70	1,856	3,039
41.15	465	243	43.75	1,884	3,133
41.20	481	266	43.80	1,911	3,228
41.25	497	291	43.85	1,938	3,324
41.30	513	316	43.90	1,965	3,421
41.35	530	342	43.95	1,993	3,520
41.40	546	369	44.00	2,020	3,621
41.45	562	397			
41.50	579	425			
41.55	595	454			
41.60	611	485			
41.65	627	516			
41.70	644	547			
41.75	660	580			
41.80	676	613			
41.85	692	648			
41.90	708	683			
41.95	725	718			
42.00	741	755			
42.05	778	793			
42.10	816	833			
42.15	853	875			
42.20	891	918			
42.25	928	964			
42.30	965	1,011			
42.35	1,003	1,060			
42.40	1,040	1,111			
42.45	1,078	1,164			
42.50	1,115	1,219			
42.55	1,152	1,276			
42.60	1,190	1,334			
42.65	1,227	1,395			
42.70	1,265	1,457			
42.75	1,302	1,521			
42.80	1,339	1,587			
42.85	1,377	1,655			
42.90	1,414	1,725			
42.95	1,452	1,796			
43.00	1,489	1,870			
43.05	1,515	1,945			

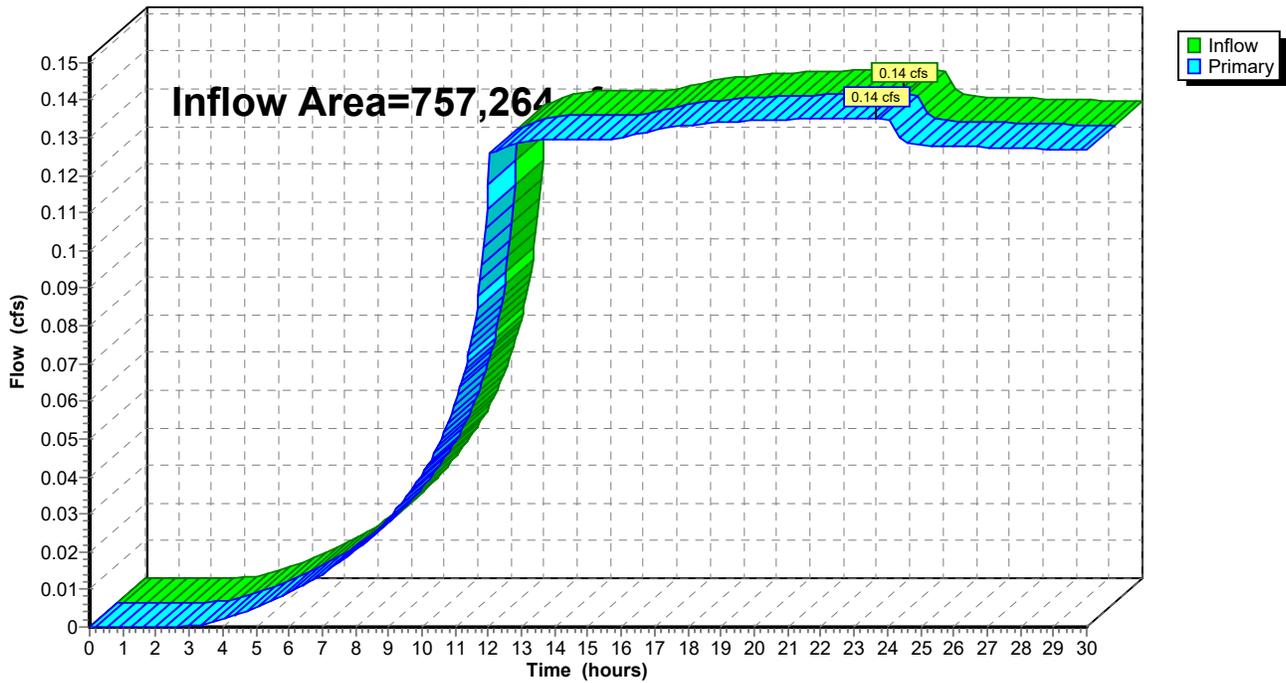
Summary for Link DP-1: Wetlands WA2 - WA12

Inflow Area = 757,264 sf, 63.15% Impervious, Inflow Depth > 0.15" for 2-yr event
Inflow = 0.14 cfs @ 23.63 hrs, Volume= 9,306 cf
Primary = 0.14 cfs @ 23.63 hrs, Volume= 9,306 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA12

Hydrograph



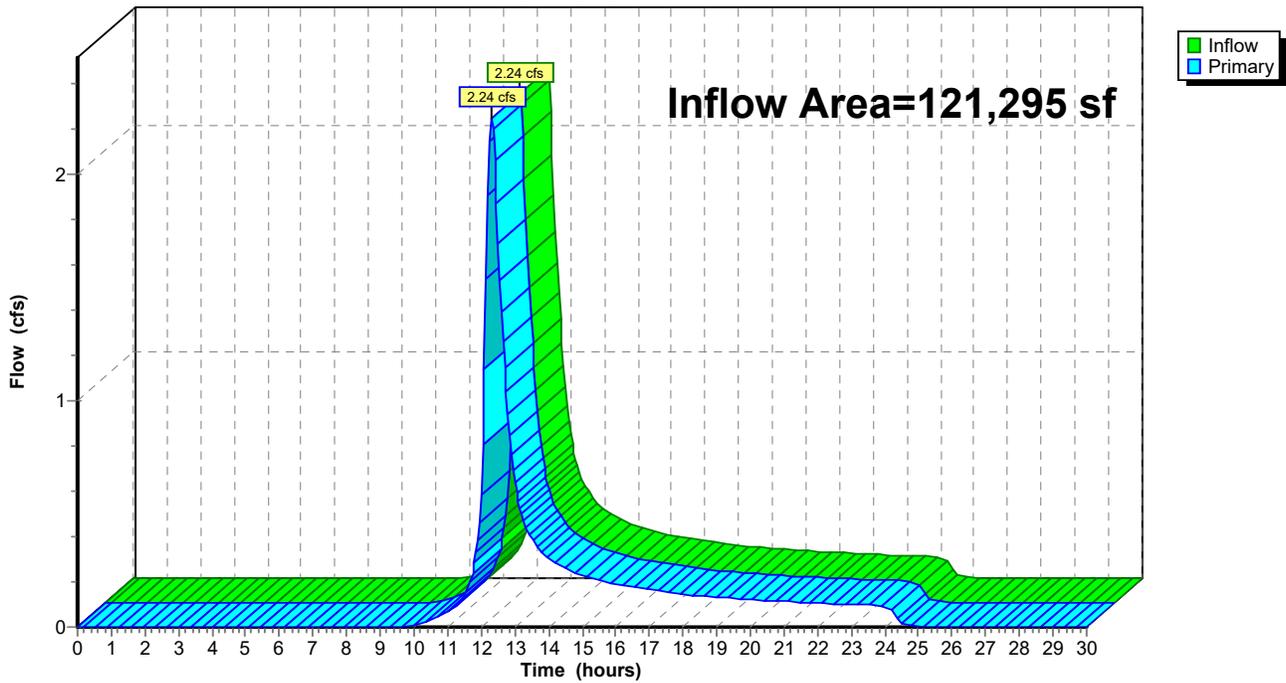
Summary for Link DP-2: Frontage Road

Inflow Area = 121,295 sf, 29.98% Impervious, Inflow Depth = 1.27" for 2-yr event
Inflow = 2.24 cfs @ 12.31 hrs, Volume= 12,802 cf
Primary = 2.24 cfs @ 12.31 hrs, Volume= 12,802 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-2: Frontage Road

Hydrograph



Summary for Subcatchment PDA-101: PDA-101

Runoff = 3.79 cfs @ 12.25 hrs, Volume= 18,965 cf, Depth= 2.32"
 Routed to Pond P-101 : SWMB P-101

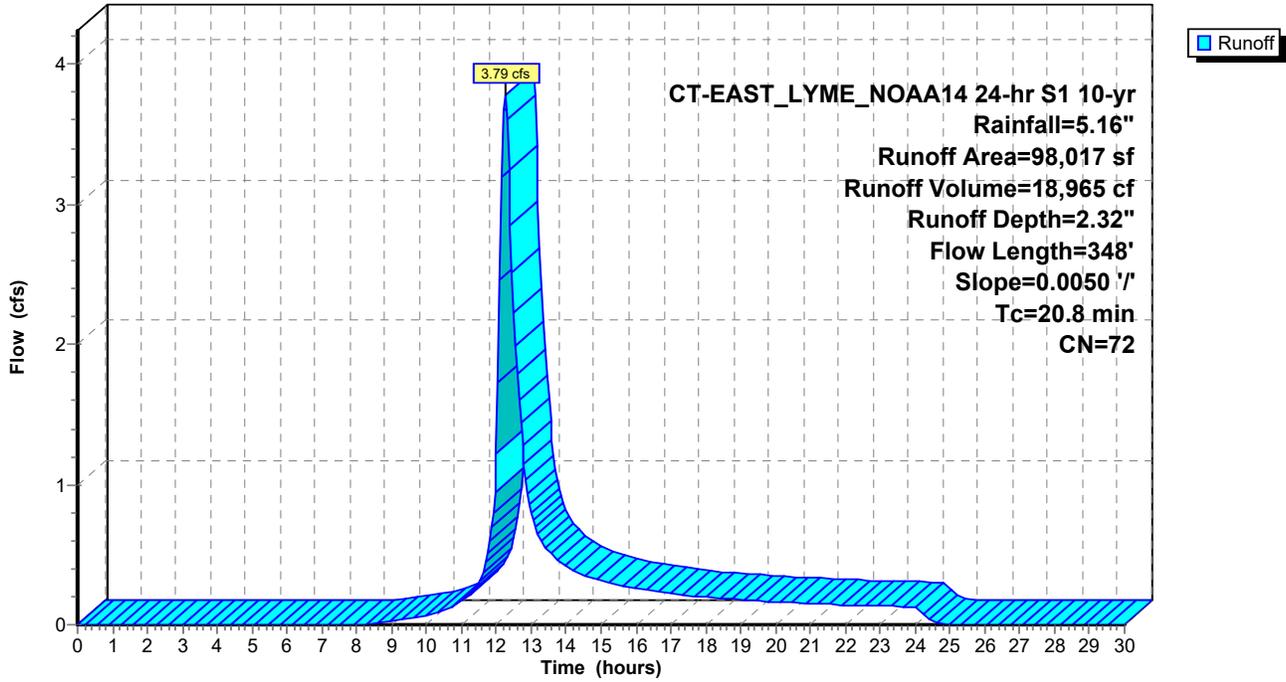
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
15,098	55	Woods, Good, HSG B
28,559	48	Brush, Good, HSG B
12,892	61	>75% Grass cover, Good, HSG B
41,468	98	Paved parking, HSG B
98,017	72	Weighted Average
56,549		57.69% Pervious Area
41,468		42.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0050	0.06		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.40"
6.4	190	0.0050	0.49		Shallow Concentrated Flow, Brush Short Grass Pasture Kv= 7.0 fps
0.6	108	0.0050	3.21	2.52	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
20.8	348	Total			

Subcatchment PDA-101: PDA-101

Hydrograph



Summary for Subcatchment PDA-102: PDA-102

Runoff = 9.95 cfs @ 12.05 hrs, Volume= 31,881 cf, Depth= 4.36"
 Routed to Pond P-102 : SWMB P-102

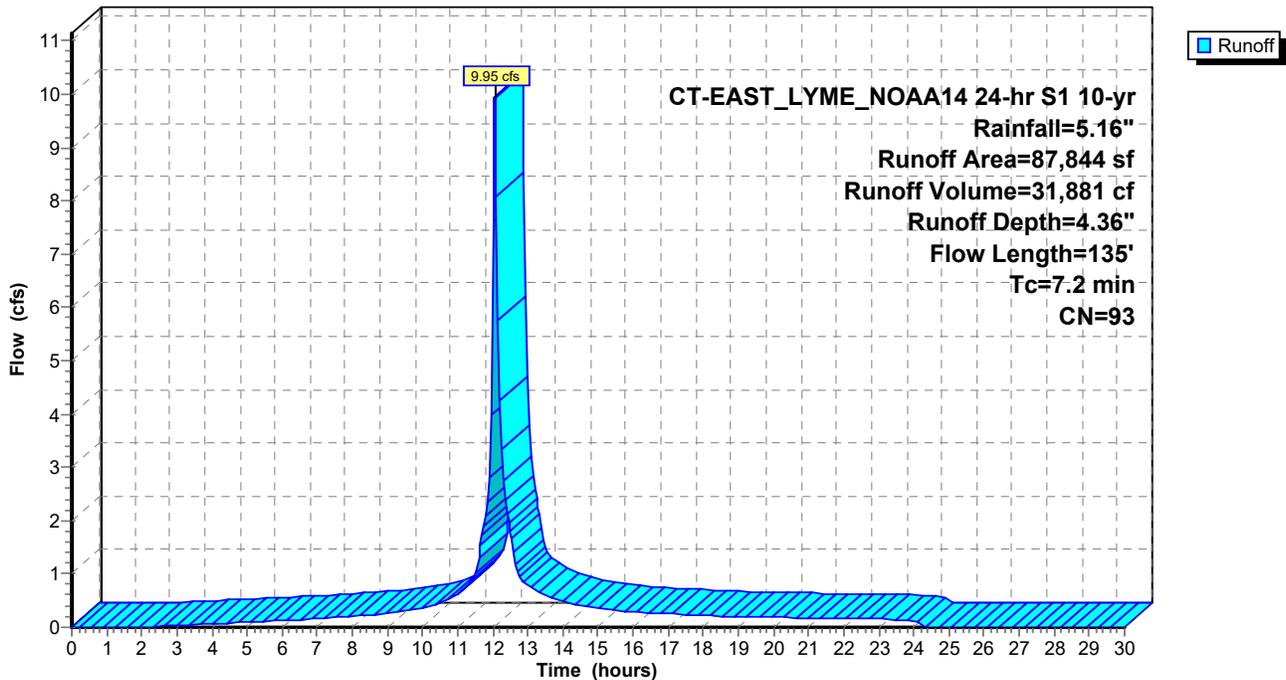
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
12,499	61	>75% Grass cover, Good, HSG B
75,345	98	Paved parking, HSG B
87,844	93	Weighted Average
12,499		14.23% Pervious Area
75,345		85.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	45	0.0100	0.11		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 3.40"
0.6	90	0.0150	2.49		Shallow Concentrated Flow, Paved Paved Kv= 20.3 fps
7.2	135	Total			

Subcatchment PDA-102: PDA-102

Hydrograph



Summary for Subcatchment PDA-103: PDA-103

Runoff = 3.06 cfs @ 12.02 hrs, Volume= 9,198 cf, Depth= 4.58"
 Routed to Pond P-103 : SWMB P-103

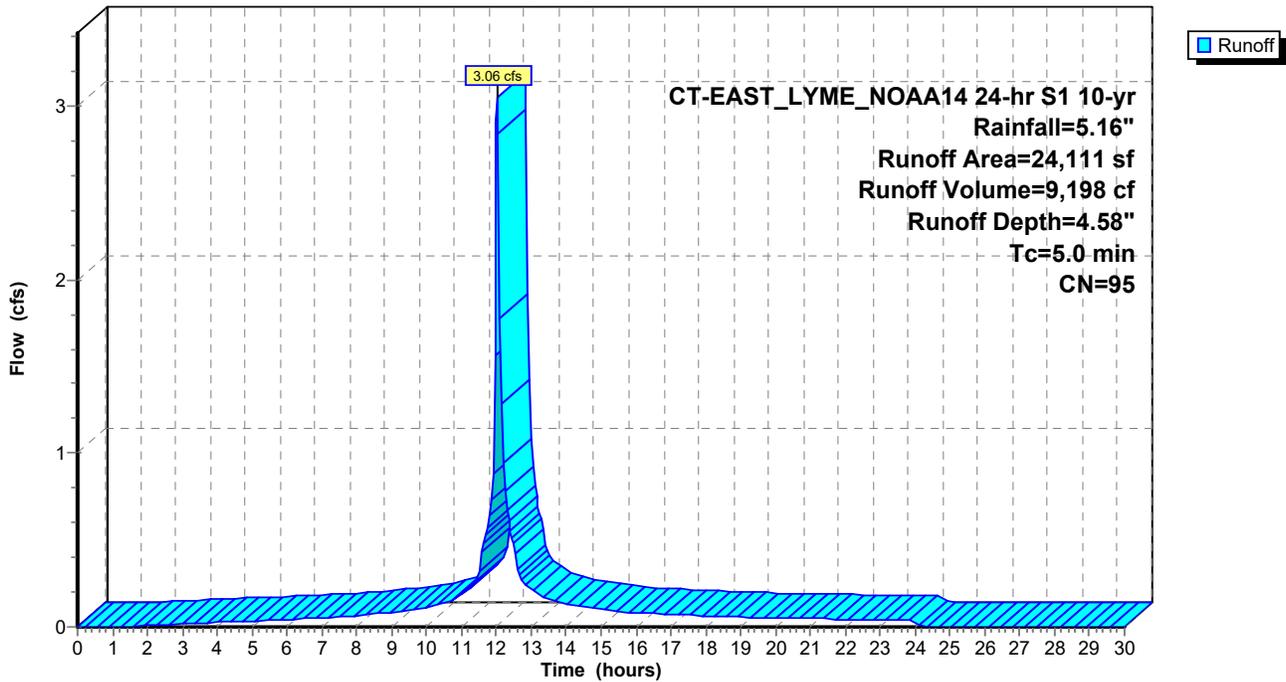
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
2,159	61	>75% Grass cover, Good, HSG B
21,952	98	Paved parking, HSG B
24,111	95	Weighted Average
2,159		8.95% Pervious Area
21,952		91.05% Impervious Area

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

Subcatchment PDA-103: PDA-103

Hydrograph



Summary for Subcatchment PDA-104: PDA-104

Runoff = 0.17 cfs @ 12.92 hrs, Volume= 2,475 cf, Depth= 0.59"
 Routed to Reach 1R : Grass Swale

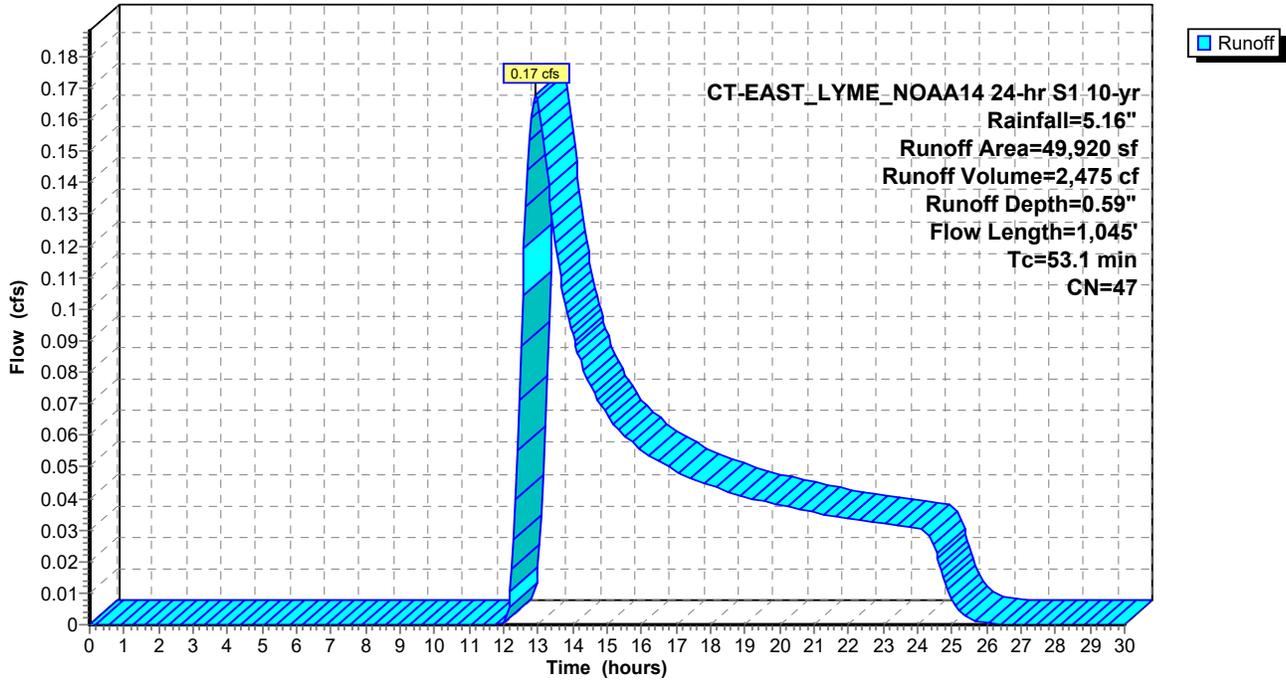
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
10,624	30	Woods, Good, HSG A
29,321	55	Woods, Good, HSG B
7,850	39	>75% Grass cover, Good, HSG A
2,125	61	>75% Grass cover, Good, HSG B
49,920	47	Weighted Average
49,920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	75	0.0050	0.04		Sheet Flow, Sheet Woods: Light underbrush n= 0.400 P2= 3.40"
9.0	190	0.0050	0.35		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
13.1	480	0.0150	0.61		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
2.2	300	0.0050	2.25	8.99	Channel Flow, Grass Swale Area= 4.0 sf Perim= 12.4' r= 0.32' n= 0.022 Earth, clean & straight
53.1	1,045	Total			

Subcatchment PDA-104: PDA-104

Hydrograph



Summary for Subcatchment PDA-105: PDA-105

Runoff = 2.21 cfs @ 12.02 hrs, Volume= 6,646 cf, Depth= 4.58"
 Routed to Pond P-104 : P-104

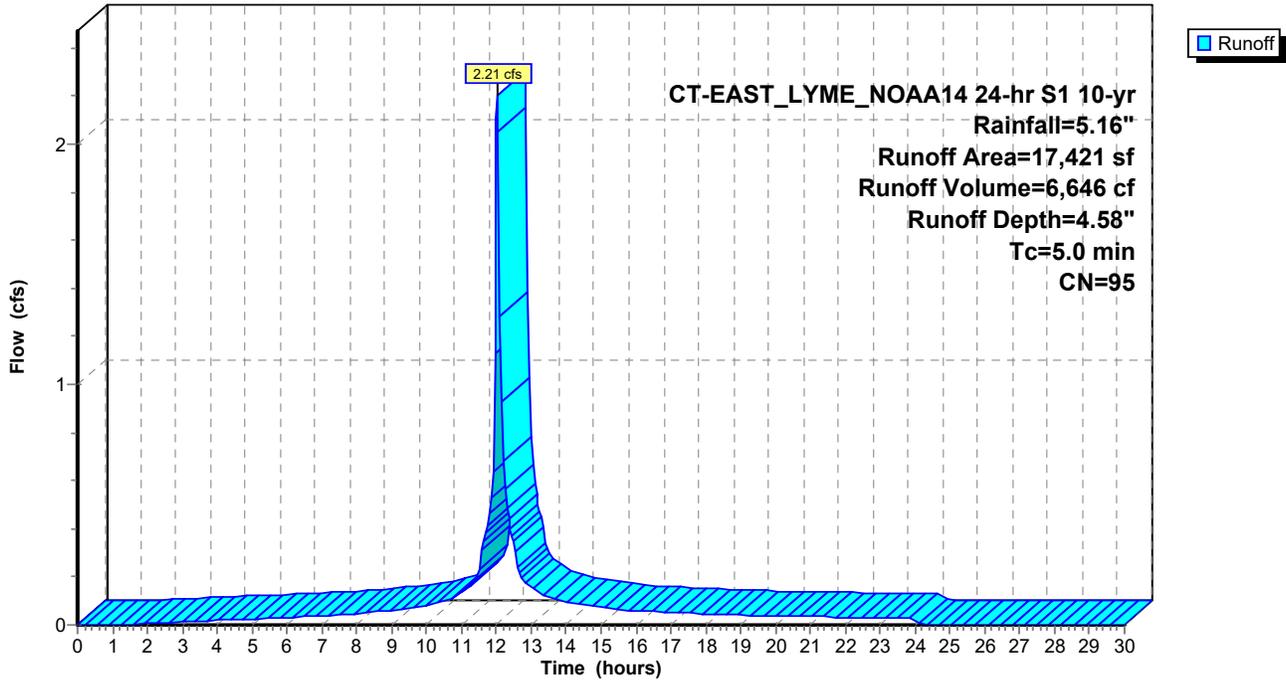
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
15,999	98	Paved parking, HSG B
1,422	61	>75% Grass cover, Good, HSG B
17,421	95	Weighted Average
1,422		8.16% Pervious Area
15,999		91.84% Impervious Area

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

Subcatchment PDA-105: PDA-105

Hydrograph



Summary for Subcatchment PDA-106: PDA-106

Runoff = 1.23 cfs @ 12.02 hrs, Volume= 3,461 cf, Depth= 3.62"
 Routed to Reach 2R : 18" HDPE

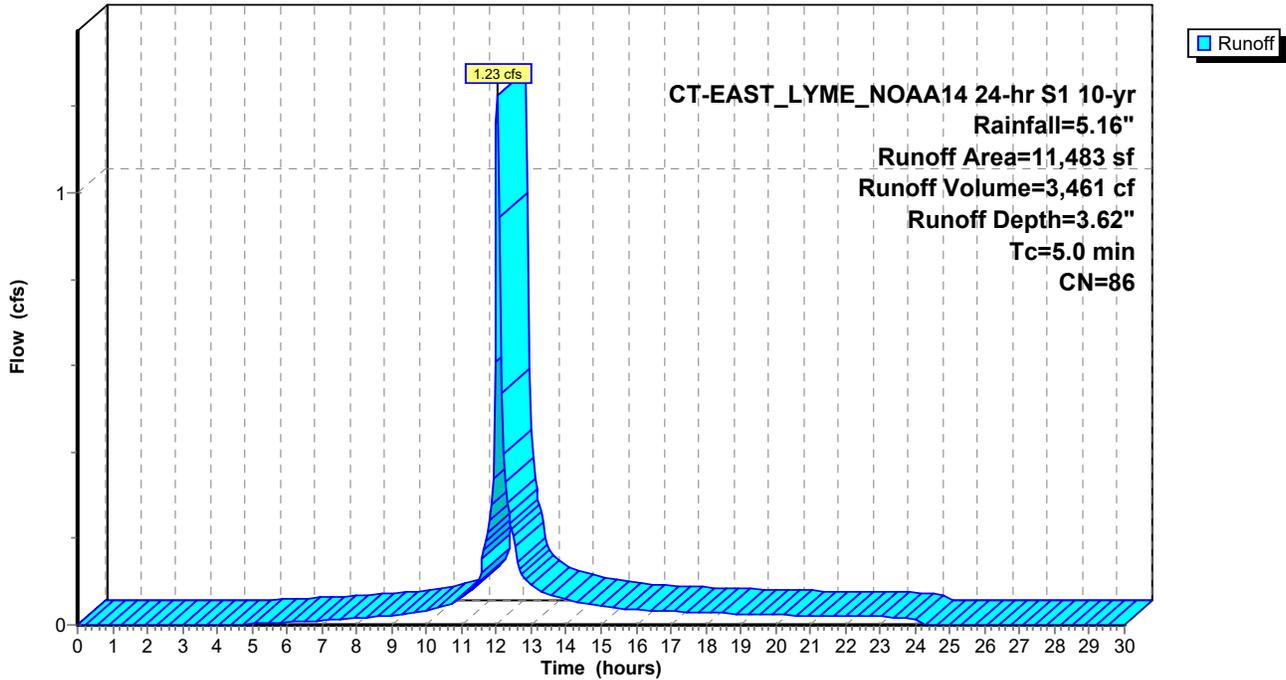
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
3,625	61	>75% Grass cover, Good, HSG B
7,858	98	Paved parking, HSG B
11,483	86	Weighted Average
3,625		31.57% Pervious Area
7,858		68.43% Impervious Area

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

Subcatchment PDA-106: PDA-106

Hydrograph



Summary for Subcatchment PDA-107: PDA-107

Runoff = 0.01 cfs @ 16.24 hrs, Volume= 528 cf, Depth= 0.13"
 Routed to Link DP-1 : Wetlands WA2 - WA12

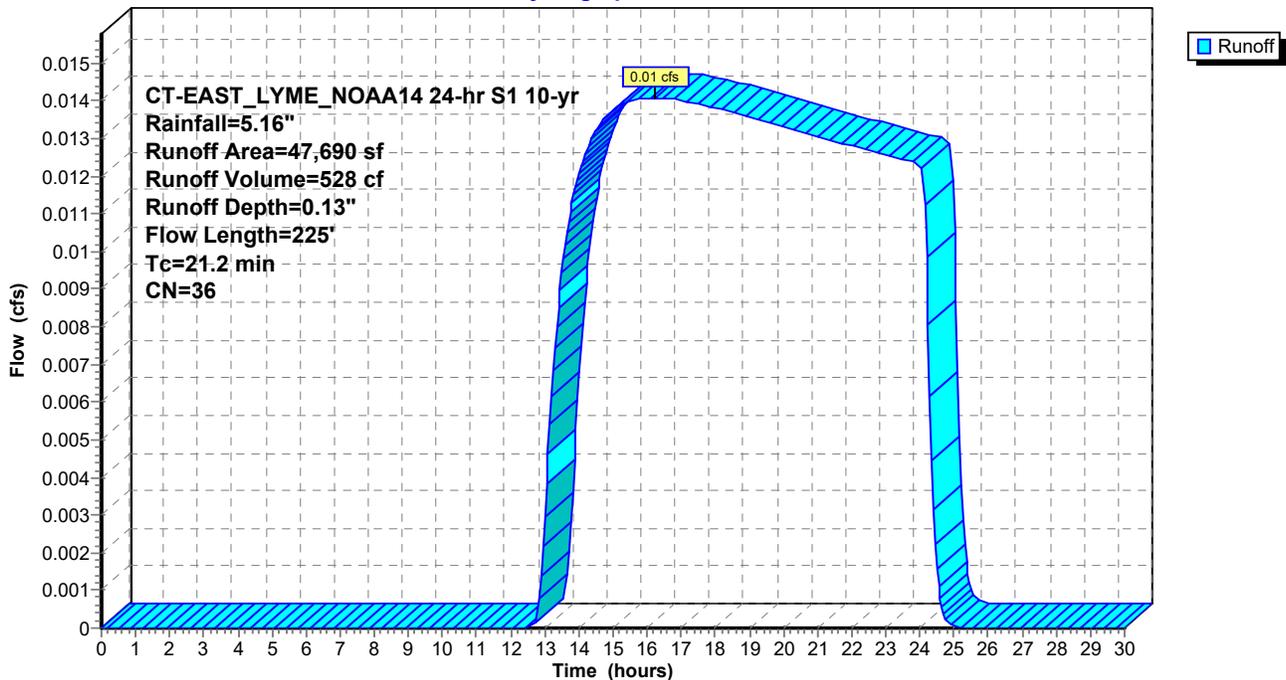
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
20,022	30	Woods, Good, HSG A
5,821	39	>75% Grass cover, Good, HSG A
2,302	61	>75% Grass cover, Good, HSG B
19,545	39	Pasture/grassland/range, Good, HSG A
47,690	36	Weighted Average
47,690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
5.1	150	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.1	15	0.1300	1.80		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
21.2	225	Total			

Subcatchment PDA-107: PDA-107

Hydrograph



Summary for Subcatchment PDA-108: PDA-108 - ROOF

Runoff = 24.01 cfs @ 12.02 hrs, Volume= 75,542 cf, Depth= 4.92"

Routed to Pond P-105 : SWMB P-105

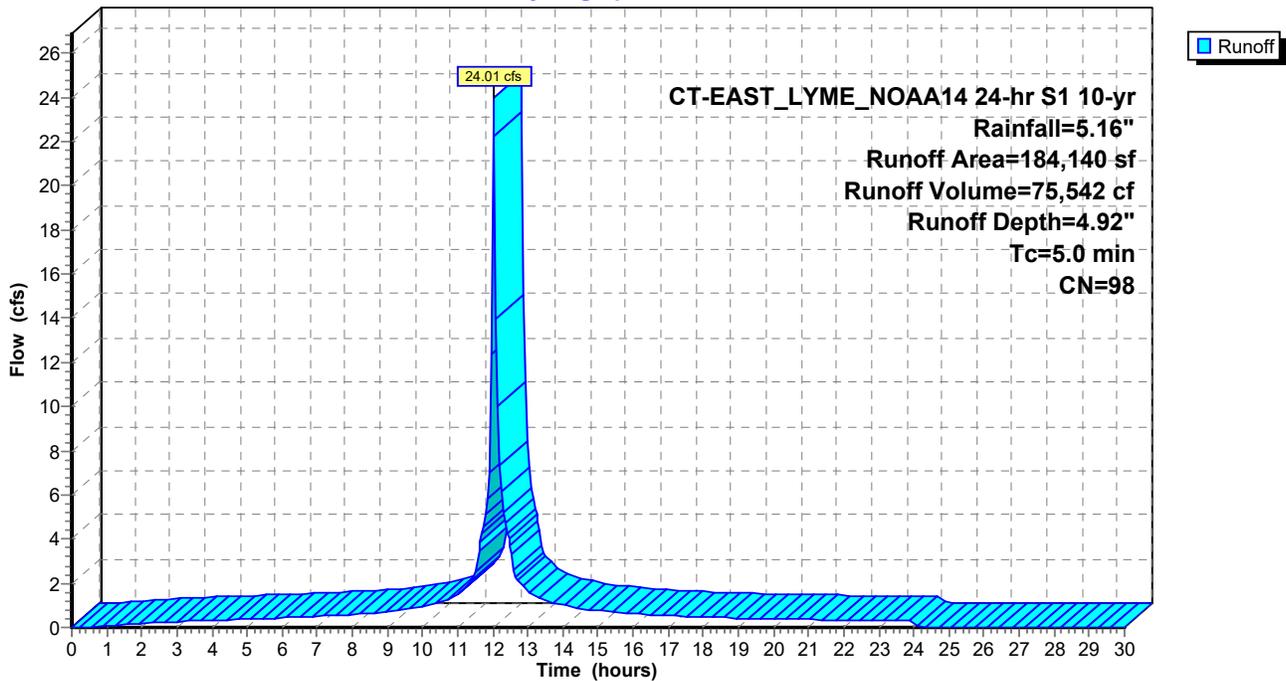
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
20,237	98	Roofs, HSG B
163,903	98	Roofs, HSG A
184,140	98	Weighted Average
184,140		100.00% Impervious Area

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

Subcatchment PDA-108: PDA-108 - ROOF

Hydrograph



Summary for Subcatchment PDA-109: PDA-109

Runoff = 6.42 cfs @ 12.03 hrs, Volume= 18,654 cf, Depth= 3.72"
 Routed to Pond P-106 : SWMB-106

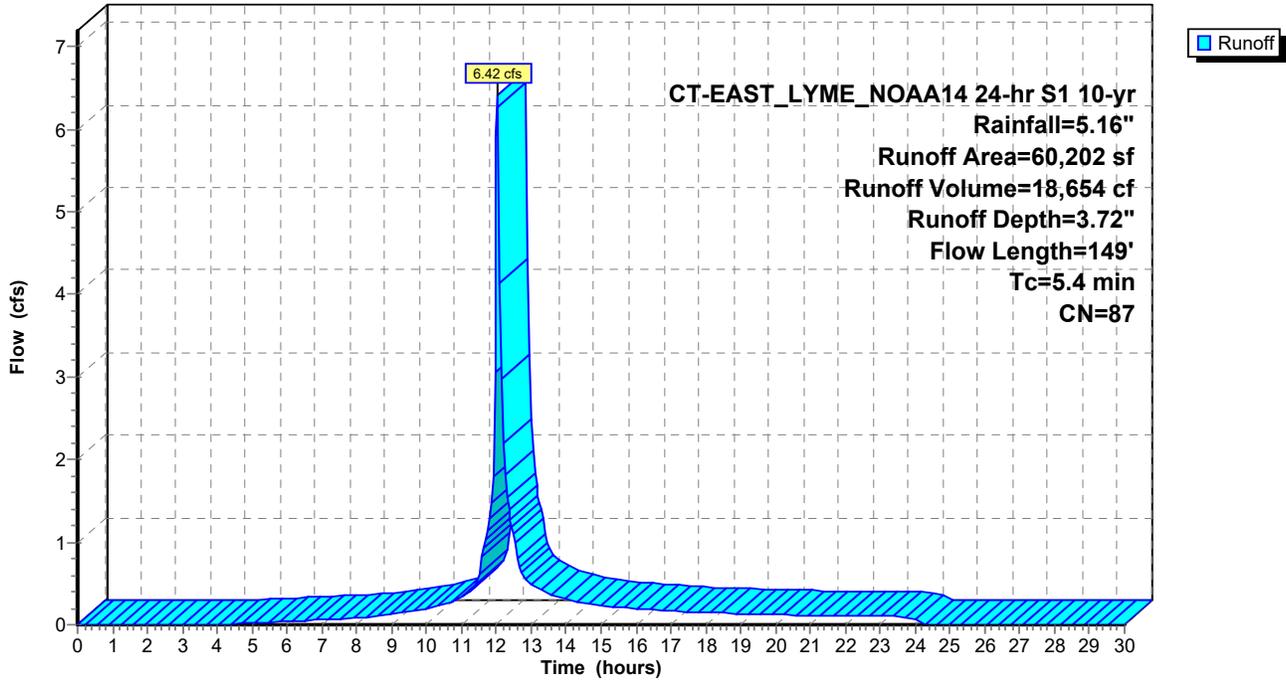
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
35,618	98	Paved parking, HSG A
11,394	98	Paved parking, HSG B
8,291	39	>75% Grass cover, Good, HSG A
4,899	61	>75% Grass cover, Good, HSG B
60,202	87	Weighted Average
13,190		21.91% Pervious Area
47,012		78.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	45	0.0200	0.15		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.1	20	0.0150	2.49		Shallow Concentrated Flow, gutter flow Paved Kv= 20.3 fps
0.3	84	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
5.4	149	Total			

Subcatchment PDA-109: PDA-109

Hydrograph



Summary for Subcatchment PDA-110: PDA-110

Runoff = 11.38 cfs @ 12.02 hrs, Volume= 33,818 cf, Depth= 4.47"
 Routed to Pond P-107 : SWMB P-107

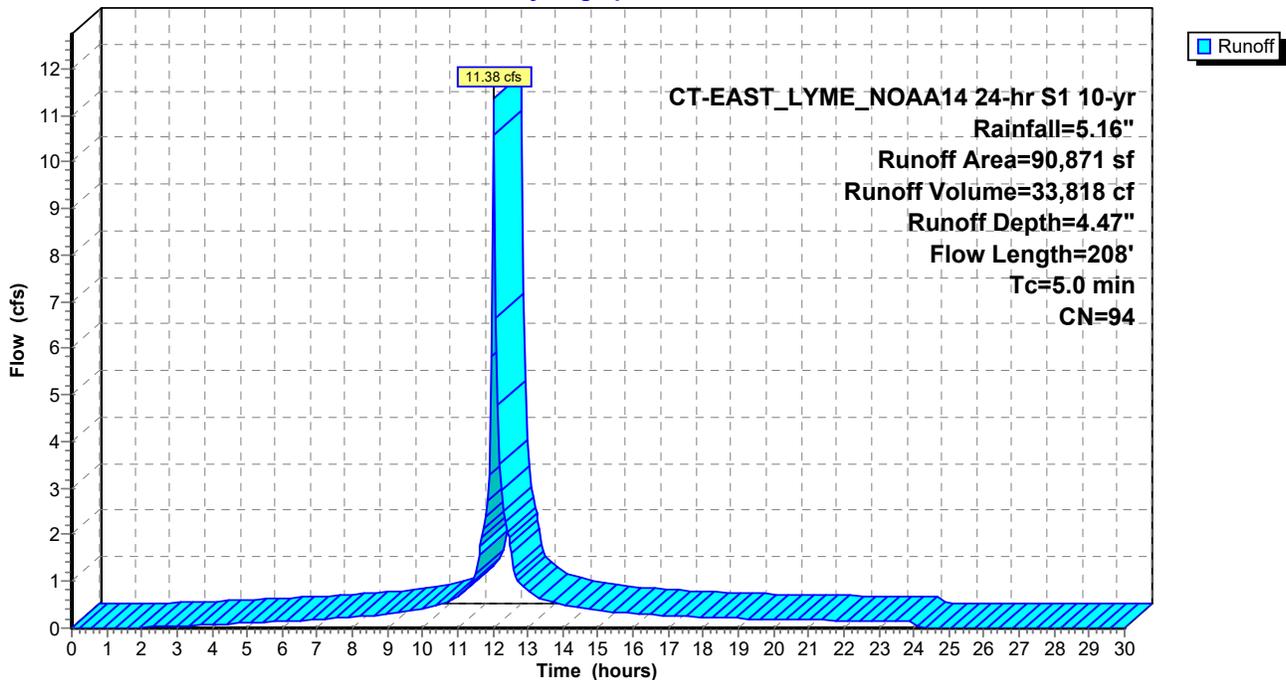
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
84,435	98	Paved parking, HSG A
6,436	39	>75% Grass cover, Good, HSG A
90,871	94	Weighted Average
6,436		7.08% Pervious Area
84,435		92.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	20	0.0200	0.13		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.5	70	0.0150	2.49		Shallow Concentrated Flow, Gutter Flow Paved Kv= 20.3 fps
0.4	118	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
3.5	208	Total, Increased to minimum Tc = 5.0 min			

Subcatchment PDA-110: PDA-110

Hydrograph



Summary for Subcatchment PDA-111: PDA-111

Runoff = 0.11 cfs @ 12.65 hrs, Volume= 2,227 cf, Depth= 0.31"
 Routed to Link DP-1 : Wetlands WA2 - WA12

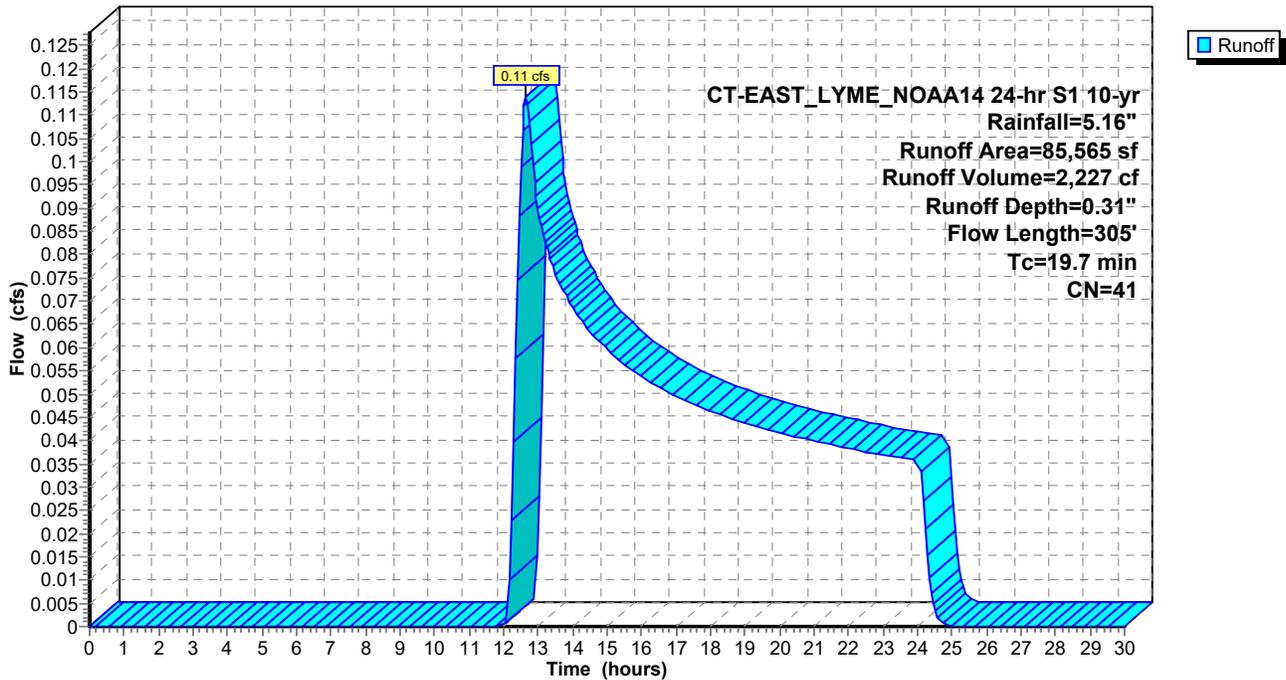
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
36,238	30	Woods, Good, HSG A
27,610	39	>75% Grass cover, Good, HSG A
3,052	55	Woods, Good, HSG B
18,665	61	Pasture/grassland/range, Good, HSG B
85,565	41	Weighted Average
85,565		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		Sheet Flow, Wooded
					Woods: Light underbrush n= 0.400 P2= 3.40"
3.9	255	0.0470	1.08		Shallow Concentrated Flow, Wooded
					Woodland Kv= 5.0 fps
19.7	305	Total			

Subcatchment PDA-111: PDA-111

Hydrograph



Summary for Subcatchment PDA-200: PDA-200

Runoff = 4.77 cfs @ 12.30 hrs, Volume= 26,075 cf, Depth= 2.58"

Routed to Link DP-2 : Frontage Road

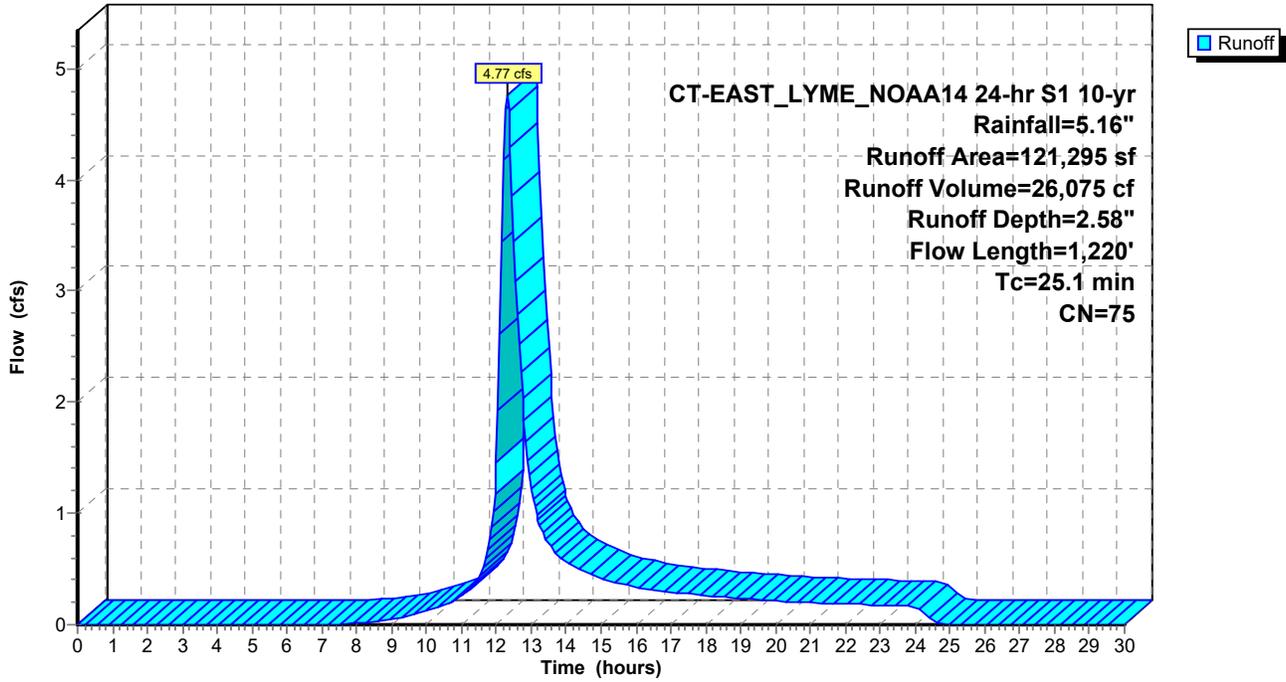
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 10-yr Rainfall=5.16"

Area (sf)	CN	Description
23,430	61	Pasture/grassland/range, Good, HSG B
52,449	61	>75% Grass cover, Good, HSG B
35,803	98	Paved parking, HSG B
567	98	Paved parking, HSG A
8,668	96	Gravel surface, HSG B
378	39	>75% Grass cover, Good, HSG A
121,295	75	Weighted Average
84,925		70.02% Pervious Area
36,370		29.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
3.2	60	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.9	160	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
2.9	930	0.0100	5.26	6.46	Pipe Channel, Piping 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
25.1	1,220	Total			

Subcatchment PDA-200: PDA-200

Hydrograph



Summary for Reach 1R: Grass Swale

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 0.59" for 10-yr event
 Inflow = 0.17 cfs @ 12.92 hrs, Volume= 2,475 cf
 Outflow = 0.17 cfs @ 13.06 hrs, Volume= 2,475 cf, Atten= 1%, Lag= 8.6 min
 Routed to Pond SB-LS : SB-LS

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.08 fps, Min. Travel Time= 4.8 min
 Avg. Velocity = 0.64 fps, Avg. Travel Time= 8.0 min

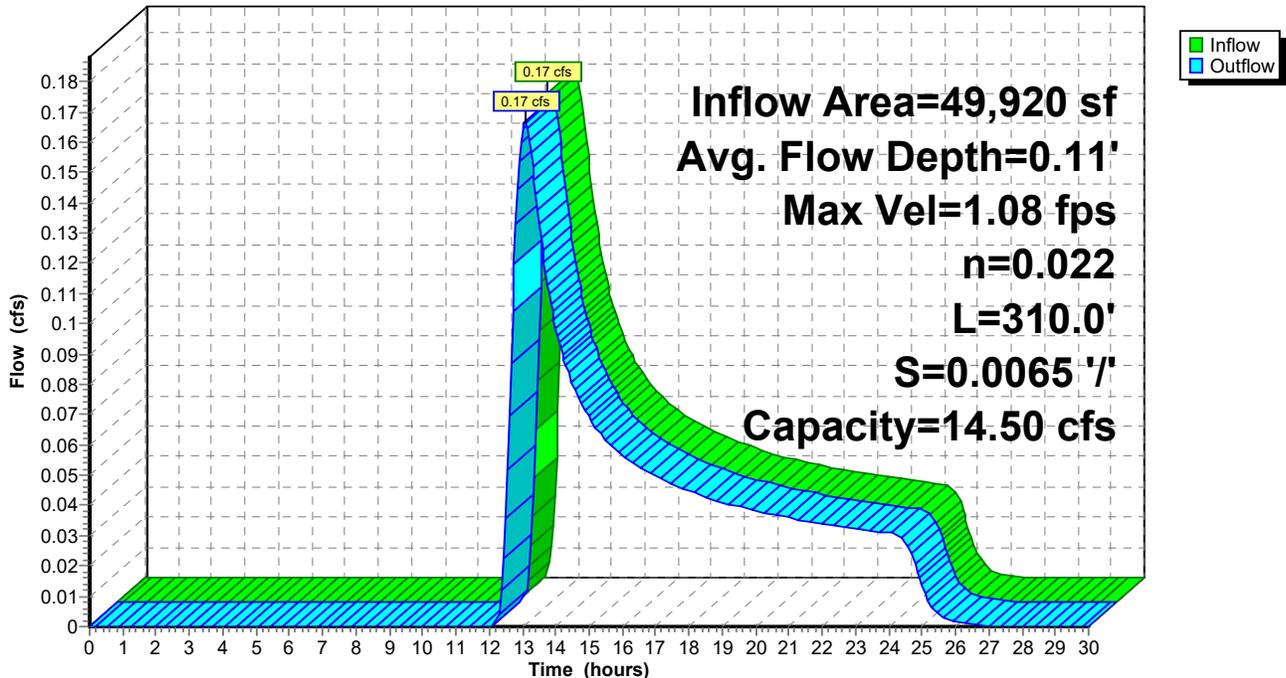
Peak Storage= 48 cf @ 12.98 hrs
 Average Depth at Peak Storage= 0.11' , Surface Width= 1.69'
 Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 14.50 cfs

1.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight
 Side Slope Z-value= 3.0 ' / ' Top Width= 7.00'
 Length= 310.0' Slope= 0.0065 ' / '
 Inlet Invert= 47.00', Outlet Invert= 45.00'



Reach 1R: Grass Swale

Hydrograph



Stage-Discharge for Reach 1R: Grass Swale

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
47.00	0.00	0.00	47.52	2.49	3.31
47.01	0.25	0.00	47.53	2.51	3.45
47.02	0.38	0.01	47.54	2.54	3.59
47.03	0.49	0.02	47.55	2.57	3.74
47.04	0.59	0.03	47.56	2.59	3.89
47.05	0.67	0.04	47.57	2.62	4.05
47.06	0.75	0.05	47.58	2.65	4.20
47.07	0.82	0.07	47.59	2.67	4.37
47.08	0.88	0.09	47.60	2.70	4.53
47.09	0.95	0.11	47.61	2.72	4.70
47.10	1.00	0.13	47.62	2.75	4.87
47.11	1.06	0.15	47.63	2.77	5.05
47.12	1.11	0.18	47.64	2.80	5.23
47.13	1.16	0.21	47.65	2.82	5.41
47.14	1.21	0.24	47.66	2.85	5.60
47.15	1.26	0.27	47.67	2.87	5.79
47.16	1.30	0.31	47.68	2.90	5.99
47.17	1.35	0.35	47.69	2.92	6.19
47.18	1.39	0.39	47.70	2.94	6.39
47.19	1.43	0.43	47.71	2.97	6.60
47.20	1.47	0.47	47.72	2.99	6.81
47.21	1.51	0.52	47.73	3.02	7.02
47.22	1.55	0.57	47.74	3.04	7.24
47.23	1.59	0.62	47.75	3.06	7.47
47.24	1.63	0.67	47.76	3.09	7.70
47.25	1.66	0.73	47.77	3.11	7.93
47.26	1.70	0.79	47.78	3.13	8.17
47.27	1.73	0.85	47.79	3.16	8.41
47.28	1.77	0.91	47.80	3.18	8.65
47.29	1.80	0.98	47.81	3.20	8.90
47.30	1.84	1.05	47.82	3.23	9.15
47.31	1.87	1.12	47.83	3.25	9.41
47.32	1.90	1.19	47.84	3.27	9.68
47.33	1.93	1.27	47.85	3.29	9.94
47.34	1.97	1.35	47.86	3.32	10.21
47.35	2.00	1.43	47.87	3.34	10.49
47.36	2.03	1.52	47.88	3.36	10.77
47.37	2.06	1.61	47.89	3.38	11.06
47.38	2.09	1.70	47.90	3.41	11.34
47.39	2.12	1.79	47.91	3.43	11.64
47.40	2.15	1.89	47.92	3.45	11.94
47.41	2.18	1.99	47.93	3.47	12.24
47.42	2.21	2.10	47.94	3.49	12.55
47.43	2.24	2.20	47.95	3.52	12.86
47.44	2.27	2.31	47.96	3.54	13.18
47.45	2.29	2.43	47.97	3.56	13.50
47.46	2.32	2.54	47.98	3.58	13.83
47.47	2.35	2.66	47.99	3.60	14.16
47.48	2.38	2.79	48.00	3.62	14.50
47.49	2.41	2.91			
47.50	2.43	3.04			
47.51	2.46	3.17			

Stage-Area-Storage for Reach 1R: Grass Swale

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
47.00	0.0	0	47.52	1.3	413
47.01	0.0	3	47.53	1.4	426
47.02	0.0	7	47.54	1.4	439
47.03	0.0	10	47.55	1.5	452
47.04	0.0	14	47.56	1.5	465
47.05	0.1	18	47.57	1.5	479
47.06	0.1	22	47.58	1.6	493
47.07	0.1	26	47.59	1.6	507
47.08	0.1	31	47.60	1.7	521
47.09	0.1	35	47.61	1.7	535
47.10	0.1	40	47.62	1.8	550
47.11	0.1	45	47.63	1.8	564
47.12	0.2	51	47.64	1.9	579
47.13	0.2	56	47.65	1.9	594
47.14	0.2	62	47.66	2.0	610
47.15	0.2	67	47.67	2.0	625
47.16	0.2	73	47.68	2.1	641
47.17	0.3	80	47.69	2.1	657
47.18	0.3	86	47.70	2.2	673
47.19	0.3	92	47.71	2.2	689
47.20	0.3	99	47.72	2.3	705
47.21	0.3	106	47.73	2.3	722
47.22	0.4	113	47.74	2.4	739
47.23	0.4	120	47.75	2.4	756
47.24	0.4	128	47.76	2.5	773
47.25	0.4	136	47.77	2.5	790
47.26	0.5	143	47.78	2.6	808
47.27	0.5	151	47.79	2.7	825
47.28	0.5	160	47.80	2.7	843
47.29	0.5	168	47.81	2.8	861
47.30	0.6	177	47.82	2.8	880
47.31	0.6	185	47.83	2.9	898
47.32	0.6	194	47.84	3.0	917
47.33	0.7	204	47.85	3.0	935
47.34	0.7	213	47.86	3.1	954
47.35	0.7	222	47.87	3.1	974
47.36	0.7	232	47.88	3.2	993
47.37	0.8	242	47.89	3.3	1,013
47.38	0.8	252	47.90	3.3	1,032
47.39	0.8	262	47.91	3.4	1,052
47.40	0.9	273	47.92	3.5	1,072
47.41	0.9	283	47.93	3.5	1,093
47.42	0.9	294	47.94	3.6	1,113
47.43	1.0	305	47.95	3.7	1,134
47.44	1.0	316	47.96	3.7	1,155
47.45	1.1	328	47.97	3.8	1,176
47.46	1.1	339	47.98	3.9	1,197
47.47	1.1	351	47.99	3.9	1,218
47.48	1.2	363	48.00	4.0	1,240
47.49	1.2	375			
47.50	1.3	388			
47.51	1.3	400			

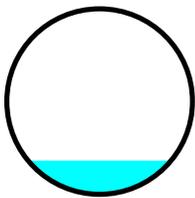
Summary for Reach 2R: 18" HDPE

Inflow Area = 219,734 sf, 97.37% Impervious, Inflow Depth = 0.69" for 10-yr event
 Inflow = 2.27 cfs @ 12.06 hrs, Volume= 12,662 cf
 Outflow = 2.10 cfs @ 12.16 hrs, Volume= 12,662 cf, Atten= 7%, Lag= 6.1 min
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.44 fps, Min. Travel Time= 3.0 min
 Avg. Velocity = 1.32 fps, Avg. Travel Time= 7.9 min

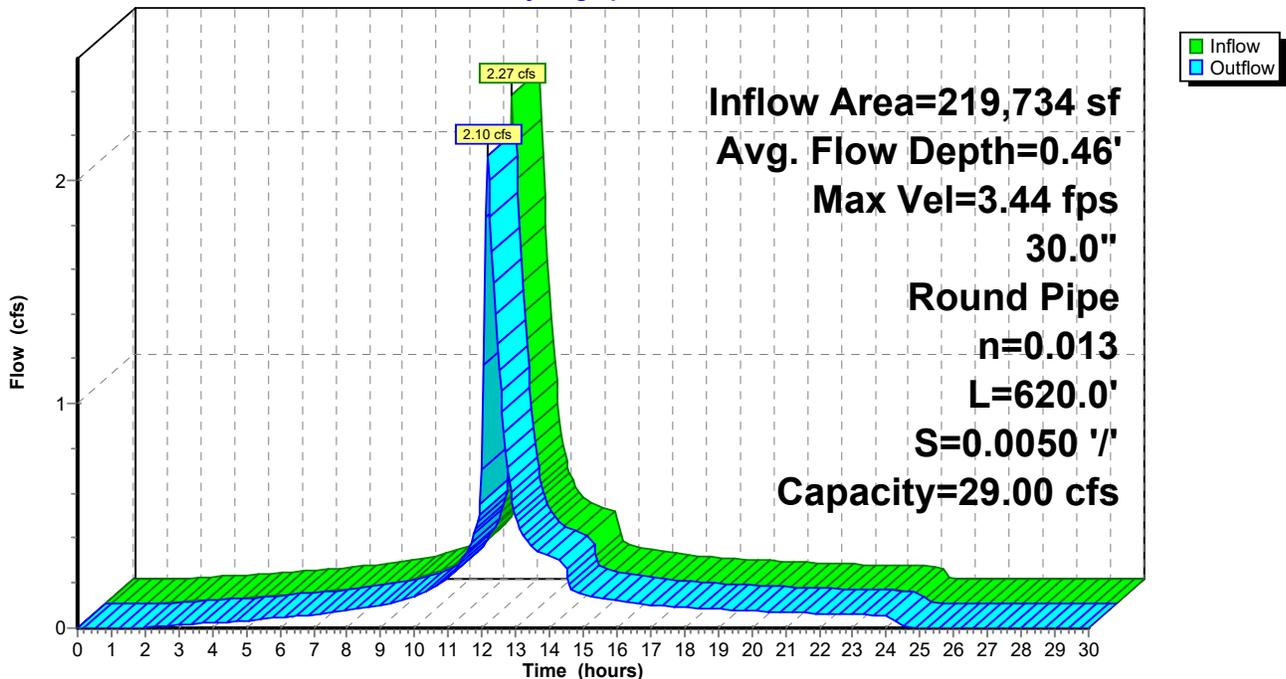
Peak Storage= 380 cf @ 12.11 hrs
 Average Depth at Peak Storage= 0.46' , Surface Width= 1.93'
 Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.00 cfs

30.0" Round Pipe
 n= 0.013
 Length= 620.0' Slope= 0.0050 '/'
 Inlet Invert= 48.10', Outlet Invert= 45.00'



Reach 2R: 18" HDPE

Hydrograph



Stage-Discharge for Reach 2R: 18" HDPE

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
48.10	0.00	0.00	49.14	5.43	10.50	50.18	6.73	29.38
48.12	0.42	0.00	49.16	5.48	10.86	50.20	6.73	29.61
48.14	0.71	0.01	49.18	5.53	11.24	50.22	6.72	29.83
48.16	0.93	0.03	49.20	5.58	11.61	50.24	6.71	30.04
48.18	1.13	0.05	49.22	5.63	11.99	50.26	6.71	30.23
48.20	1.31	0.09	49.24	5.67	12.37	50.28	6.70	30.41
48.22	1.48	0.13	49.26	5.72	12.75	50.30	6.68	30.58
48.24	1.63	0.18	49.28	5.76	13.14	50.32	6.67	30.72
48.26	1.78	0.24	49.30	5.81	13.52	50.34	6.65	30.85
48.28	1.92	0.30	49.32	5.85	13.91	50.36	6.63	30.96
48.30	2.06	0.38	49.34	5.89	14.31	50.38	6.61	31.06
48.32	2.18	0.46	49.36	5.93	14.70	50.40	6.59	31.13
48.34	2.31	0.56	49.38	5.97	15.09	50.42	6.56	31.17
48.36	2.43	0.66	49.40	6.01	15.49	50.44	6.53	31.19
48.38	2.55	0.77	49.42	6.04	15.89	50.46	6.50	31.18
48.40	2.66	0.89	49.44	6.08	16.29	50.48	6.46	31.15
48.42	2.77	1.02	49.46	6.11	16.69	50.50	6.42	31.07
48.44	2.87	1.15	49.48	6.15	17.09	50.52	6.37	30.94
48.46	2.98	1.30	49.50	6.18	17.49	50.54	6.31	30.75
48.48	3.08	1.45	49.52	6.22	17.89	50.56	6.23	30.48
48.50	3.18	1.61	49.54	6.25	18.29	50.58	6.12	29.98
48.52	3.27	1.78	49.56	6.28	18.69	50.60	5.91	29.00
48.54	3.37	1.96	49.58	6.31	19.09			
48.56	3.46	2.15	49.60	6.34	19.49			
48.58	3.55	2.34	49.62	6.36	19.88			
48.60	3.63	2.54	49.64	6.39	20.28			
48.62	3.72	2.75	49.66	6.42	20.67			
48.64	3.80	2.97	49.68	6.44	21.06			
48.66	3.88	3.19	49.70	6.47	21.45			
48.68	3.97	3.42	49.72	6.49	21.84			
48.70	4.04	3.66	49.74	6.51	22.23			
48.72	4.12	3.91	49.76	6.53	22.61			
48.74	4.20	4.17	49.78	6.55	22.99			
48.76	4.27	4.43	49.80	6.57	23.36			
48.78	4.34	4.69	49.82	6.59	23.73			
48.80	4.41	4.97	49.84	6.61	24.10			
48.82	4.48	5.25	49.86	6.62	24.46			
48.84	4.55	5.54	49.88	6.64	24.82			
48.86	4.62	5.83	49.90	6.65	25.17			
48.88	4.68	6.13	49.92	6.67	25.52			
48.90	4.75	6.43	49.94	6.68	25.86			
48.92	4.81	6.74	49.96	6.69	26.20			
48.94	4.87	7.06	49.98	6.70	26.53			
48.96	4.94	7.38	50.00	6.71	26.85			
48.98	5.00	7.71	50.02	6.72	27.17			
49.00	5.05	8.04	50.04	6.72	27.47			
49.02	5.11	8.38	50.06	6.73	27.77			
49.04	5.17	8.72	50.08	6.73	28.07			
49.06	5.22	9.07	50.10	6.73	28.35			
49.08	5.28	9.42	50.12	6.74	28.62			
49.10	5.33	9.77	50.14	6.74	28.89			
49.12	5.38	10.13	50.16	6.73	29.14			

Stage-Area-Storage for Reach 2R: 18" HDPE

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
48.10	0.0	0
48.15	0.0	15
48.20	0.1	41
48.25	0.1	75
48.30	0.2	114
48.35	0.3	158
48.40	0.3	207
48.45	0.4	259
48.50	0.5	314
48.55	0.6	373
48.60	0.7	433
48.65	0.8	496
48.70	0.9	562
48.75	1.0	629
48.80	1.1	698
48.85	1.2	768
48.90	1.4	840
48.95	1.5	912
49.00	1.6	986
49.05	1.7	1,061
49.10	1.8	1,137
49.15	2.0	1,213
49.20	2.1	1,290
49.25	2.2	1,367
49.30	2.3	1,444
49.35	2.5	1,522
49.40	2.6	1,599
49.45	2.7	1,677
49.50	2.8	1,754
49.55	3.0	1,830
49.60	3.1	1,907
49.65	3.2	1,982
49.70	3.3	2,057
49.75	3.4	2,131
49.80	3.6	2,204
49.85	3.7	2,276
49.90	3.8	2,346
49.95	3.9	2,415
50.00	4.0	2,482
50.05	4.1	2,547
50.10	4.2	2,610
50.15	4.3	2,671
50.20	4.4	2,729
50.25	4.5	2,784
50.30	4.6	2,837
50.35	4.7	2,885
50.40	4.7	2,929
50.45	4.8	2,969
50.50	4.8	3,003
50.55	4.9	3,029
50.60	4.9	3,043

Summary for Pond 3R: OCS-102 to MH-101

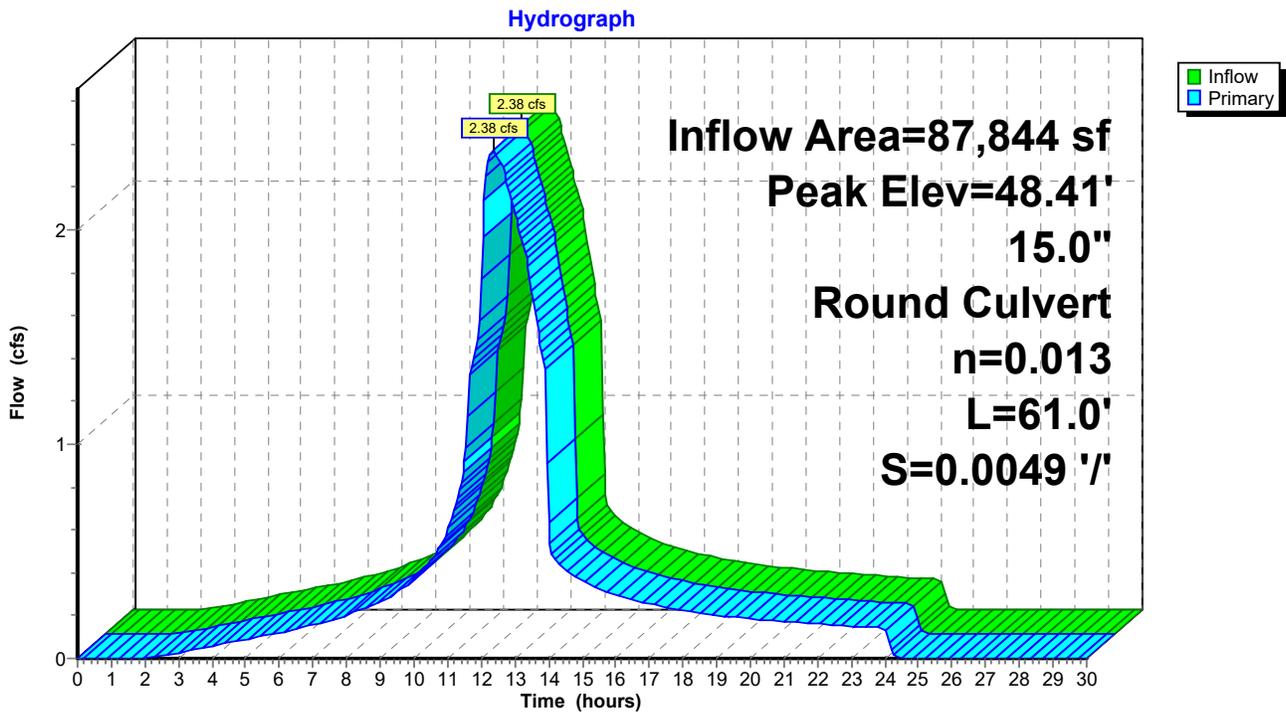
Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 4.36" for 10-yr event
 Inflow = 2.38 cfs @ 12.36 hrs, Volume= 31,881 cf
 Outflow = 2.38 cfs @ 12.36 hrs, Volume= 31,881 cf, Atten= 0%, Lag= 0.0 min
 Primary = 2.38 cfs @ 12.36 hrs, Volume= 31,881 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.41' @ 12.36 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	47.50'	15.0" Round Culvert L= 61.0' Ke= 0.500 Inlet / Outlet Invert= 47.50' / 47.20' S= 0.0049 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.38 cfs @ 12.36 hrs HW=48.41' (Free Discharge)
 ↑1=Culvert (Barrel Controls 2.38 cfs @ 3.47 fps)

Pond 3R: OCS-102 to MH-101



Stage-Discharge for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.50	0.00	48.02	0.89	48.54	2.94
47.51	0.00	48.03	0.92	48.55	2.98
47.52	0.00	48.04	0.95	48.56	3.03
47.53	0.00	48.05	0.98	48.57	3.07
47.54	0.00	48.06	1.02	48.58	3.11
47.55	0.01	48.07	1.05	48.59	3.16
47.56	0.01	48.08	1.08	48.60	3.20
47.57	0.01	48.09	1.12	48.61	3.25
47.58	0.02	48.10	1.15	48.62	3.29
47.59	0.03	48.11	1.19	48.63	3.33
47.60	0.03	48.12	1.22	48.64	3.37
47.61	0.04	48.13	1.26	48.65	3.42
47.62	0.05	48.14	1.30	48.66	3.46
47.63	0.06	48.15	1.33	48.67	3.50
47.64	0.06	48.16	1.37	48.68	3.55
47.65	0.07	48.17	1.41	48.69	3.59
47.66	0.09	48.18	1.44	48.70	3.63
47.67	0.10	48.19	1.48	48.71	3.67
47.68	0.11	48.20	1.52	48.72	3.72
47.69	0.12	48.21	1.56	48.73	3.76
47.70	0.14	48.22	1.60	48.74	3.80
47.71	0.15	48.23	1.64	48.75	3.84
47.72	0.16	48.24	1.68		
47.73	0.18	48.25	1.72		
47.74	0.20	48.26	1.75		
47.75	0.21	48.27	1.79		
47.76	0.23	48.28	1.84		
47.77	0.25	48.29	1.88		
47.78	0.27	48.30	1.92		
47.79	0.29	48.31	1.96		
47.80	0.31	48.32	2.00		
47.81	0.33	48.33	2.04		
47.82	0.35	48.34	2.08		
47.83	0.37	48.35	2.12		
47.84	0.39	48.36	2.16		
47.85	0.42	48.37	2.21		
47.86	0.44	48.38	2.25		
47.87	0.46	48.39	2.29		
47.88	0.49	48.40	2.33		
47.89	0.51	48.41	2.38		
47.90	0.54	48.42	2.42		
47.91	0.57	48.43	2.46		
47.92	0.59	48.44	2.51		
47.93	0.62	48.45	2.55		
47.94	0.65	48.46	2.59		
47.95	0.68	48.47	2.64		
47.96	0.70	48.48	2.68		
47.97	0.73	48.49	2.72		
47.98	0.76	48.50	2.77		
47.99	0.79	48.51	2.81		
48.00	0.82	48.52	2.85		
48.01	0.86	48.53	2.90		

Stage-Area-Storage for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0	48.71	0
47.68	0	48.20	0	48.72	0
47.69	0	48.21	0	48.73	0
47.70	0	48.22	0	48.74	0
47.71	0	48.23	0	48.75	0
47.72	0	48.24	0		
47.73	0	48.25	0		
47.74	0	48.26	0		
47.75	0	48.27	0		
47.76	0	48.28	0		
47.77	0	48.29	0		
47.78	0	48.30	0		
47.79	0	48.31	0		
47.80	0	48.32	0		
47.81	0	48.33	0		
47.82	0	48.34	0		
47.83	0	48.35	0		
47.84	0	48.36	0		
47.85	0	48.37	0		
47.86	0	48.38	0		
47.87	0	48.39	0		
47.88	0	48.40	0		
47.89	0	48.41	0		
47.90	0	48.42	0		
47.91	0	48.43	0		
47.92	0	48.44	0		
47.93	0	48.45	0		
47.94	0	48.46	0		
47.95	0	48.47	0		
47.96	0	48.48	0		
47.97	0	48.49	0		
47.98	0	48.50	0		
47.99	0	48.51	0		
48.00	0	48.52	0		
48.01	0	48.53	0		

Summary for Pond 4R: MH-101 to MH-102

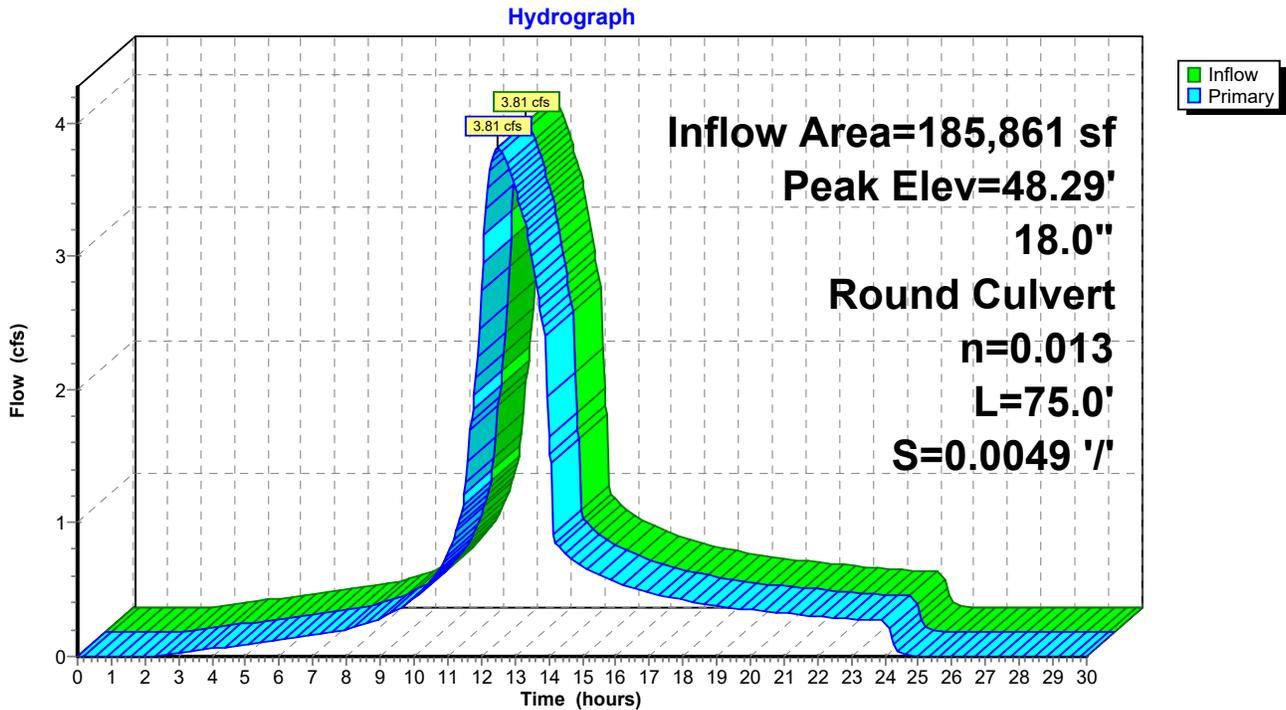
Inflow Area = 185,861 sf, 62.85% Impervious, Inflow Depth = 3.28" for 10-yr event
 Inflow = 3.81 cfs @ 12.51 hrs, Volume= 50,846 cf
 Outflow = 3.81 cfs @ 12.51 hrs, Volume= 50,846 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.81 cfs @ 12.51 hrs, Volume= 50,846 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.29' @ 12.51 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	47.20'	18.0" Round Culvert L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.83' S= 0.0049 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=3.81 cfs @ 12.51 hrs HW=48.29' (Free Discharge)
 ↑1=Culvert (Barrel Controls 3.81 cfs @ 3.86 fps)

Pond 4R: MH-101 to MH-102



Stage-Discharge for Pond 4R: MH-101 to MH-102

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.20	0.00	47.72	1.01	48.24	3.52
47.21	0.00	47.73	1.05	48.25	3.57
47.22	0.00	47.74	1.09	48.26	3.63
47.23	0.00	47.75	1.13	48.27	3.69
47.24	0.00	47.76	1.17	48.28	3.74
47.25	0.01	47.77	1.21	48.29	3.80
47.26	0.01	47.78	1.25	48.30	3.86
47.27	0.02	47.79	1.29	48.31	3.91
47.28	0.02	47.80	1.33	48.32	3.97
47.29	0.03	47.81	1.37	48.33	4.03
47.30	0.04	47.82	1.41	48.34	4.09
47.31	0.04	47.83	1.45	48.35	4.14
47.32	0.05	47.84	1.50	48.36	4.20
47.33	0.06	47.85	1.54	48.37	4.26
47.34	0.07	47.86	1.58	48.38	4.32
47.35	0.08	47.87	1.63	48.39	4.37
47.36	0.10	47.88	1.67	48.40	4.43
47.37	0.11	47.89	1.72	48.41	4.49
47.38	0.12	47.90	1.76	48.42	4.55
47.39	0.14	47.91	1.81	48.43	4.61
47.40	0.15	47.92	1.86	48.44	4.66
47.41	0.17	47.93	1.90	48.45	4.72
47.42	0.18	47.94	1.95	48.46	4.78
47.43	0.20	47.95	2.00	48.47	4.84
47.44	0.22	47.96	2.05	48.48	4.90
47.45	0.24	47.97	2.09	48.49	4.95
47.46	0.26	47.98	2.14	48.50	5.01
47.47	0.28	47.99	2.19	48.51	5.07
47.48	0.30	48.00	2.24	48.52	5.13
47.49	0.32	48.01	2.29	48.53	5.18
47.50	0.35	48.02	2.34	48.54	5.24
47.51	0.37	48.03	2.39	48.55	5.30
47.52	0.39	48.04	2.44	48.56	5.36
47.53	0.42	48.05	2.49	48.57	5.41
47.54	0.44	48.06	2.54	48.58	5.47
47.55	0.47	48.07	2.60	48.59	5.53
47.56	0.50	48.08	2.65	48.60	5.59
47.57	0.52	48.09	2.70	48.61	5.64
47.58	0.55	48.10	2.75	48.62	5.70
47.59	0.58	48.11	2.81	48.63	5.76
47.60	0.61	48.12	2.86	48.64	5.81
47.61	0.64	48.13	2.91	48.65	5.87
47.62	0.67	48.14	2.97	48.66	5.92
47.63	0.70	48.15	3.02	48.67	5.98
47.64	0.74	48.16	3.08	48.68	6.04
47.65	0.77	48.17	3.13	48.69	6.09
47.66	0.80	48.18	3.18	48.70	6.15
47.67	0.84	48.19	3.24		
47.68	0.87	48.20	3.29		
47.69	0.91	48.21	3.35		
47.70	0.94	48.22	3.41		
47.71	0.98	48.23	3.46		

Stage-Area-Storage for Pond 4R: MH-101 to MH-102

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0	48.34	0
47.31	0	47.83	0	48.35	0
47.32	0	47.84	0	48.36	0
47.33	0	47.85	0	48.37	0
47.34	0	47.86	0	48.38	0
47.35	0	47.87	0	48.39	0
47.36	0	47.88	0	48.40	0
47.37	0	47.89	0	48.41	0
47.38	0	47.90	0	48.42	0
47.39	0	47.91	0	48.43	0
47.40	0	47.92	0	48.44	0
47.41	0	47.93	0	48.45	0
47.42	0	47.94	0	48.46	0
47.43	0	47.95	0	48.47	0
47.44	0	47.96	0	48.48	0
47.45	0	47.97	0	48.49	0
47.46	0	47.98	0	48.50	0
47.47	0	47.99	0	48.51	0
47.48	0	48.00	0	48.52	0
47.49	0	48.01	0	48.53	0
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0		
47.68	0	48.20	0		
47.69	0	48.21	0		
47.70	0	48.22	0		
47.71	0	48.23	0		

Summary for Pond 5R: MH-102 to MH-103

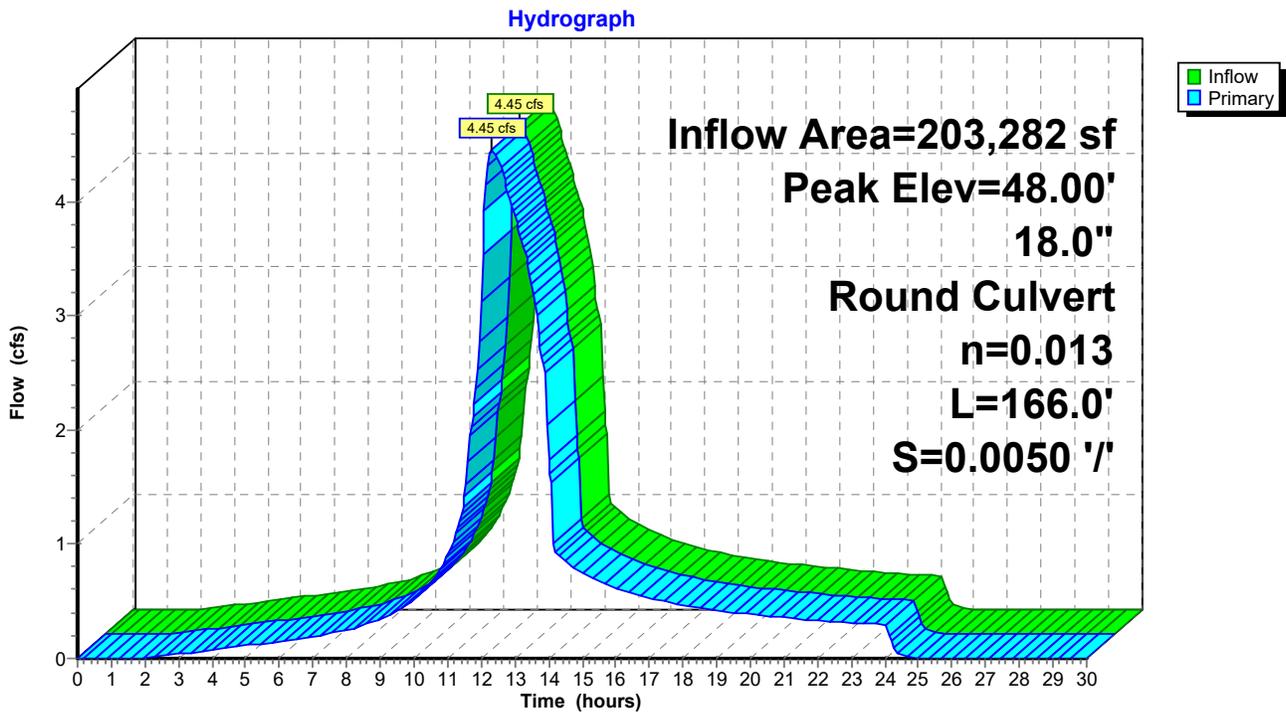
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 3.39" for 10-yr event
 Inflow = 4.45 cfs @ 12.33 hrs, Volume= 57,493 cf
 Outflow = 4.45 cfs @ 12.33 hrs, Volume= 57,493 cf, Atten= 0%, Lag= 0.0 min
 Primary = 4.45 cfs @ 12.33 hrs, Volume= 57,493 cf
 Routed to Pond 6R : MH-103 to FES-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.00' @ 12.33 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.83'	18.0" Round Culvert L= 166.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 46.83' / 46.00' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=4.45 cfs @ 12.33 hrs HW=48.00' (Free Discharge)
 ↳ **1=Culvert** (Barrel Controls 4.45 cfs @ 4.15 fps)

Pond 5R: MH-102 to MH-103



Stage-Discharge for Pond 5R: MH-102 to MH-103

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.83	0.00	47.35	1.05	47.87	3.69
46.84	0.00	47.36	1.09	47.88	3.75
46.85	0.00	47.37	1.13	47.89	3.81
46.86	0.00	47.38	1.17	47.90	3.87
46.87	0.00	47.39	1.22	47.91	3.93
46.88	0.01	47.40	1.26	47.92	3.99
46.89	0.01	47.41	1.30	47.93	4.05
46.90	0.02	47.42	1.34	47.94	4.11
46.91	0.02	47.43	1.39	47.95	4.17
46.92	0.03	47.44	1.43	47.96	4.22
46.93	0.04	47.45	1.47	47.97	4.28
46.94	0.04	47.46	1.52	47.98	4.34
46.95	0.05	47.47	1.56	47.99	4.40
46.96	0.06	47.48	1.61	48.00	4.46
46.97	0.07	47.49	1.66	48.01	4.52
46.98	0.08	47.50	1.70	48.02	4.58
46.99	0.10	47.51	1.75	48.03	4.64
47.00	0.11	47.52	1.80	48.04	4.70
47.01	0.12	47.53	1.85	48.05	4.76
47.02	0.14	47.54	1.89	48.06	4.82
47.03	0.15	47.55	1.94	48.07	4.88
47.04	0.17	47.56	1.99	48.08	4.94
47.05	0.19	47.57	2.04	48.09	5.00
47.06	0.21	47.58	2.09	48.10	5.06
47.07	0.22	47.59	2.14	48.11	5.12
47.08	0.24	47.60	2.20	48.12	5.18
47.09	0.26	47.61	2.25	48.13	5.24
47.10	0.29	47.62	2.30	48.14	5.29
47.11	0.31	47.63	2.35	48.15	5.35
47.12	0.33	47.64	2.40	48.16	5.41
47.13	0.35	47.65	2.46	48.17	5.47
47.14	0.38	47.66	2.51	48.18	5.53
47.15	0.40	47.67	2.56	48.19	5.59
47.16	0.43	47.68	2.62	48.20	5.64
47.17	0.46	47.69	2.67	48.21	5.70
47.18	0.48	47.70	2.73	48.22	5.76
47.19	0.51	47.71	2.78	48.23	5.82
47.20	0.54	47.72	2.84	48.24	5.87
47.21	0.57	47.73	2.89	48.25	5.93
47.22	0.60	47.74	2.95	48.26	5.99
47.23	0.63	47.75	3.00	48.27	6.04
47.24	0.66	47.76	3.06	48.28	6.10
47.25	0.69	47.77	3.12	48.29	6.15
47.26	0.73	47.78	3.17	48.30	6.21
47.27	0.76	47.79	3.23	48.31	6.26
47.28	0.80	47.80	3.29	48.32	6.32
47.29	0.83	47.81	3.34	48.33	6.37
47.30	0.87	47.82	3.40		
47.31	0.90	47.83	3.46		
47.32	0.94	47.84	3.52		
47.33	0.98	47.85	3.58		
47.34	1.02	47.86	3.63		

Stage-Area-Storage for Pond 5R: MH-102 to MH-103

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.83	0	47.35	0	47.87	0
46.84	0	47.36	0	47.88	0
46.85	0	47.37	0	47.89	0
46.86	0	47.38	0	47.90	0
46.87	0	47.39	0	47.91	0
46.88	0	47.40	0	47.92	0
46.89	0	47.41	0	47.93	0
46.90	0	47.42	0	47.94	0
46.91	0	47.43	0	47.95	0
46.92	0	47.44	0	47.96	0
46.93	0	47.45	0	47.97	0
46.94	0	47.46	0	47.98	0
46.95	0	47.47	0	47.99	0
46.96	0	47.48	0	48.00	0
46.97	0	47.49	0	48.01	0
46.98	0	47.50	0	48.02	0
46.99	0	47.51	0	48.03	0
47.00	0	47.52	0	48.04	0
47.01	0	47.53	0	48.05	0
47.02	0	47.54	0	48.06	0
47.03	0	47.55	0	48.07	0
47.04	0	47.56	0	48.08	0
47.05	0	47.57	0	48.09	0
47.06	0	47.58	0	48.10	0
47.07	0	47.59	0	48.11	0
47.08	0	47.60	0	48.12	0
47.09	0	47.61	0	48.13	0
47.10	0	47.62	0	48.14	0
47.11	0	47.63	0	48.15	0
47.12	0	47.64	0	48.16	0
47.13	0	47.65	0	48.17	0
47.14	0	47.66	0	48.18	0
47.15	0	47.67	0	48.19	0
47.16	0	47.68	0	48.20	0
47.17	0	47.69	0	48.21	0
47.18	0	47.70	0	48.22	0
47.19	0	47.71	0	48.23	0
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0		
47.31	0	47.83	0		
47.32	0	47.84	0		
47.33	0	47.85	0		
47.34	0	47.86	0		

Summary for Pond 6R: MH-103 to FES-101

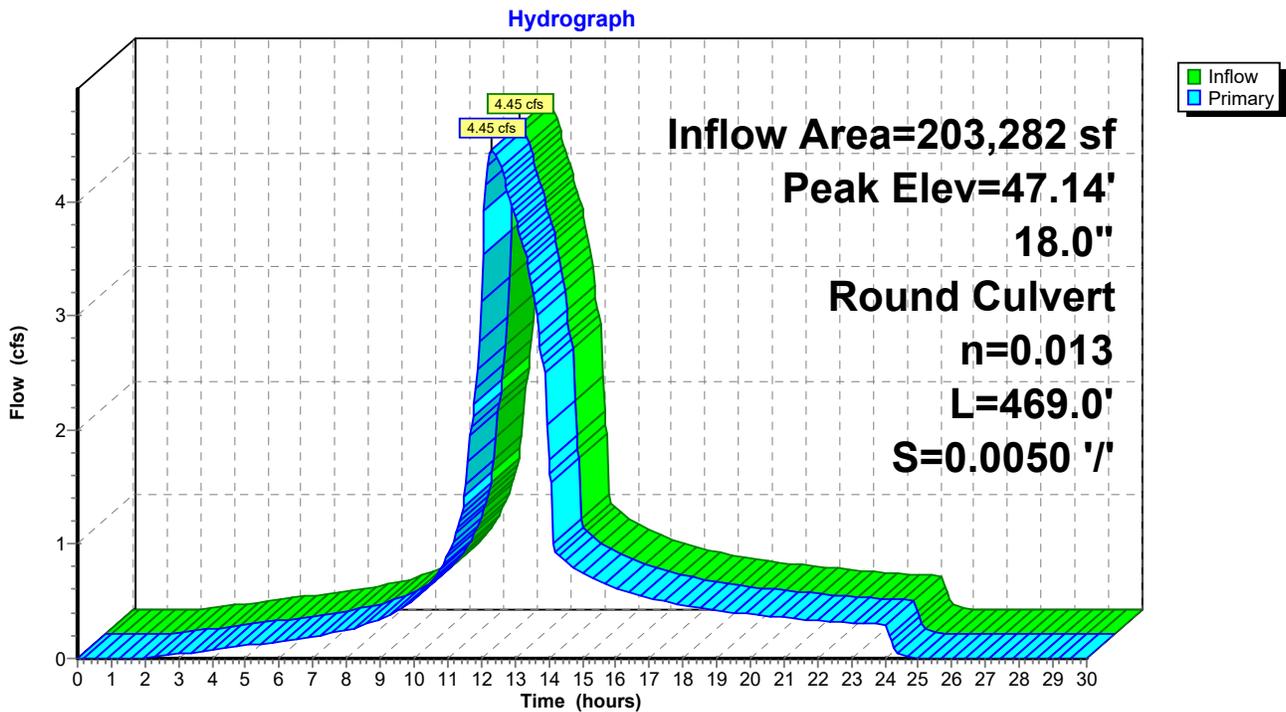
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 3.39" for 10-yr event
 Inflow = 4.45 cfs @ 12.33 hrs, Volume= 57,493 cf
 Outflow = 4.45 cfs @ 12.33 hrs, Volume= 57,493 cf, Atten= 0%, Lag= 0.0 min
 Primary = 4.45 cfs @ 12.33 hrs, Volume= 57,493 cf
 Routed to Pond P-109 : SWMB P-109

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.14' @ 12.33 hrs

Device #	Routing	Invert	Outlet Devices
1	Primary	46.00'	18.0" Round Culvert L= 469.0' Ke= 0.500 Inlet / Outlet Invert= 46.00' / 43.65' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=4.45 cfs @ 12.33 hrs HW=47.14' (Free Discharge)
 1=Culvert (Barrel Controls 4.45 cfs @ 4.29 fps)

Pond 6R: MH-103 to FES-101



Stage-Discharge for Pond 6R: MH-103 to FES-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.00	0.00	46.52	1.08	47.04	3.85
46.01	0.00	46.53	1.12	47.05	3.91
46.02	0.00	46.54	1.16	47.06	3.97
46.03	0.00	46.55	1.21	47.07	4.03
46.04	0.00	46.56	1.25	47.08	4.09
46.05	0.01	46.57	1.29	47.09	4.15
46.06	0.01	46.58	1.34	47.10	4.21
46.07	0.02	46.59	1.38	47.11	4.28
46.08	0.02	46.60	1.43	47.12	4.34
46.09	0.03	46.61	1.47	47.13	4.40
46.10	0.04	46.62	1.52	47.14	4.46
46.11	0.04	46.63	1.57	47.15	4.52
46.12	0.05	46.64	1.61	47.16	4.59
46.13	0.06	46.65	1.66	47.17	4.65
46.14	0.07	46.66	1.71	47.18	4.71
46.15	0.08	46.67	1.76	47.19	4.77
46.16	0.10	46.68	1.81	47.20	4.83
46.17	0.11	46.69	1.86	47.21	4.89
46.18	0.12	46.70	1.91	47.22	4.96
46.19	0.14	46.71	1.96	47.23	5.02
46.20	0.15	46.72	2.01	47.24	5.08
46.21	0.17	46.73	2.06	47.25	5.14
46.22	0.19	46.74	2.11	47.26	5.20
46.23	0.21	46.75	2.17	47.27	5.26
46.24	0.23	46.76	2.22	47.28	5.32
46.25	0.25	46.77	2.27	47.29	5.38
46.26	0.27	46.78	2.33	47.30	5.44
46.27	0.29	46.79	2.38	47.31	5.50
46.28	0.31	46.80	2.44	47.32	5.56
46.29	0.33	46.81	2.49	47.33	5.62
46.30	0.36	46.82	2.55	47.34	5.68
46.31	0.38	46.83	2.60	47.35	5.74
46.32	0.41	46.84	2.66	47.36	5.80
46.33	0.44	46.85	2.72	47.37	5.86
46.34	0.46	46.86	2.77	47.38	5.92
46.35	0.49	46.87	2.83	47.39	5.98
46.36	0.52	46.88	2.89	47.40	6.03
46.37	0.55	46.89	2.95	47.41	6.09
46.38	0.58	46.90	3.01	47.42	6.15
46.39	0.61	46.91	3.06	47.43	6.20
46.40	0.64	46.92	3.12	47.44	6.26
46.41	0.68	46.93	3.18	47.45	6.32
46.42	0.71	46.94	3.24	47.46	6.37
46.43	0.74	46.95	3.30	47.47	6.43
46.44	0.78	46.96	3.36	47.48	6.48
46.45	0.81	46.97	3.42	47.49	6.53
46.46	0.85	46.98	3.48	47.50	6.59
46.47	0.89	46.99	3.54		
46.48	0.92	47.00	3.60		
46.49	0.96	47.01	3.66		
46.50	1.00	47.02	3.72		
46.51	1.04	47.03	3.78		

Stage-Area-Storage for Pond 6R: MH-103 to FES-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.00	0	46.52	0	47.04	0
46.01	0	46.53	0	47.05	0
46.02	0	46.54	0	47.06	0
46.03	0	46.55	0	47.07	0
46.04	0	46.56	0	47.08	0
46.05	0	46.57	0	47.09	0
46.06	0	46.58	0	47.10	0
46.07	0	46.59	0	47.11	0
46.08	0	46.60	0	47.12	0
46.09	0	46.61	0	47.13	0
46.10	0	46.62	0	47.14	0
46.11	0	46.63	0	47.15	0
46.12	0	46.64	0	47.16	0
46.13	0	46.65	0	47.17	0
46.14	0	46.66	0	47.18	0
46.15	0	46.67	0	47.19	0
46.16	0	46.68	0	47.20	0
46.17	0	46.69	0	47.21	0
46.18	0	46.70	0	47.22	0
46.19	0	46.71	0	47.23	0
46.20	0	46.72	0	47.24	0
46.21	0	46.73	0	47.25	0
46.22	0	46.74	0	47.26	0
46.23	0	46.75	0	47.27	0
46.24	0	46.76	0	47.28	0
46.25	0	46.77	0	47.29	0
46.26	0	46.78	0	47.30	0
46.27	0	46.79	0	47.31	0
46.28	0	46.80	0	47.32	0
46.29	0	46.81	0	47.33	0
46.30	0	46.82	0	47.34	0
46.31	0	46.83	0	47.35	0
46.32	0	46.84	0	47.36	0
46.33	0	46.85	0	47.37	0
46.34	0	46.86	0	47.38	0
46.35	0	46.87	0	47.39	0
46.36	0	46.88	0	47.40	0
46.37	0	46.89	0	47.41	0
46.38	0	46.90	0	47.42	0
46.39	0	46.91	0	47.43	0
46.40	0	46.92	0	47.44	0
46.41	0	46.93	0	47.45	0
46.42	0	46.94	0	47.46	0
46.43	0	46.95	0	47.47	0
46.44	0	46.96	0	47.48	0
46.45	0	46.97	0	47.49	0
46.46	0	46.98	0	47.50	0
46.47	0	46.99	0		
46.48	0	47.00	0		
46.49	0	47.01	0		
46.50	0	47.02	0		
46.51	0	47.03	0		

Summary for Pond P-101: SWMB P-101

Inflow Area = 98,017 sf, 42.31% Impervious, Inflow Depth = 2.32" for 10-yr event
 Inflow = 3.79 cfs @ 12.25 hrs, Volume= 18,965 cf
 Outflow = 1.49 cfs @ 12.69 hrs, Volume= 18,965 cf, Atten= 61%, Lag= 26.5 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Pond 4R : MH-101 to MH-102
 Secondary = 1.49 cfs @ 12.69 hrs, Volume= 18,965 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.15' @ 12.69 hrs Surf.Area= 8,124 sf Storage= 3,285 cf

Plug-Flow detention time= 13.1 min calculated for 18,933 cf (100% of inflow)
 Center-of-Mass det. time= 13.0 min (891.4 - 878.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.40'	5,666 cf	84.83'W x 95.76'L x 2.33'H Field A 18,955 cf Overall - 4,791 cf Embedded = 14,164 cf x 40.0% Voids
#2A	47.90'	4,791 cf	ADS_StormTech SC-310 +Cap x 325 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 325 Chambers in 25 Rows
		10,457 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.10'	4.0' long x 0.73' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.40'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.10'

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.40' (Free Discharge)

- ↑1=Low Level Orifice (Controls 0.00 cfs)
- ↑2=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

Secondary OutFlow Max=1.49 cfs @ 12.69 hrs HW=48.15' (Free Discharge)

- ↑3=Underdrain (Controls 1.49 cfs)

Pond P-101: SWMB P-101 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

25 Rows x 34.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 84.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

325 Chambers x 14.7 cf = 4,791.1 cf Chamber Storage

18,955.2 cf Field - 4,791.1 cf Chambers = 14,164.0 cf Stone x 40.0% Voids = 5,665.6 cf Stone Storage

Chamber Storage + Stone Storage = 10,456.7 cf = 0.240 af

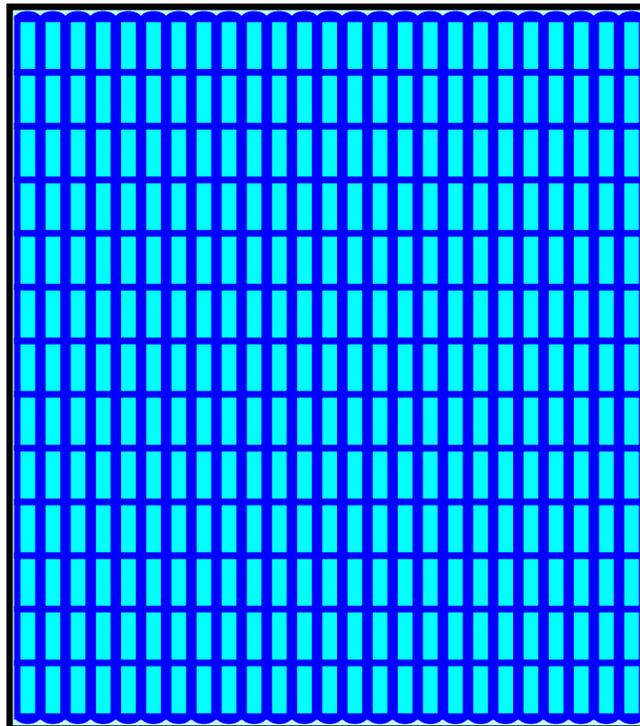
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 84.83' x 2.33'

325 Chambers

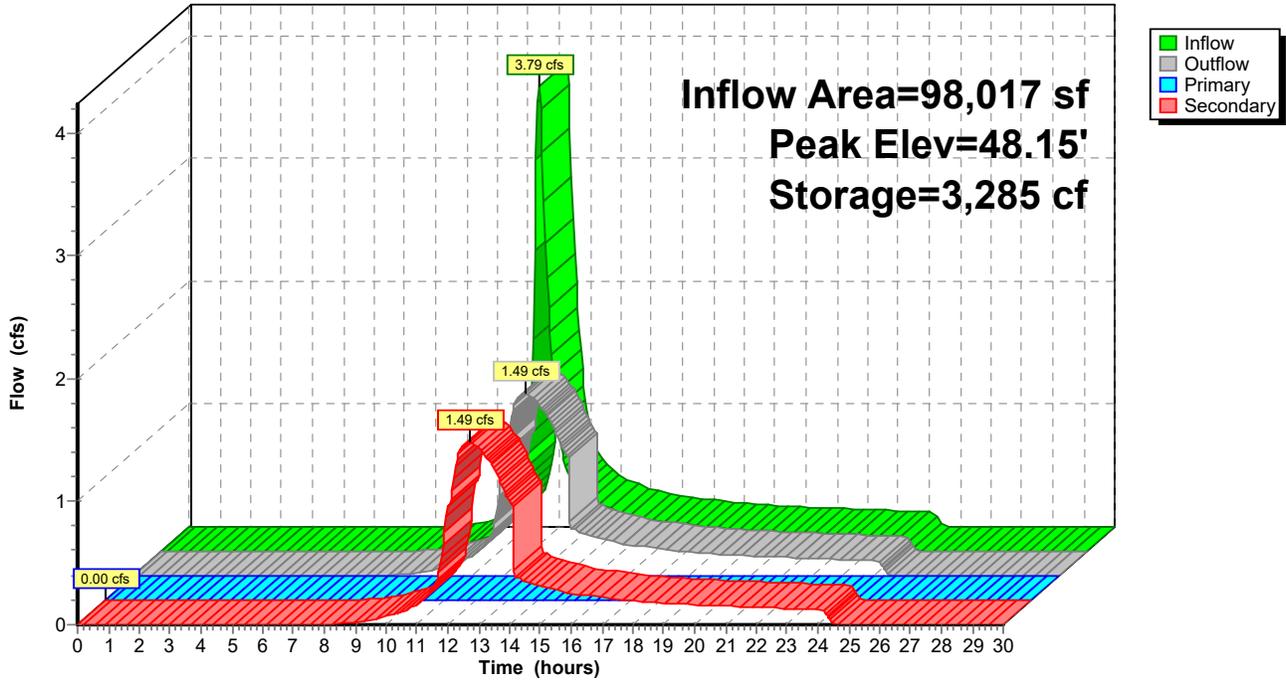
702.0 cy Field

524.6 cy Stone



Pond P-101: SWMB P-101

Hydrograph



Stage-Discharge for Pond P-101: SWMB P-101

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.40	0.00	0.00	0.00
47.45	0.98	0.00	0.98
47.50	1.01	0.00	1.01
47.55	1.05	0.00	1.05
47.60	1.08	0.00	1.08
47.65	1.12	0.00	1.12
47.70	1.16	0.00	1.16
47.75	1.19	0.00	1.19
47.80	1.23	0.00	1.23
47.85	1.27	0.00	1.27
47.90	1.30	0.00	1.30
47.95	1.34	0.00	1.34
48.00	1.37	0.00	1.37
48.05	1.41	0.00	1.41
48.10	1.45	0.00	1.45
48.15	1.48	0.00	1.48
48.20	1.52	0.00	1.52
48.25	1.56	0.00	1.56
48.30	1.59	0.00	1.59
48.35	1.63	0.00	1.63
48.40	1.66	0.00	1.66
48.45	1.70	0.00	1.70
48.50	1.74	0.00	1.74
48.55	1.78	0.01	1.77
48.60	1.84	0.03	1.81
48.65	1.91	0.07	1.84
48.70	1.99	0.11	1.88
48.75	2.08	0.17	1.92
48.80	2.18	0.23	1.95
48.85	2.28	0.30	1.99
48.90	2.39	0.36	2.03
48.95	2.49	0.43	2.06
49.00	2.57	0.47	2.10
49.05	2.65	0.52	2.13
49.10	2.73	0.56	2.17
49.15	2.95	0.74	2.21
49.20	3.29	1.05	2.24
49.25	3.71	1.44	2.28
49.30	4.20	1.89	2.31
49.35	4.74	2.39	2.35
49.40	5.34	2.95	2.39
49.45	5.98	3.56	2.42
49.50	6.66	4.21	2.46
49.55	7.39	4.90	2.50
49.60	8.16	5.63	2.53
49.65	8.97	6.40	2.57
49.70	9.82	7.21	2.60
49.75	10.70	8.06	2.64
49.80	11.61	8.94	2.68

Stage-Area-Storage for Pond P-101: SWMB P-101

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.40	8,124	0
47.45	8,124	162
47.50	8,124	325
47.55	8,124	487
47.60	8,124	650
47.65	8,124	812
47.70	8,124	975
47.75	8,124	1,137
47.80	8,124	1,300
47.85	8,124	1,462
47.90	8,124	1,625
47.95	8,124	1,954
48.00	8,124	2,282
48.05	8,124	2,609
48.10	8,124	2,933
48.15	8,124	3,254
48.20	8,124	3,572
48.25	8,124	3,887
48.30	8,124	4,199
48.35	8,124	4,506
48.40	8,124	4,810
48.45	8,124	5,109
48.50	8,124	5,403
48.55	8,124	5,694
48.60	8,124	5,979
48.65	8,124	6,258
48.70	8,124	6,531
48.75	8,124	6,797
48.80	8,124	7,055
48.85	8,124	7,306
48.90	8,124	7,546
48.95	8,124	7,774
49.00	8,124	7,987
49.05	8,124	8,185
49.10	8,124	8,372
49.15	8,124	8,550
49.20	8,124	8,722
49.25	8,124	8,886
49.30	8,124	9,049
49.35	8,124	9,211
49.40	8,124	9,374
49.45	8,124	9,536
49.50	8,124	9,699
49.55	8,124	9,861
49.60	8,124	10,023
49.65	8,124	10,186
49.70	8,124	10,348
49.75	8,124	10,457
49.80	8,124	10,457

Summary for Pond P-102: SWMB P-102

Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 4.36" for 10-yr event
 Inflow = 9.95 cfs @ 12.05 hrs, Volume= 31,881 cf
 Outflow = 2.38 cfs @ 12.36 hrs, Volume= 31,881 cf, Atten= 76%, Lag= 18.1 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Pond 3R : OCS-102 to MH-101
 Secondary = 2.38 cfs @ 12.36 hrs, Volume= 31,881 cf
 Routed to Pond 3R : OCS-102 to MH-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 48.46' @ 12.36 hrs Surf.Area= 10,996 sf Storage= 6,154 cf

Plug-Flow detention time= 15.1 min calculated for 31,828 cf (100% of inflow)
 Center-of-Mass det. time= 15.1 min (800.6 - 785.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.50'	7,657 cf	114.83'W x 95.76'L x 2.33'H Field A 25,658 cf Overall - 6,516 cf Embedded = 19,142 cf x 40.0% Voids
#2A	48.00'	6,516 cf	ADS_StormTech SC-310 +Cap x 442 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 442 Chambers in 34 Rows
		14,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	4.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.15'	4.0' long x 3.90' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.50'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.40'

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=47.50' (Free Discharge)

- ↑1=Low Level Orifice (Controls 0.00 cfs)
- ↑2=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

Secondary OutFlow Max=2.38 cfs @ 12.36 hrs HW=48.46' (Free Discharge)

- ↑3=Underdrain (Controls 2.38 cfs)

Pond P-102: SWMB P-102 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

34 Rows x 34.0" Wide + 6.0" Spacing x 33 + 12.0" Side Stone x 2 = 114.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

442 Chambers x 14.7 cf = 6,515.9 cf Chamber Storage

25,658.4 cf Field - 6,515.9 cf Chambers = 19,142.4 cf Stone x 40.0% Voids = 7,657.0 cf Stone Storage

Chamber Storage + Stone Storage = 14,172.9 cf = 0.325 af

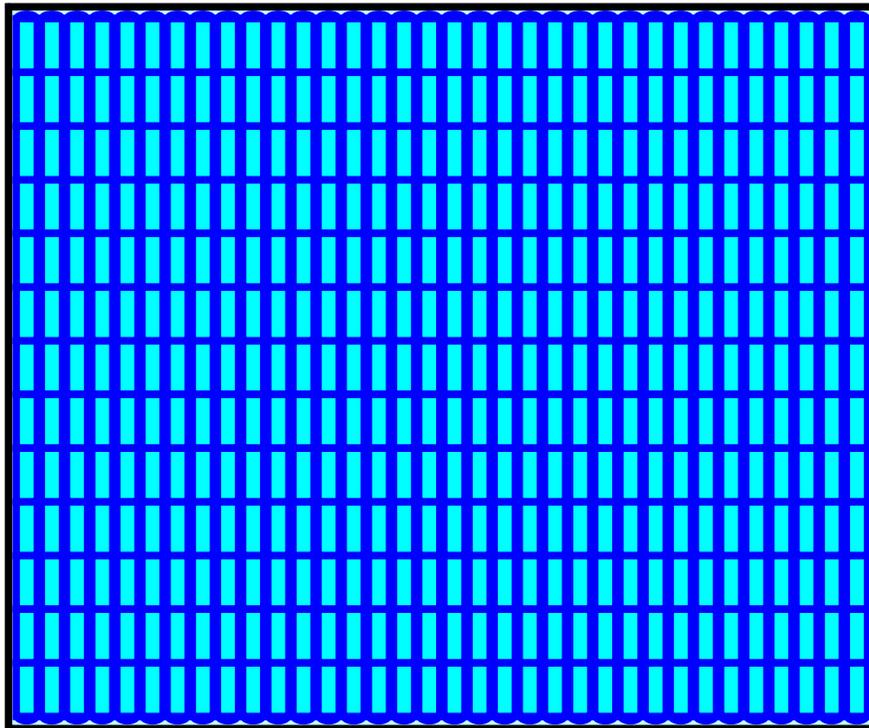
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 114.83' x 2.33'

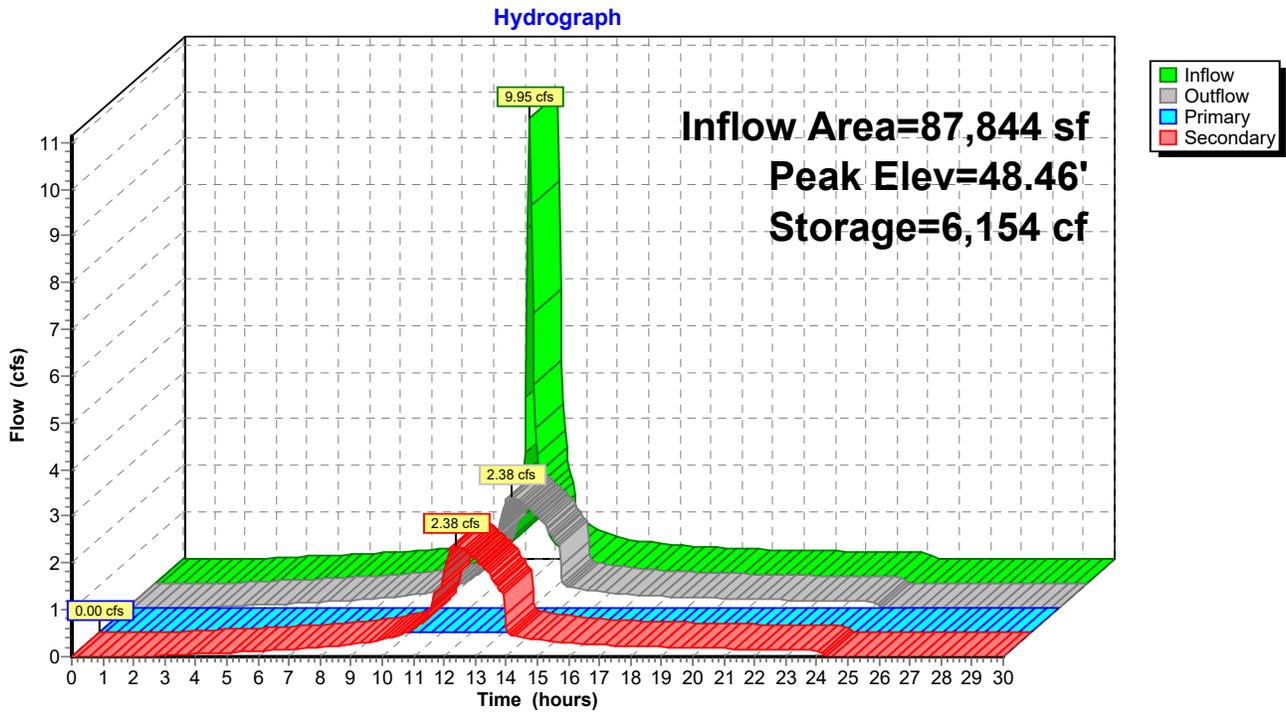
442 Chambers

950.3 cy Field

709.0 cy Stone



Pond P-102: SWMB P-102



Stage-Discharge for Pond P-102: SWMB P-102

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.50	0.00	0.00	0.00	52.70	108.50	101.21	7.29
47.60	1.39	0.00	1.39	52.80	113.09	105.68	7.41
47.70	1.50	0.00	1.50	52.90	117.74	110.22	7.52
47.80	1.62	0.00	1.62	53.00	122.46	114.82	7.64
47.90	1.74	0.00	1.74				
48.00	1.85	0.00	1.85				
48.10	1.97	0.00	1.97				
48.20	2.08	0.00	2.08				
48.30	2.20	0.00	2.20				
48.40	2.31	0.00	2.31				
48.50	2.43	0.00	2.43				
48.60	2.57	0.02	2.55				
48.70	2.74	0.08	2.66				
48.80	2.93	0.15	2.78				
48.90	3.10	0.20	2.89				
49.00	3.25	0.24	3.01				
49.10	3.40	0.28	3.12				
49.20	3.69	0.45	3.24				
49.30	4.46	1.10	3.36				
49.40	5.49	2.02	3.47				
49.50	6.73	3.15	3.59				
49.60	8.16	4.46	3.70				
49.70	9.75	5.93	3.82				
49.80	11.49	7.56	3.93				
49.90	13.38	9.33	4.05				
50.00	15.39	11.23	4.17				
50.10	17.54	13.26	4.28				
50.20	19.81	15.41	4.40				
50.30	22.20	17.68	4.51				
50.40	24.70	20.07	4.63				
50.50	27.32	22.57	4.74				
50.60	30.04	25.18	4.86				
50.70	32.87	27.90	4.98				
50.80	35.81	30.72	5.09				
50.90	38.84	33.64	5.21				
51.00	41.98	36.65	5.32				
51.10	45.21	39.77	5.44				
51.20	48.53	42.98	5.55				
51.30	51.95	46.28	5.67				
51.40	55.46	49.68	5.79				
51.50	59.06	53.16	5.90				
51.60	62.74	56.73	6.02				
51.70	66.51	60.38	6.13				
51.80	70.37	64.12	6.25				
51.90	74.30	67.94	6.36				
52.00	78.31	71.83	6.48				
52.10	82.41	75.81	6.60				
52.20	86.57	79.86	6.71				
52.30	90.82	83.99	6.83				
52.40	95.13	88.19	6.94				
52.50	99.52	92.46	7.06				
52.60	103.98	96.80	7.17				

Stage-Area-Storage for Pond P-102: SWMB P-102

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.50	10,996	0	52.70	10,996	14,173
47.60	10,996	440	52.80	10,996	14,173
47.70	10,996	880	52.90	10,996	14,173
47.80	10,996	1,320	53.00	10,996	14,173
47.90	10,996	1,759			
48.00	10,996	2,199			
48.10	10,996	3,092			
48.20	10,996	3,974			
48.30	10,996	4,842			
48.40	10,996	5,692			
48.50	10,996	6,520			
48.60	10,996	7,326			
48.70	10,996	8,106			
48.80	10,996	8,855			
48.90	10,996	9,566			
49.00	10,996	10,232			
49.10	10,996	10,829			
49.20	10,996	11,350			
49.30	10,996	11,824			
49.40	10,996	12,267			
49.50	10,996	12,707			
49.60	10,996	13,147			
49.70	10,996	13,586			
49.80	10,996	14,026			
49.90	10,996	14,173			
50.00	10,996	14,173			
50.10	10,996	14,173			
50.20	10,996	14,173			
50.30	10,996	14,173			
50.40	10,996	14,173			
50.50	10,996	14,173			
50.60	10,996	14,173			
50.70	10,996	14,173			
50.80	10,996	14,173			
50.90	10,996	14,173			
51.00	10,996	14,173			
51.10	10,996	14,173			
51.20	10,996	14,173			
51.30	10,996	14,173			
51.40	10,996	14,173			
51.50	10,996	14,173			
51.60	10,996	14,173			
51.70	10,996	14,173			
51.80	10,996	14,173			
51.90	10,996	14,173			
52.00	10,996	14,173			
52.10	10,996	14,173			
52.20	10,996	14,173			
52.30	10,996	14,173			
52.40	10,996	14,173			
52.50	10,996	14,173			
52.60	10,996	14,173			

Summary for Pond P-103: SWMB P-103

Inflow Area = 24,111 sf, 91.05% Impervious, Inflow Depth = 4.58" for 10-yr event
 Inflow = 3.06 cfs @ 12.02 hrs, Volume= 9,198 cf
 Outflow = 1.36 cfs @ 12.15 hrs, Volume= 9,200 cf, Atten= 56%, Lag= 7.5 min
 Primary = 1.04 cfs @ 12.15 hrs, Volume= 1,905 cf
 Routed to Reach 2R : 18" HDPE
 Secondary = 0.32 cfs @ 12.15 hrs, Volume= 7,295 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 51.01' @ 12.15 hrs Surf.Area= 2,096 sf Storage= 1,536 cf

Plug-Flow detention time= 12.2 min calculated for 9,185 cf (100% of inflow)
 Center-of-Mass det. time= 12.3 min (783.5 - 771.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.80'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	50.30'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	50.30'	8.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	51.40'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	49.80'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.00'

Primary OutFlow Max=1.03 cfs @ 12.15 hrs HW=51.01' (Free Discharge)

↑1=Low Level Orifice (Orifice Controls 1.03 cfs @ 2.96 fps)

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

Secondary OutFlow Max=0.32 cfs @ 12.15 hrs HW=51.01' (Free Discharge)

↑3=Underdrain (Controls 0.32 cfs)

Pond P-103: SWMB P-103 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

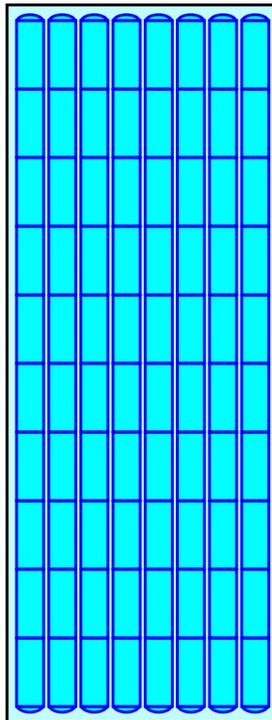
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

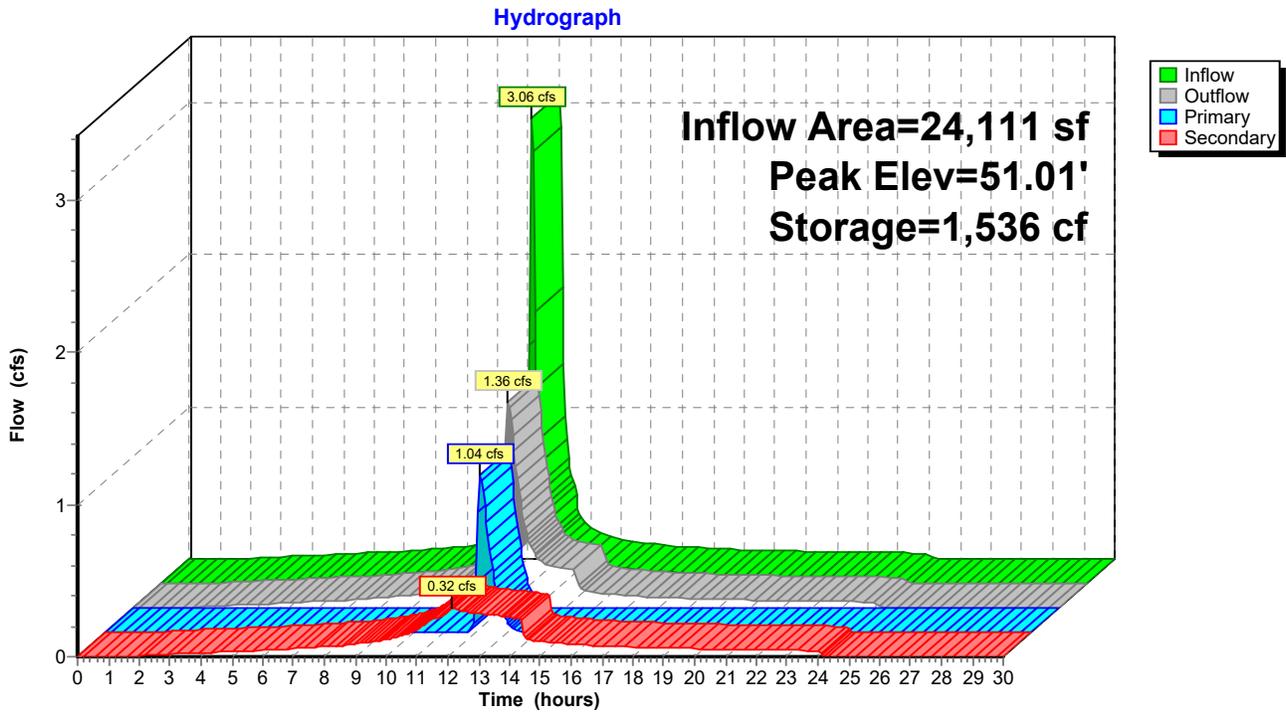
80 Chambers

181.1 cy Field

137.4 cy Stone



Pond P-103: SWMB P-103



Stage-Discharge for Pond P-103: SWMB P-103

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
49.80	0.00	0.00	0.00	52.40	16.45	16.04	0.41
49.85	0.25	0.00	0.25	52.45	17.57	17.16	0.41
49.90	0.25	0.00	0.25	52.50	18.72	18.30	0.41
49.95	0.25	0.00	0.25	52.55	19.89	19.47	0.42
50.00	0.26	0.00	0.26	52.60	21.10	20.68	0.42
50.05	0.26	0.00	0.26	52.65	22.33	21.91	0.42
50.10	0.26	0.00	0.26	52.70	23.59	23.16	0.43
50.15	0.26	0.00	0.26	52.75	24.88	24.45	0.43
50.20	0.27	0.00	0.27	52.80	26.20	25.76	0.43
50.25	0.27	0.00	0.27	52.85	27.54	27.10	0.44
50.30	0.27	0.00	0.27	52.90	28.91	28.47	0.44
50.35	0.29	0.01	0.28	52.95	30.30	29.86	0.44
50.40	0.32	0.04	0.28	53.00	31.72	31.27	0.45
50.45	0.36	0.08	0.28	53.05	33.17	32.72	0.45
50.50	0.42	0.13	0.29	53.10	34.64	34.18	0.45
50.55	0.49	0.20	0.29	53.15	36.13	35.67	0.46
50.60	0.58	0.28	0.29	53.20	37.65	37.19	0.46
50.65	0.67	0.37	0.30	53.25	39.19	38.73	0.46
50.70	0.77	0.47	0.30	53.30	40.76	40.30	0.47
50.75	0.88	0.57	0.30	53.35	42.35	41.89	0.47
50.80	0.98	0.68	0.31	53.40	43.97	43.50	0.47
50.85	1.09	0.78	0.31	53.45	45.61	45.13	0.48
50.90	1.19	0.87	0.31	53.50	47.27	46.79	0.48
50.95	1.27	0.95	0.32	53.55	48.95	48.47	0.48
51.00	1.34	1.02	0.32	53.60	50.66	50.18	0.49
51.05	1.41	1.08	0.32	53.65	52.39	51.90	0.49
51.10	1.47	1.15	0.33	53.70	54.14	53.65	0.49
51.15	1.54	1.21	0.33	53.75	55.91	55.42	0.49
51.20	1.60	1.27	0.33	53.80	57.71	57.21	0.50
51.25	1.65	1.32	0.34	53.85	59.52	59.02	0.50
51.30	1.71	1.37	0.34	53.90	61.36	60.86	0.50
51.35	1.76	1.42	0.34	53.95	63.22	62.71	0.51
51.40	1.82	1.47	0.34	54.00	65.10	64.59	0.51
51.45	2.01	1.67	0.35				
51.50	2.33	1.98	0.35				
51.55	2.73	2.38	0.35				
51.60	3.19	2.84	0.36				
51.65	3.71	3.35	0.36				
51.70	4.29	3.92	0.36				
51.75	4.91	4.54	0.37				
51.80	5.57	5.20	0.37				
51.85	6.28	5.91	0.37				
51.90	7.03	6.65	0.38				
51.95	7.81	7.43	0.38				
52.00	8.64	8.25	0.38				
52.05	9.50	9.11	0.39				
52.10	10.39	10.00	0.39				
52.15	11.32	10.93	0.39				
52.20	12.28	11.89	0.40				
52.25	13.28	12.88	0.40				
52.30	14.30	13.90	0.40				
52.35	15.36	14.96	0.41				

Stage-Area-Storage for Pond P-103: SWMB P-103

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.80	2,096	0	52.40	2,096	2,664
49.85	2,096	42	52.45	2,096	2,664
49.90	2,096	84	52.50	2,096	2,664
49.95	2,096	126	52.55	2,096	2,664
50.00	2,096	168	52.60	2,096	2,664
50.05	2,096	210	52.65	2,096	2,664
50.10	2,096	251	52.70	2,096	2,664
50.15	2,096	293	52.75	2,096	2,664
50.20	2,096	335	52.80	2,096	2,664
50.25	2,096	377	52.85	2,096	2,664
50.30	2,096	419	52.90	2,096	2,664
50.35	2,096	502	52.95	2,096	2,664
50.40	2,096	585	53.00	2,096	2,664
50.45	2,096	667	53.05	2,096	2,664
50.50	2,096	749	53.10	2,096	2,664
50.55	2,096	830	53.15	2,096	2,664
50.60	2,096	910	53.20	2,096	2,664
50.65	2,096	990	53.25	2,096	2,664
50.70	2,096	1,068	53.30	2,096	2,664
50.75	2,096	1,146	53.35	2,096	2,664
50.80	2,096	1,222	53.40	2,096	2,664
50.85	2,096	1,298	53.45	2,096	2,664
50.90	2,096	1,372	53.50	2,096	2,664
50.95	2,096	1,446	53.55	2,096	2,664
51.00	2,096	1,518	53.60	2,096	2,664
51.05	2,096	1,588	53.65	2,096	2,664
51.10	2,096	1,657	53.70	2,096	2,664
51.15	2,096	1,725	53.75	2,096	2,664
51.20	2,096	1,790	53.80	2,096	2,664
51.25	2,096	1,854	53.85	2,096	2,664
51.30	2,096	1,915	53.90	2,096	2,664
51.35	2,096	1,973	53.95	2,096	2,664
51.40	2,096	2,027	54.00	2,096	2,664
51.45	2,096	2,078			
51.50	2,096	2,126			
51.55	2,096	2,172			
51.60	2,096	2,216			
51.65	2,096	2,258			
51.70	2,096	2,300			
51.75	2,096	2,342			
51.80	2,096	2,384			
51.85	2,096	2,426			
51.90	2,096	2,468			
51.95	2,096	2,510			
52.00	2,096	2,552			
52.05	2,096	2,594			
52.10	2,096	2,636			
52.15	2,096	2,664			
52.20	2,096	2,664			
52.25	2,096	2,664			
52.30	2,096	2,664			
52.35	2,096	2,664			

Summary for Pond P-104: P-104

Inflow Area = 17,421 sf, 91.84% Impervious, Inflow Depth = 4.58" for 10-yr event
 Inflow = 2.21 cfs @ 12.02 hrs, Volume= 6,646 cf
 Outflow = 0.81 cfs @ 12.17 hrs, Volume= 6,647 cf, Atten= 63%, Lag= 9.1 min
 Primary = 0.38 cfs @ 12.17 hrs, Volume= 597 cf
 Routed to Pond 5R : MH-102 to MH-103
 Secondary = 0.43 cfs @ 12.17 hrs, Volume= 6,050 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 49.58' @ 12.17 hrs Surf.Area= 2,096 sf Storage= 1,088 cf

Plug-Flow detention time= 10.2 min calculated for 6,636 cf (100% of inflow)
 Center-of-Mass det. time= 10.3 min (781.5 - 771.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	48.67'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	49.17'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	49.17'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	50.25'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	48.67'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 47.50'

Primary OutFlow Max=0.37 cfs @ 12.17 hrs HW=49.58' (Free Discharge)

↑1=Low Level Orifice (Orifice Controls 0.37 cfs @ 2.17 fps)

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

Secondary OutFlow Max=0.43 cfs @ 12.17 hrs HW=49.58' (Free Discharge)

↑3=Underdrain (Controls 0.43 cfs)

Pond P-104: P-104 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

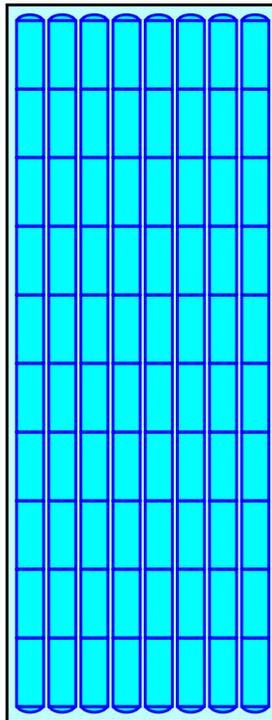
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

80 Chambers

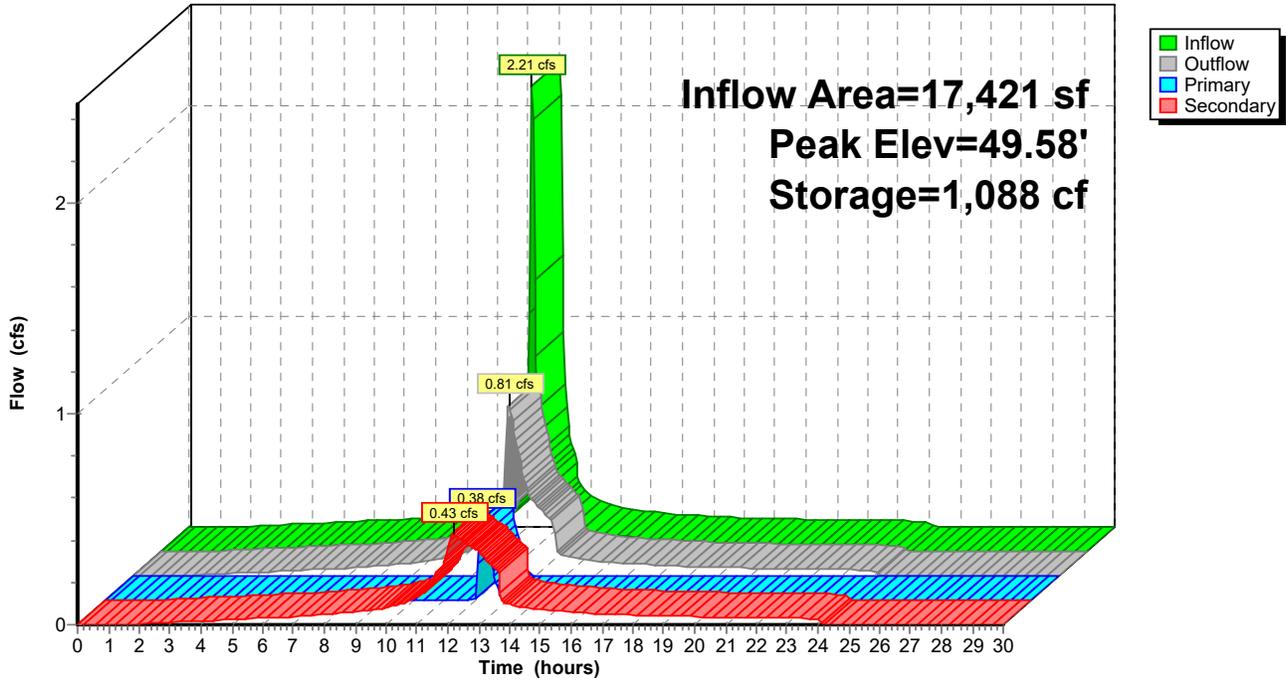
181.1 cy Field

137.4 cy Stone



Pond P-104: P-104

Hydrograph



Stage-Discharge for Pond P-104: P-104

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
48.67	0.00	0.00	0.00	51.27	16.31	15.52	0.78
48.72	0.25	0.00	0.25	51.32	17.43	16.64	0.79
48.77	0.26	0.00	0.26	51.37	18.58	17.78	0.80
48.82	0.27	0.00	0.27	51.42	19.76	18.95	0.81
48.87	0.28	0.00	0.28	51.47	20.97	20.15	0.82
48.92	0.29	0.00	0.29	51.52	22.21	21.38	0.83
48.97	0.30	0.00	0.30	51.57	23.48	22.63	0.84
49.02	0.32	0.00	0.32	51.62	24.77	23.92	0.85
49.07	0.33	0.00	0.33	51.67	26.09	25.23	0.86
49.12	0.34	0.00	0.34	51.72	27.44	26.56	0.87
49.17	0.35	0.00	0.35	51.77	28.81	27.93	0.89
49.22	0.36	0.01	0.36	51.82	30.21	29.32	0.90
49.27	0.40	0.03	0.37	51.87	31.64	30.73	0.91
49.32	0.44	0.07	0.38	51.92	33.09	32.17	0.92
49.37	0.50	0.11	0.39	51.97	34.56	33.64	0.93
49.42	0.57	0.17	0.40	52.02	36.06	35.13	0.94
49.47	0.64	0.23	0.41	52.07	37.59	36.64	0.95
49.52	0.71	0.30	0.42	52.12	39.14	38.18	0.96
49.57	0.79	0.36	0.43	52.17	40.71	39.74	0.97
49.62	0.86	0.43	0.44	52.22	42.31	41.33	0.98
49.67	0.92	0.47	0.45	52.27	43.93	42.94	0.99
49.72	0.98	0.52	0.46	52.32	45.57	44.57	1.00
49.77	1.03	0.56	0.47	52.37	47.24	46.23	1.01
49.82	1.08	0.60	0.48	52.42	48.93	47.91	1.02
49.87	1.13	0.63	0.49	52.47	50.64	49.61	1.03
49.92	1.17	0.67	0.50	52.52	52.37	51.33	1.04
49.97	1.21	0.70	0.51	52.57	54.13	53.08	1.05
50.02	1.25	0.73	0.52	52.62	55.91	54.85	1.06
50.07	1.29	0.76	0.53	52.67	57.71	56.64	1.07
50.12	1.33	0.79	0.54	52.72	59.53	58.45	1.08
50.17	1.37	0.82	0.55	52.77	61.37	60.28	1.09
50.22	1.41	0.85	0.56	52.82	63.23	62.13	1.10
50.27	1.48	0.91	0.57				
50.32	1.72	1.14	0.58				
50.37	2.06	1.47	0.59				
50.42	2.48	1.87	0.61				
50.47	2.95	2.34	0.62				
50.52	3.48	2.86	0.63				
50.57	4.06	3.43	0.64				
50.62	4.69	4.04	0.65				
50.67	5.36	4.71	0.66				
50.72	6.08	5.41	0.67				
50.77	6.83	6.15	0.68				
50.82	7.62	6.93	0.69				
50.87	8.45	7.75	0.70				
50.92	9.32	8.61	0.71				
50.97	10.22	9.50	0.72				
51.02	11.15	10.42	0.73				
51.07	12.12	11.38	0.74				
51.12	13.12	12.37	0.75				
51.17	14.15	13.39	0.76				
51.22	15.21	14.44	0.77				

Stage-Area-Storage for Pond P-104: P-104

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
48.67	2,096	0	51.27	2,096	2,664
48.72	2,096	42	51.32	2,096	2,664
48.77	2,096	84	51.37	2,096	2,664
48.82	2,096	126	51.42	2,096	2,664
48.87	2,096	168	51.47	2,096	2,664
48.92	2,096	210	51.52	2,096	2,664
48.97	2,096	251	51.57	2,096	2,664
49.02	2,096	293	51.62	2,096	2,664
49.07	2,096	335	51.67	2,096	2,664
49.12	2,096	377	51.72	2,096	2,664
49.17	2,096	419	51.77	2,096	2,664
49.22	2,096	502	51.82	2,096	2,664
49.27	2,096	585	51.87	2,096	2,664
49.32	2,096	667	51.92	2,096	2,664
49.37	2,096	749	51.97	2,096	2,664
49.42	2,096	830	52.02	2,096	2,664
49.47	2,096	910	52.07	2,096	2,664
49.52	2,096	990	52.12	2,096	2,664
49.57	2,096	1,068	52.17	2,096	2,664
49.62	2,096	1,146	52.22	2,096	2,664
49.67	2,096	1,222	52.27	2,096	2,664
49.72	2,096	1,298	52.32	2,096	2,664
49.77	2,096	1,372	52.37	2,096	2,664
49.82	2,096	1,446	52.42	2,096	2,664
49.87	2,096	1,518	52.47	2,096	2,664
49.92	2,096	1,588	52.52	2,096	2,664
49.97	2,096	1,657	52.57	2,096	2,664
50.02	2,096	1,725	52.62	2,096	2,664
50.07	2,096	1,790	52.67	2,096	2,664
50.12	2,096	1,854	52.72	2,096	2,664
50.17	2,096	1,915	52.77	2,096	2,664
50.22	2,096	1,973	52.82	2,096	2,664
50.27	2,096	2,027			
50.32	2,096	2,078			
50.37	2,096	2,126			
50.42	2,096	2,172			
50.47	2,096	2,216			
50.52	2,096	2,258			
50.57	2,096	2,300			
50.62	2,096	2,342			
50.67	2,096	2,384			
50.72	2,096	2,426			
50.77	2,096	2,468			
50.82	2,096	2,510			
50.87	2,096	2,552			
50.92	2,096	2,594			
50.97	2,096	2,636			
51.02	2,096	2,664			
51.07	2,096	2,664			
51.12	2,096	2,664			
51.17	2,096	2,664			
51.22	2,096	2,664			

Summary for Pond P-105: SWMB P-105

Inflow Area = 184,140 sf, 100.00% Impervious, Inflow Depth = 4.92" for 10-yr event
 Inflow = 24.01 cfs @ 12.02 hrs, Volume= 75,542 cf
 Outflow = 2.95 cfs @ 12.58 hrs, Volume= 75,542 cf, Atten= 88%, Lag= 33.2 min
 Discarded = 2.94 cfs @ 12.58 hrs, Volume= 75,541 cf
 Primary = 0.00 cfs @ 12.58 hrs, Volume= 2 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 50.73' @ 12.58 hrs Surf.Area= 16,134 sf Storage= 19,313 cf

Plug-Flow detention time= 39.4 min calculated for 75,417 cf (100% of inflow)
 Center-of-Mass det. time= 39.4 min (787.0 - 747.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.00'	14,226 cf	167.75'W x 96.18'L x 3.50'H Field A 56,468 cf Overall - 20,903 cf Embedded = 35,565 cf x 40.0% Voids
#2A	49.50'	20,903 cf	ADS_StormTech SC-740 +Cap x 455 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 455 Chambers in 35 Rows
		35,129 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	4.0' long x 2.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 2.5' Crest Height
#2	Primary	50.70'	6.0" Vert. 6" Low Level Orifice C= 0.600 Limited to weir flow at low heads
#3	Discarded	49.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 46.00'

Discarded OutFlow Max=2.94 cfs @ 12.58 hrs HW=50.73' (Free Discharge)
 ↳ **3=Exfiltration** (Controls 2.94 cfs)

Primary OutFlow Max=0.00 cfs @ 12.58 hrs HW=50.73' (Free Discharge)
 ↳ **1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
 ↳ **2=6" Low Level Orifice** (Orifice Controls 0.00 cfs @ 0.57 fps)

Pond P-105: SWMB P-105 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 94.18' Row Length +12.0" End Stone x 2 = 96.18' Base Length

35 Rows x 51.0" Wide + 6.0" Spacing x 34 + 12.0" Side Stone x 2 = 167.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

455 Chambers x 45.9 cf = 20,902.7 cf Chamber Storage

56,467.7 cf Field - 20,902.7 cf Chambers = 35,565.0 cf Stone x 40.0% Voids = 14,226.0 cf Stone Storage

Chamber Storage + Stone Storage = 35,128.7 cf = 0.806 af

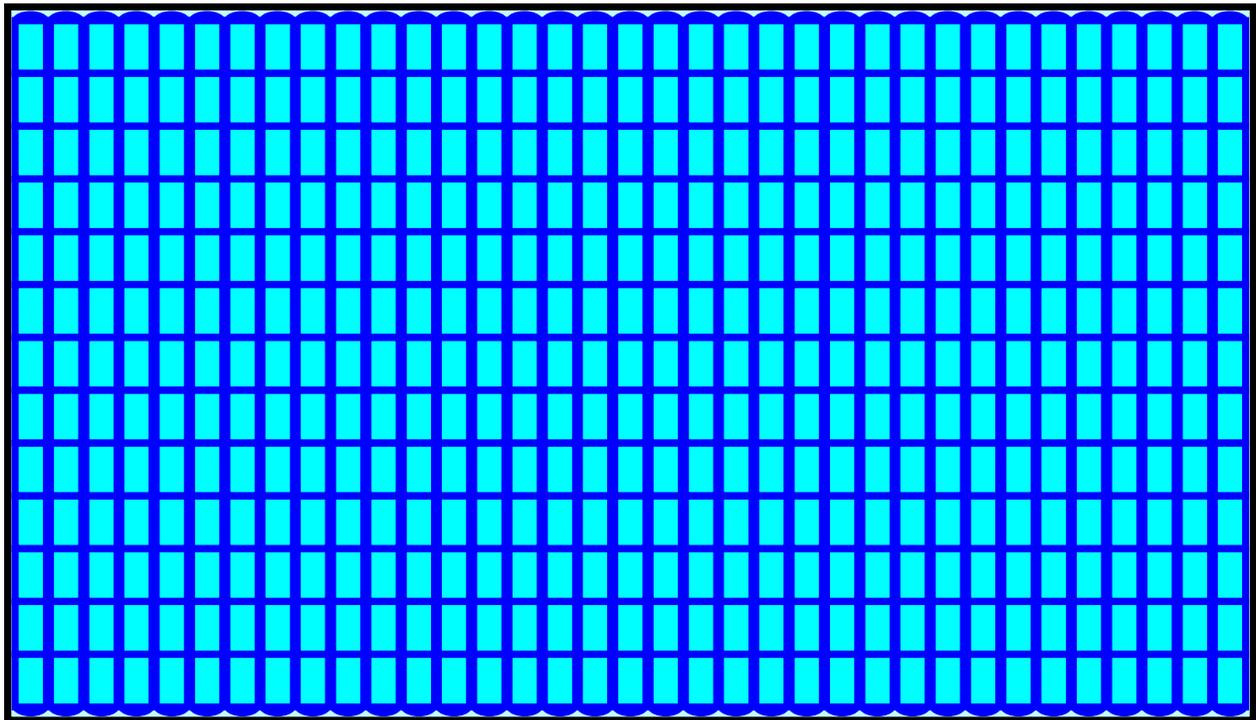
Overall Storage Efficiency = 62.2%

Overall System Size = 96.18' x 167.75' x 3.50'

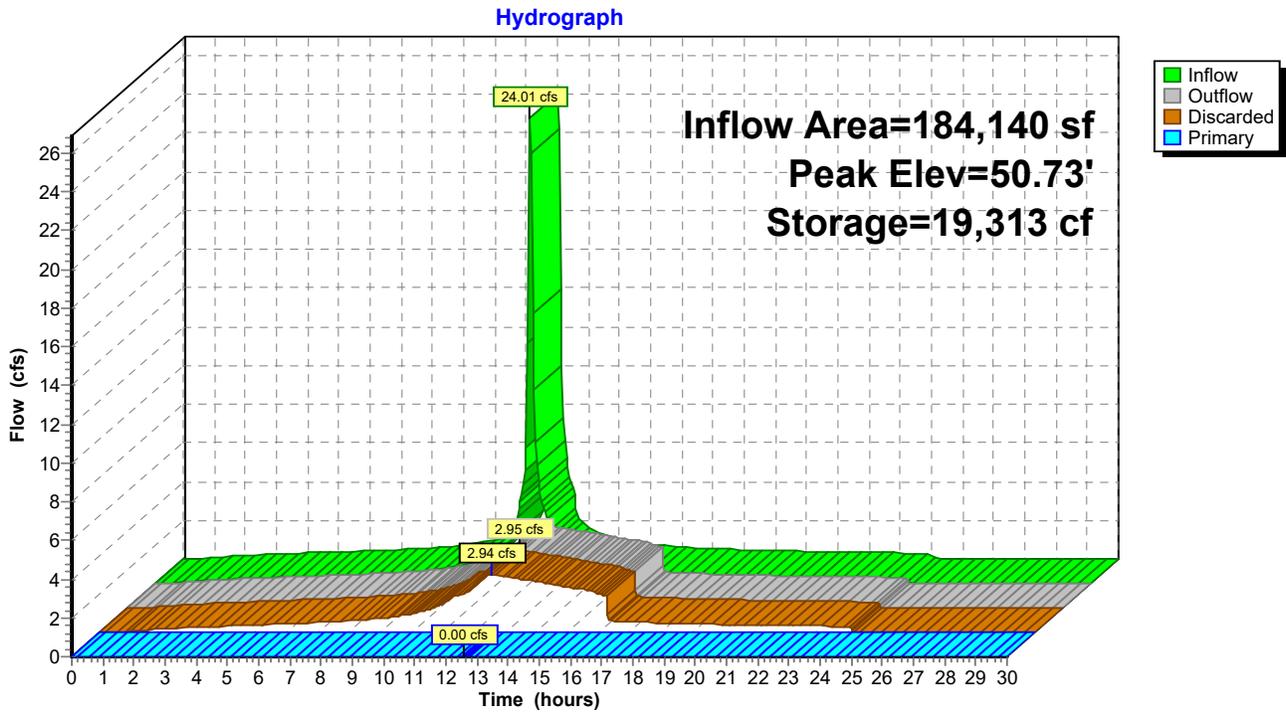
455 Chambers

2,091.4 cy Field

1,317.2 cy Stone



Pond P-105: SWMB P-105



Stage-Discharge for Pond P-105: SWMB P-105

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
49.00	0.00	0.00	0.00	51.60	10.32	3.49	6.83
49.05	1.90	1.90	0.00	51.65	11.15	3.52	7.63
49.10	1.93	1.93	0.00	51.70	12.01	3.55	8.46
49.15	1.96	1.96	0.00	51.75	12.90	3.58	9.32
49.20	1.99	1.99	0.00	51.80	13.82	3.61	10.21
49.25	2.02	2.02	0.00	51.85	14.76	3.64	11.12
49.30	2.05	2.05	0.00	51.90	15.73	3.67	12.06
49.35	2.09	2.09	0.00	51.95	16.72	3.70	13.02
49.40	2.12	2.12	0.00	52.00	17.74	3.73	14.00
49.45	2.15	2.15	0.00	52.05	18.78	3.77	15.01
49.50	2.18	2.18	0.00	52.10	19.84	3.80	16.04
49.55	2.21	2.21	0.00	52.15	20.92	3.83	17.09
49.60	2.24	2.24	0.00	52.20	22.03	3.86	18.17
49.65	2.27	2.27	0.00	52.25	23.15	3.89	19.26
49.70	2.30	2.30	0.00	52.30	24.30	3.92	20.38
49.75	2.33	2.33	0.00	52.35	25.47	3.95	21.51
49.80	2.37	2.37	0.00	52.40	26.65	3.98	22.67
49.85	2.40	2.40	0.00	52.45	27.86	4.01	23.84
49.90	2.43	2.43	0.00	52.50	29.08	4.05	25.04
49.95	2.46	2.46	0.00	52.55	30.32	4.08	26.25
50.00	2.49	2.49	0.00	52.60	31.58	4.11	27.48
50.05	2.52	2.52	0.00	52.65	32.86	4.14	28.72
50.10	2.55	2.55	0.00	52.70	34.16	4.17	29.99
50.15	2.58	2.58	0.00	52.75	35.47	4.20	31.27
50.20	2.61	2.61	0.00	52.80	36.79	4.23	32.56
50.25	2.65	2.65	0.00	52.85	38.14	4.26	33.88
50.30	2.68	2.68	0.00	52.90	39.50	4.29	35.20
50.35	2.71	2.71	0.00	52.95	40.87	4.33	36.55
50.40	2.74	2.74	0.00	53.00	42.27	4.36	37.91
50.45	2.77	2.77	0.00				
50.50	2.80	2.80	0.00				
50.55	2.83	2.83	0.00				
50.60	2.86	2.86	0.00				
50.65	2.89	2.89	0.00				
50.70	2.93	2.93	0.00				
50.75	2.96	2.96	0.01				
50.80	3.02	2.99	0.03				
50.85	3.08	3.02	0.07				
50.90	3.16	3.05	0.11				
50.95	3.25	3.08	0.17				
51.00	3.34	3.11	0.23				
51.05	3.59	3.14	0.44				
51.10	3.95	3.17	0.78				
51.15	4.39	3.21	1.18				
51.20	4.88	3.24	1.64				
51.25	5.42	3.27	2.15				
51.30	6.01	3.30	2.71				
51.35	6.63	3.33	3.30				
51.40	7.30	3.36	3.94				
51.45	8.01	3.39	4.61				
51.50	8.74	3.42	5.32				
51.55	9.51	3.45	6.06				

Stage-Area-Storage for Pond P-105: SWMB P-105

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.00	16,134	0	51.60	16,134	28,842
49.05	16,134	323	51.65	16,134	29,294
49.10	16,134	645	51.70	16,134	29,728
49.15	16,134	968	51.75	16,134	30,136
49.20	16,134	1,291	51.80	16,134	30,521
49.25	16,134	1,613	51.85	16,134	30,884
49.30	16,134	1,936	51.90	16,134	31,234
49.35	16,134	2,259	51.95	16,134	31,573
49.40	16,134	2,581	52.00	16,134	31,902
49.45	16,134	2,904	52.05	16,134	32,225
49.50	16,134	3,227	52.10	16,134	32,547
49.55	16,134	3,911	52.15	16,134	32,870
49.60	16,134	4,594	52.20	16,134	33,193
49.65	16,134	5,277	52.25	16,134	33,515
49.70	16,134	5,958	52.30	16,134	33,838
49.75	16,134	6,637	52.35	16,134	34,161
49.80	16,134	7,313	52.40	16,134	34,483
49.85	16,134	7,987	52.45	16,134	34,806
49.90	16,134	8,659	52.50	16,134	35,129
49.95	16,134	9,328	52.55	16,134	35,129
50.00	16,134	9,994	52.60	16,134	35,129
50.05	16,134	10,658	52.65	16,134	35,129
50.10	16,134	11,318	52.70	16,134	35,129
50.15	16,134	11,975	52.75	16,134	35,129
50.20	16,134	12,629	52.80	16,134	35,129
50.25	16,134	13,279	52.85	16,134	35,129
50.30	16,134	13,926	52.90	16,134	35,129
50.35	16,134	14,570	52.95	16,134	35,129
50.40	16,134	15,209	53.00	16,134	35,129
50.45	16,134	15,845			
50.50	16,134	16,477			
50.55	16,134	17,105			
50.60	16,134	17,728			
50.65	16,134	18,346			
50.70	16,134	18,959			
50.75	16,134	19,567			
50.80	16,134	20,170			
50.85	16,134	20,767			
50.90	16,134	21,359			
50.95	16,134	21,945			
51.00	16,134	22,525			
51.05	16,134	23,098			
51.10	16,134	23,666			
51.15	16,134	24,225			
51.20	16,134	24,776			
51.25	16,134	25,318			
51.30	16,134	25,851			
51.35	16,134	26,376			
51.40	16,134	26,891			
51.45	16,134	27,396			
51.50	16,134	27,891			
51.55	16,134	28,373			

Summary for Pond P-106: SWMB-106

Inflow Area = 60,202 sf, 78.09% Impervious, Inflow Depth = 3.72" for 10-yr event
 Inflow = 6.42 cfs @ 12.03 hrs, Volume= 18,654 cf
 Outflow = 5.00 cfs @ 12.08 hrs, Volume= 18,673 cf, Atten= 22%, Lag= 2.9 min
 Discarded = 0.51 cfs @ 12.08 hrs, Volume= 13,912 cf
 Primary = 4.49 cfs @ 12.08 hrs, Volume= 4,761 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 47.93' @ 12.08 hrs Surf.Area= 2,697 sf Storage= 3,000 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 24.9 min (837.2 - 812.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.00'	1,904 cf	28.17'W x 95.76'L x 2.33'H Field A 6,294 cf Overall - 1,533 cf Embedded = 4,760 cf x 40.0% Voids
#2A	46.50'	1,533 cf	ADS_StormTech SC-310 +Cap x 104 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 104 Chambers in 8 Rows
		3,437 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	47.50'	4.0' long x 5.00' rise Weir Wall 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.00'

Discarded OutFlow Max=0.51 cfs @ 12.08 hrs HW=47.91' (Free Discharge)

↑ **3=Exfiltration** (Controls 0.51 cfs)

Primary OutFlow Max=4.30 cfs @ 12.08 hrs HW=47.91' (Free Discharge)

↑ **1=Low Level Orifice** (Orifice Controls 0.77 cfs @ 3.92 fps)

↑ **2=Weir Wall** (Weir Controls 3.53 cfs @ 2.18 fps)

Pond P-106: SWMB-106 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

104 Chambers x 14.7 cf = 1,533.2 cf Chamber Storage

6,293.6 cf Field - 1,533.2 cf Chambers = 4,760.4 cf Stone x 40.0% Voids = 1,904.2 cf Stone Storage

Chamber Storage + Stone Storage = 3,437.3 cf = 0.079 af

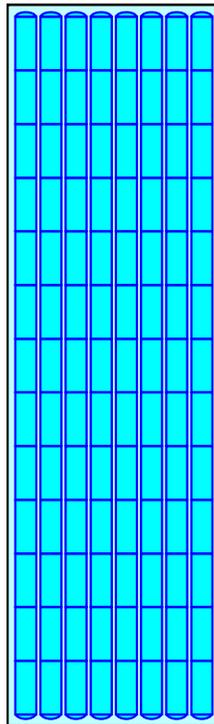
Overall Storage Efficiency = 54.6%

Overall System Size = 95.76' x 28.17' x 2.33'

104 Chambers

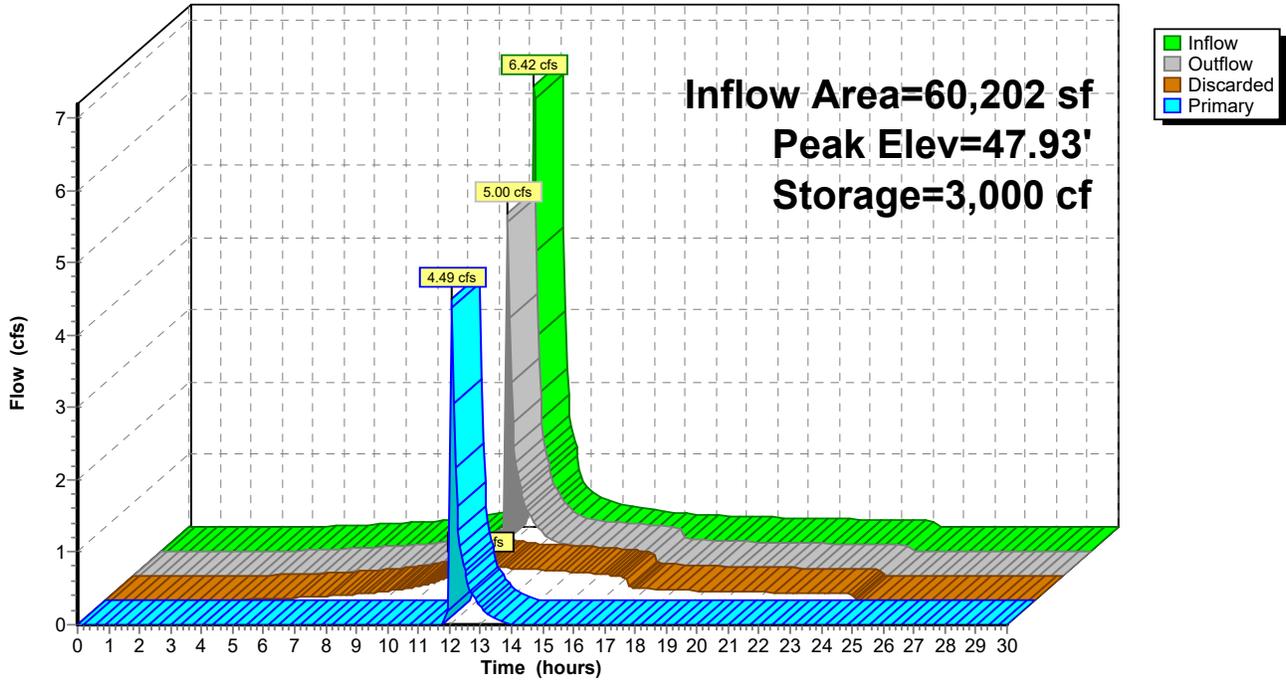
233.1 cy Field

176.3 cy Stone



Pond P-106: SWMB-106

Hydrograph



Stage-Discharge for Pond P-106: SWMB-106

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.00	0.00	0.00	0.00	51.20	101.49	0.85	100.64
46.10	0.32	0.32	0.00	51.30	105.57	0.86	104.70
46.20	0.33	0.33	0.00	51.40	109.69	0.87	108.81
46.30	0.34	0.34	0.00	51.50	113.85	0.88	112.97
46.40	0.35	0.35	0.00	51.60	118.06	0.89	117.16
46.50	0.36	0.36	0.00	51.70	122.31	0.91	121.40
46.60	0.37	0.37	0.00	51.80	126.59	0.92	125.68
46.70	0.39	0.39	0.00	51.90	130.92	0.93	129.99
46.80	0.40	0.40	0.00	52.00	135.28	0.94	134.34
46.90	0.41	0.41	0.00	52.10	139.67	0.95	138.72
47.00	0.42	0.42	0.00	52.20	144.10	0.96	143.14
47.10	0.46	0.43	0.03	52.30	148.55	0.97	147.59
47.20	0.55	0.44	0.11	52.40	153.04	0.98	152.06
47.30	0.68	0.45	0.23	52.50	157.56	0.99	156.57
47.40	0.82	0.46	0.36				
47.50	0.94	0.47	0.47				
47.60	1.45	0.48	0.97				
47.70	2.30	0.49	1.81				
47.80	3.37	0.50	2.87				
47.90	4.62	0.51	4.11				
48.00	6.03	0.52	5.51				
48.10	7.59	0.53	7.06				
48.20	9.28	0.54	8.74				
48.30	11.09	0.55	10.54				
48.40	13.02	0.56	12.46				
48.50	15.07	0.57	14.50				
48.60	17.22	0.58	16.64				
48.70	19.48	0.59	18.88				
48.80	21.83	0.60	21.23				
48.90	24.28	0.61	23.67				
49.00	26.82	0.62	26.20				
49.10	29.45	0.63	28.82				
49.20	32.17	0.65	31.53				
49.30	34.97	0.66	34.32				
49.40	37.86	0.67	37.19				
49.50	40.82	0.68	40.14				
49.60	43.86	0.69	43.18				
49.70	46.98	0.70	46.28				
49.80	50.17	0.71	49.46				
49.90	53.43	0.72	52.71				
50.00	56.76	0.73	56.03				
50.10	60.16	0.74	59.42				
50.20	63.62	0.75	62.87				
50.30	67.15	0.76	66.39				
50.40	70.74	0.77	69.97				
50.50	74.39	0.78	73.61				
50.60	78.10	0.79	77.31				
50.70	81.86	0.80	81.06				
50.80	85.69	0.81	84.87				
50.90	89.56	0.82	88.74				
51.00	93.49	0.83	92.66				
51.10	97.47	0.84	96.62				

Stage-Area-Storage for Pond P-106: SWMB-106

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.00	2,697	0	51.20	2,697	3,437
46.10	2,697	108	51.30	2,697	3,437
46.20	2,697	216	51.40	2,697	3,437
46.30	2,697	324	51.50	2,697	3,437
46.40	2,697	432	51.60	2,697	3,437
46.50	2,697	539	51.70	2,697	3,437
46.60	2,697	754	51.80	2,697	3,437
46.70	2,697	966	51.90	2,697	3,437
46.80	2,697	1,174	52.00	2,697	3,437
46.90	2,697	1,379	52.10	2,697	3,437
47.00	2,697	1,578	52.20	2,697	3,437
47.10	2,697	1,772	52.30	2,697	3,437
47.20	2,697	1,960	52.40	2,697	3,437
47.30	2,697	2,141	52.50	2,697	3,437
47.40	2,697	2,312			
47.50	2,697	2,473			
47.60	2,697	2,618			
47.70	2,697	2,745			
47.80	2,697	2,861			
47.90	2,697	2,970			
48.00	2,697	3,078			
48.10	2,697	3,186			
48.20	2,697	3,293			
48.30	2,697	3,401			
48.40	2,697	3,437			
48.50	2,697	3,437			
48.60	2,697	3,437			
48.70	2,697	3,437			
48.80	2,697	3,437			
48.90	2,697	3,437			
49.00	2,697	3,437			
49.10	2,697	3,437			
49.20	2,697	3,437			
49.30	2,697	3,437			
49.40	2,697	3,437			
49.50	2,697	3,437			
49.60	2,697	3,437			
49.70	2,697	3,437			
49.80	2,697	3,437			
49.90	2,697	3,437			
50.00	2,697	3,437			
50.10	2,697	3,437			
50.20	2,697	3,437			
50.30	2,697	3,437			
50.40	2,697	3,437			
50.50	2,697	3,437			
50.60	2,697	3,437			
50.70	2,697	3,437			
50.80	2,697	3,437			
50.90	2,697	3,437			
51.00	2,697	3,437			
51.10	2,697	3,437			

Summary for Pond P-107: SWMB P-107

Inflow Area = 90,871 sf, 92.92% Impervious, Inflow Depth = 4.47" for 10-yr event
 Inflow = 11.38 cfs @ 12.02 hrs, Volume= 33,818 cf
 Outflow = 11.39 cfs @ 12.06 hrs, Volume= 33,792 cf, Atten= 0%, Lag= 2.2 min
 Discarded = 0.92 cfs @ 12.06 hrs, Volume= 24,587 cf
 Primary = 10.47 cfs @ 12.06 hrs, Volume= 9,205 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 48.79' @ 12.06 hrs Surf.Area= 3,974 sf Storage= 5,089 cf

Plug-Flow detention time= 24.6 min calculated for 33,792 cf (100% of inflow)
 Center-of-Mass det. time= 24.0 min (801.6 - 777.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.10'	2,789 cf	41.50'W x 95.76'L x 2.33'H Field A 9,273 cf Overall - 2,300 cf Embedded = 6,973 cf x 40.0% Voids
#2A	46.60'	2,300 cf	ADS_StormTech SC-310 +Cap x 156 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 156 Chambers in 12 Rows
		5,089 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	48.00'	4.0' long x 5.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.10'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.40'

Discarded OutFlow Max=0.91 cfs @ 12.06 hrs HW=48.72' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 0.91 cfs)

Primary OutFlow Max=9.52 cfs @ 12.06 hrs HW=48.73' (Free Discharge)
 ↑ **1=Low Level Orifice** (Orifice Controls 1.15 cfs @ 5.86 fps)
 ↓ **2=Sharp-Crested Rectangular Weir** (Weir Controls 8.37 cfs @ 2.97 fps)

Pond P-107: SWMB P-107 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

12 Rows x 34.0" Wide + 6.0" Spacing x 11 + 12.0" Side Stone x 2 = 41.50' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

156 Chambers x 14.7 cf = 2,299.7 cf Chamber Storage

9,272.8 cf Field - 2,299.7 cf Chambers = 6,973.0 cf Stone x 40.0% Voids = 2,789.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,089.0 cf = 0.117 af

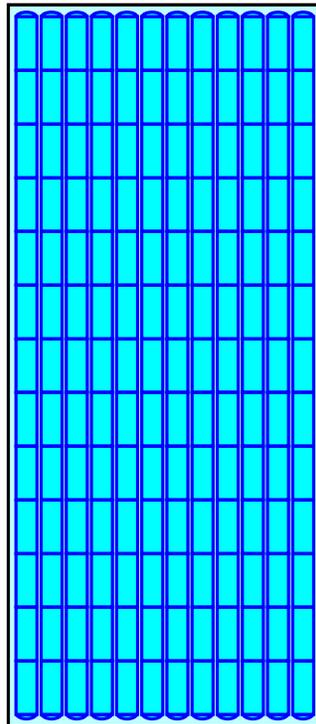
Overall Storage Efficiency = 54.9%

Overall System Size = 95.76' x 41.50' x 2.33'

156 Chambers

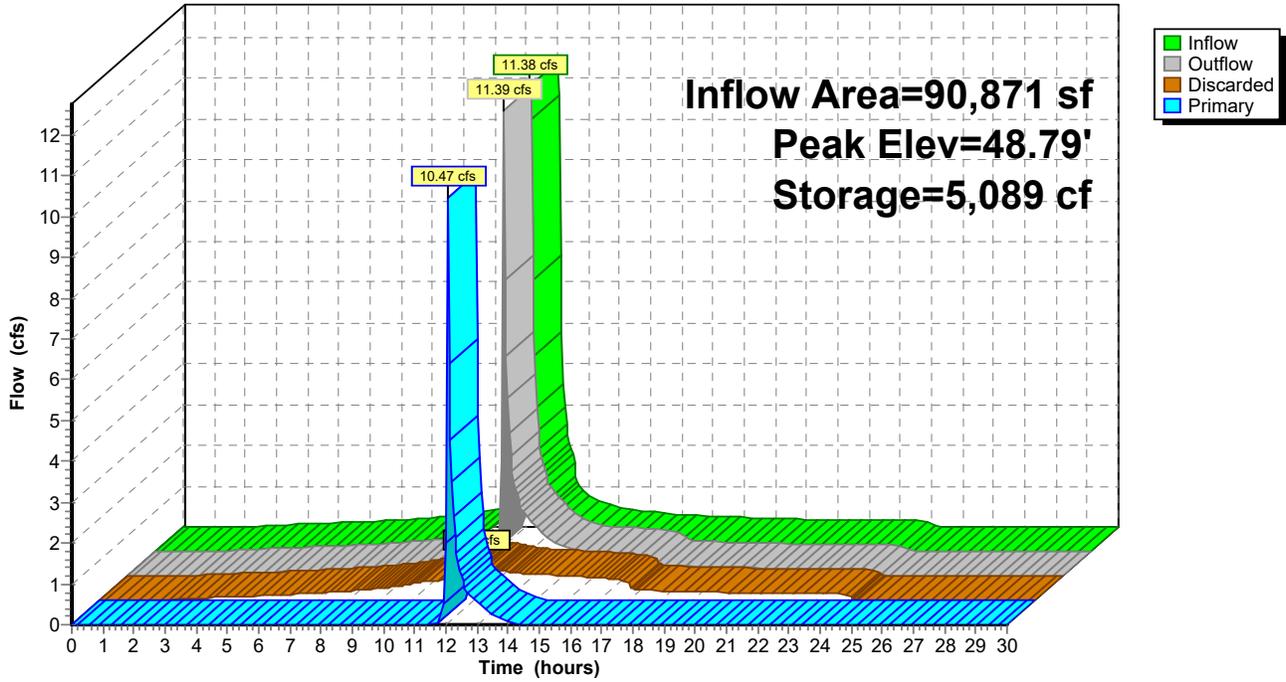
343.4 cy Field

258.3 cy Stone



Pond P-107: SWMB P-107

Hydrograph



Stage-Discharge for Pond P-107: SWMB P-107

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.10	0.00	0.00	0.00	51.30	86.34	1.35	85.00
46.20	0.48	0.48	0.00	51.40	90.22	1.36	88.86
46.30	0.49	0.49	0.00	51.50	94.15	1.38	92.77
46.40	0.51	0.51	0.00	51.60	98.14	1.40	96.74
46.50	0.53	0.53	0.00	51.70	102.17	1.41	100.76
46.60	0.55	0.55	0.00	51.80	106.25	1.43	104.82
46.70	0.56	0.56	0.00	51.90	110.37	1.45	108.93
46.80	0.58	0.58	0.00	52.00	114.54	1.47	113.08
46.90	0.60	0.60	0.00	52.10	118.76	1.48	117.27
47.00	0.61	0.61	0.00	52.20	123.01	1.50	121.51
47.10	0.66	0.63	0.03	52.30	127.30	1.52	125.78
47.20	0.76	0.65	0.11	52.40	131.63	1.53	130.10
47.30	0.89	0.66	0.23	52.50	135.99	1.55	134.44
47.40	1.04	0.68	0.36	52.60	140.39	1.57	138.83
47.50	1.17	0.70	0.47	52.70	144.83	1.58	143.24
47.60	1.27	0.72	0.56	52.80	149.29	1.60	147.69
47.70	1.37	0.73	0.63	52.90	153.78	1.62	152.16
47.80	1.45	0.75	0.70	53.00	158.30	1.64	156.67
47.90	1.53	0.77	0.76				
48.00	1.60	0.78	0.82				
48.10	2.09	0.80	1.29				
48.20	2.92	0.82	2.10				
48.30	3.97	0.83	3.14				
48.40	5.21	0.85	4.36				
48.50	6.62	0.87	5.75				
48.60	8.17	0.89	7.28				
48.70	9.86	0.90	8.95				
48.80	11.67	0.92	10.75				
48.90	13.60	0.94	12.66				
49.00	15.64	0.95	14.69				
49.10	17.80	0.97	16.83				
49.20	20.05	0.99	19.06				
49.30	22.41	1.01	21.40				
49.40	24.86	1.02	23.84				
49.50	27.40	1.04	26.36				
49.60	30.04	1.06	28.98				
49.70	32.76	1.07	31.69				
49.80	35.56	1.09	34.47				
49.90	38.45	1.11	37.34				
50.00	41.42	1.12	40.29				
50.10	44.46	1.14	43.32				
50.20	47.58	1.16	46.43				
50.30	50.78	1.18	49.60				
50.40	54.04	1.19	52.85				
50.50	57.38	1.21	56.17				
50.60	60.78	1.23	59.55				
50.70	64.25	1.24	63.00				
50.80	67.78	1.26	66.52				
50.90	71.37	1.28	70.10				
51.00	75.03	1.29	73.74				
51.10	78.74	1.31	77.43				
51.20	82.51	1.33	81.19				

Stage-Area-Storage for Pond P-107: SWMB P-107

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.10	3,974	0	51.30	3,974	5,089
46.20	3,974	159	51.40	3,974	5,089
46.30	3,974	318	51.50	3,974	5,089
46.40	3,974	477	51.60	3,974	5,089
46.50	3,974	636	51.70	3,974	5,089
46.60	3,974	795	51.80	3,974	5,089
46.70	3,974	1,114	51.90	3,974	5,089
46.80	3,974	1,429	52.00	3,974	5,089
46.90	3,974	1,739	52.10	3,974	5,089
47.00	3,974	2,042	52.20	3,974	5,089
47.10	3,974	2,339	52.30	3,974	5,089
47.20	3,974	2,627	52.40	3,974	5,089
47.30	3,974	2,906	52.50	3,974	5,089
47.40	3,974	3,174	52.60	3,974	5,089
47.50	3,974	3,428	52.70	3,974	5,089
47.60	3,974	3,667	52.80	3,974	5,089
47.70	3,974	3,881	52.90	3,974	5,089
47.80	3,974	4,069	53.00	3,974	5,089
47.90	3,974	4,240			
48.00	3,974	4,400			
48.10	3,974	4,559			
48.20	3,974	4,718			
48.30	3,974	4,877			
48.40	3,974	5,036			
48.50	3,974	5,089			
48.60	3,974	5,089			
48.70	3,974	5,089			
48.80	3,974	5,089			
48.90	3,974	5,089			
49.00	3,974	5,089			
49.10	3,974	5,089			
49.20	3,974	5,089			
49.30	3,974	5,089			
49.40	3,974	5,089			
49.50	3,974	5,089			
49.60	3,974	5,089			
49.70	3,974	5,089			
49.80	3,974	5,089			
49.90	3,974	5,089			
50.00	3,974	5,089			
50.10	3,974	5,089			
50.20	3,974	5,089			
50.30	3,974	5,089			
50.40	3,974	5,089			
50.50	3,974	5,089			
50.60	3,974	5,089			
50.70	3,974	5,089			
50.80	3,974	5,089			
50.90	3,974	5,089			
51.00	3,974	5,089			
51.10	3,974	5,089			
51.20	3,974	5,089			

Summary for Pond P-108: SWMB P-108

Inflow Area = 370,807 sf, 93.15% Impervious, Inflow Depth = 0.86" for 10-yr event
 Inflow = 16.39 cfs @ 12.07 hrs, Volume= 26,628 cf
 Outflow = 0.14 cfs @ 15.40 hrs, Volume= 10,314 cf, Atten= 99%, Lag= 200.2 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12
 Secondary = 0.14 cfs @ 15.40 hrs, Volume= 10,314 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 46.00' @ 15.40 hrs Surf.Area= 21,770 sf Storage= 20,809 cf

Plug-Flow detention time= 480.1 min calculated for 10,297 cf (39% of inflow)
 Center-of-Mass det. time= 386.1 min (1,156.3 - 770.2)

Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	153,555 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	20,005	0	0
46.00	21,777	20,891	20,891
47.00	23,610	22,694	43,585
48.00	25,502	24,556	68,141
49.00	27,451	26,477	94,617
50.00	29,456	28,454	123,071
51.00	31,513	30,485	153,555

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	49.00'	24.0" x 36.0" Horiz. OCS-203 Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	48.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#4	Secondary	45.00'	0.270 in/hr Underdrain over Surface area

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)

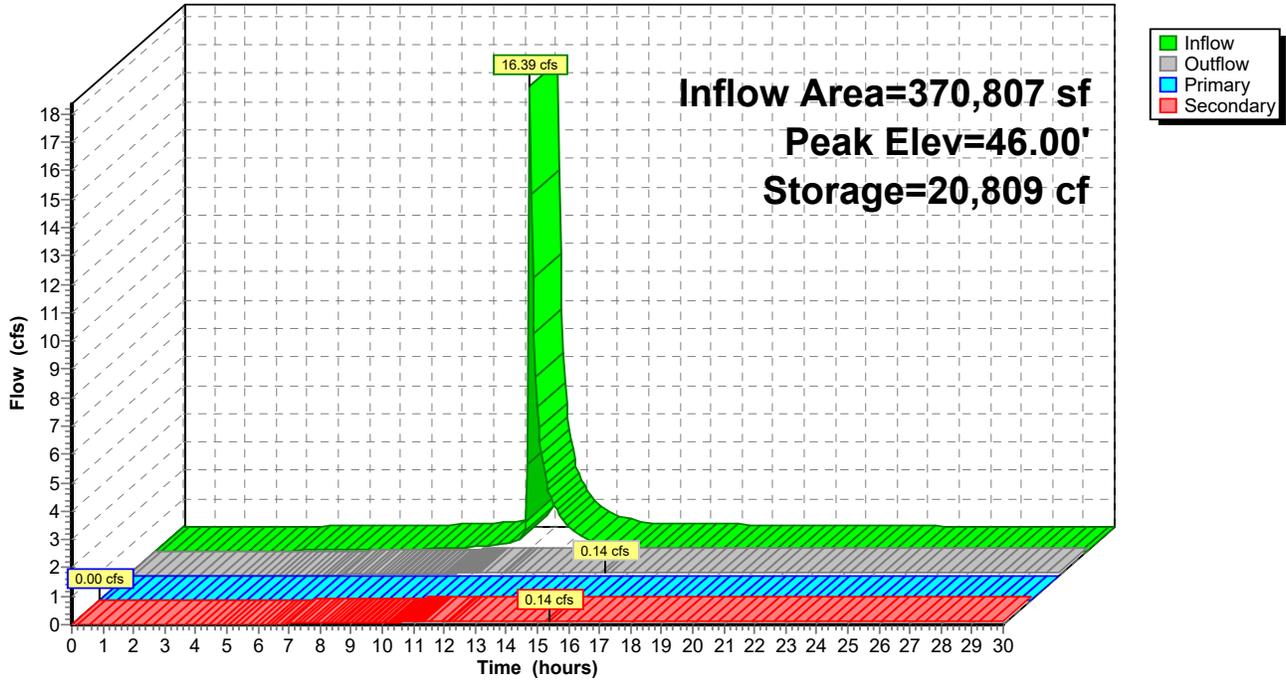
- 1=Overflow Spillway (Controls 0.00 cfs)
- 2=OCS-203 Grate (Controls 0.00 cfs)
- 3=Low Level Orifice (Controls 0.00 cfs)

Secondary OutFlow Max=0.14 cfs @ 15.40 hrs HW=46.00' (Free Discharge)

- 4=Underdrain (Exfiltration Controls 0.14 cfs)

Pond P-108: SWMB P-108

Hydrograph



Stage-Discharge for Pond P-108: SWMB P-108

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
45.00	0.00	0.00	0.00	50.20	35.43	35.25	0.19
45.10	0.13	0.00	0.13	50.30	38.86	38.67	0.19
45.20	0.13	0.00	0.13	50.40	42.80	42.61	0.19
45.30	0.13	0.00	0.13	50.50	47.37	47.18	0.19
45.40	0.13	0.00	0.13	50.60	52.54	52.35	0.19
45.50	0.13	0.00	0.13	50.70	57.78	57.58	0.19
45.60	0.13	0.00	0.13	50.80	63.41	63.21	0.19
45.70	0.13	0.00	0.13	50.90	69.43	69.24	0.20
45.80	0.13	0.00	0.13	51.00	75.85	75.66	0.20
45.90	0.13	0.00	0.13				
46.00	0.14	0.00	0.14				
46.10	0.14	0.00	0.14				
46.20	0.14	0.00	0.14				
46.30	0.14	0.00	0.14				
46.40	0.14	0.00	0.14				
46.50	0.14	0.00	0.14				
46.60	0.14	0.00	0.14				
46.70	0.14	0.00	0.14				
46.80	0.15	0.00	0.15				
46.90	0.15	0.00	0.15				
47.00	0.15	0.00	0.15				
47.10	0.15	0.00	0.15				
47.20	0.15	0.00	0.15				
47.30	0.15	0.00	0.15				
47.40	0.15	0.00	0.15				
47.50	0.15	0.00	0.15				
47.60	0.15	0.00	0.15				
47.70	0.16	0.00	0.16				
47.80	0.16	0.00	0.16				
47.90	0.16	0.00	0.16				
48.00	0.16	0.00	0.16				
48.10	0.19	0.03	0.16				
48.20	0.27	0.11	0.16				
48.30	0.39	0.23	0.16				
48.40	0.53	0.36	0.16				
48.50	0.64	0.47	0.17				
48.60	0.73	0.56	0.17				
48.70	0.80	0.63	0.17				
48.80	0.87	0.70	0.17				
48.90	0.93	0.76	0.17				
49.00	0.99	0.82	0.17				
49.10	2.08	1.91	0.17				
49.20	4.02	3.85	0.17				
49.30	6.52	6.34	0.18				
49.40	9.46	9.29	0.18				
49.50	12.80	12.62	0.18				
49.60	16.48	16.30	0.18				
49.70	20.47	20.29	0.18				
49.80	24.76	24.58	0.18				
49.90	28.80	28.62	0.18				
50.00	30.32	30.14	0.18				
50.10	32.56	32.37	0.19				

Stage-Area-Storage for Pond P-108: SWMB P-108

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
45.00	20,005	0	50.20	29,867	129,003
45.10	20,182	2,009	50.30	30,073	132,000
45.20	20,359	4,036	50.40	30,279	135,017
45.30	20,537	6,081	50.50	30,485	138,056
45.40	20,714	8,144	50.60	30,690	141,114
45.50	20,891	10,224	50.70	30,896	144,194
45.60	21,068	12,322	50.80	31,102	147,294
45.70	21,245	14,438	50.90	31,307	150,414
45.80	21,423	16,571	51.00	31,513	153,555
45.90	21,600	18,722			
46.00	21,777	20,891			
46.10	21,960	23,078			
46.20	22,144	25,283			
46.30	22,327	27,507			
46.40	22,510	29,748			
46.50	22,694	32,009			
46.60	22,877	34,287			
46.70	23,060	36,584			
46.80	23,243	38,899			
46.90	23,427	41,233			
47.00	23,610	43,585			
47.10	23,799	45,955			
47.20	23,988	48,344			
47.30	24,178	50,753			
47.40	24,367	53,180			
47.50	24,556	55,626			
47.60	24,745	58,091			
47.70	24,934	60,575			
47.80	25,124	63,078			
47.90	25,313	65,600			
48.00	25,502	68,141			
48.10	25,697	70,700			
48.20	25,892	73,280			
48.30	26,087	75,879			
48.40	26,282	78,497			
48.50	26,477	81,135			
48.60	26,671	83,793			
48.70	26,866	86,469			
48.80	27,061	89,166			
48.90	27,256	91,882			
49.00	27,451	94,617			
49.10	27,652	97,372			
49.20	27,852	100,147			
49.30	28,052	102,943			
49.40	28,253	105,758			
49.50	28,454	108,593			
49.60	28,654	111,449			
49.70	28,855	114,324			
49.80	29,055	117,219			
49.90	29,255	120,135			
50.00	29,456	123,071			
50.10	29,662	126,026			

Summary for Pond P-109: SWMB P-109

Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 3.39" for 10-yr event
 Inflow = 4.45 cfs @ 12.33 hrs, Volume= 57,493 cf
 Outflow = 3.24 cfs @ 13.52 hrs, Volume= 57,493 cf, Atten= 27%, Lag= 71.4 min
 Discarded = 1.39 cfs @ 13.52 hrs, Volume= 50,366 cf
 Primary = 1.85 cfs @ 13.52 hrs, Volume= 7,128 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 44.24' @ 13.52 hrs Surf.Area= 8,160 sf Storage= 15,772 cf

Plug-Flow detention time= 85.8 min calculated for 57,493 cf (100% of inflow)
 Center-of-Mass det. time= 85.7 min (914.1 - 828.3)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	26,865 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	5,939	0	0
43.00	6,891	6,415	6,415
44.00	7,900	7,396	13,811
45.00	8,966	8,433	22,244
45.50	9,519	4,621	26,865

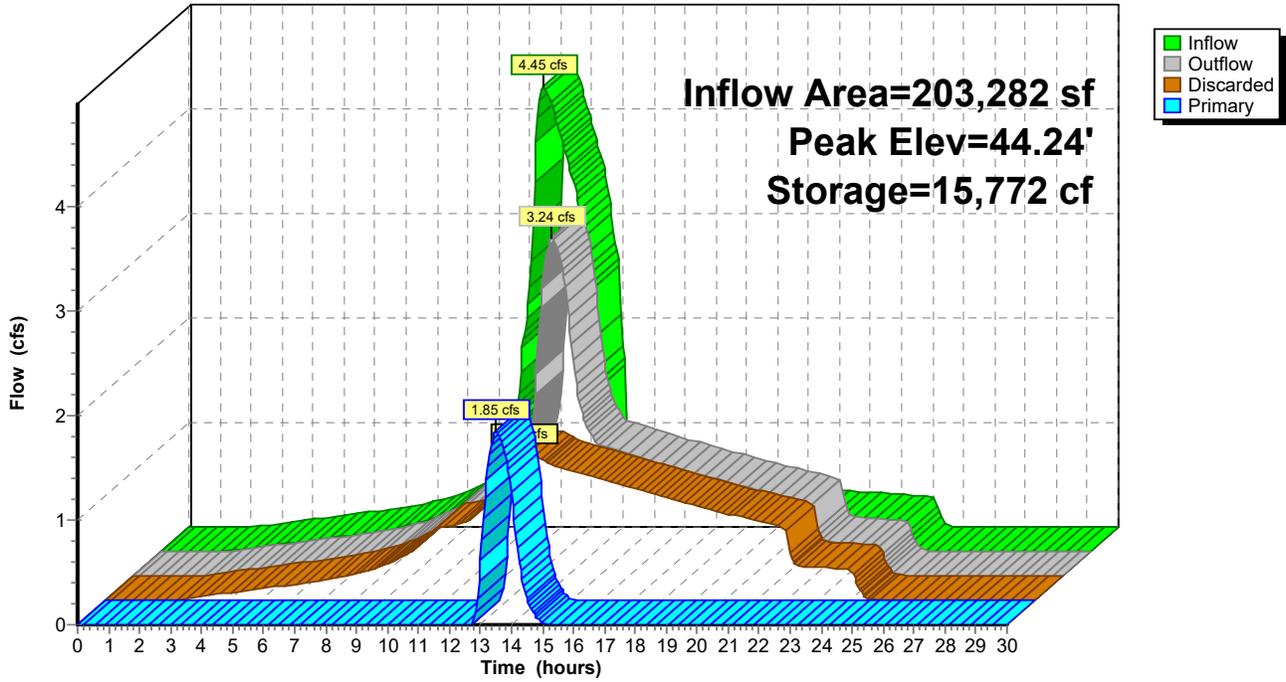
Device	Routing	Invert	Outlet Devices
#1	Primary	44.50'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	43.80'	1.0' long + 4.0 ' SideZ x 8.0' breadth Outlet Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Discarded	42.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 38.00'

Discarded OutFlow Max=1.39 cfs @ 13.52 hrs HW=44.24' (Free Discharge)
 ↑**3=Exfiltration** (Controls 1.39 cfs)

Primary OutFlow Max=1.84 cfs @ 13.52 hrs HW=44.24' (Free Discharge)
 ↑**1=Overflow Spillway** (Controls 0.00 cfs)
 ↑**2=Outlet Spillway** (Weir Controls 1.84 cfs @ 1.50 fps)

Pond P-109: SWMB P-109

Hydrograph



Stage-Discharge for Pond P-109: SWMB P-109

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
42.00	0.00	0.00	0.00	44.60	9.15	1.51	7.64
42.05	0.70	0.70	0.00	44.65	10.83	1.53	9.30
42.10	0.72	0.72	0.00	44.70	12.72	1.55	11.17
42.15	0.73	0.73	0.00	44.75	14.86	1.57	13.29
42.20	0.74	0.74	0.00	44.80	17.22	1.58	15.63
42.25	0.76	0.76	0.00	44.85	19.81	1.60	18.21
42.30	0.77	0.77	0.00	44.90	22.64	1.62	21.02
42.35	0.79	0.79	0.00	44.95	25.73	1.64	24.10
42.40	0.80	0.80	0.00	45.00	29.08	1.66	27.43
42.45	0.82	0.82	0.00	45.05	32.65	1.67	30.97
42.50	0.83	0.83	0.00	45.10	36.47	1.69	34.78
42.55	0.85	0.85	0.00	45.15	40.29	1.71	38.58
42.60	0.86	0.86	0.00	45.20	44.31	1.73	42.58
42.65	0.88	0.88	0.00	45.25	48.53	1.75	46.78
42.70	0.89	0.89	0.00	45.30	52.95	1.77	51.18
42.75	0.91	0.91	0.00	45.35	57.56	1.78	55.78
42.80	0.92	0.92	0.00	45.40	62.38	1.80	60.58
42.85	0.94	0.94	0.00	45.45	67.46	1.82	65.64
42.90	0.95	0.95	0.00	45.50	72.76	1.84	70.92
42.95	0.97	0.97	0.00				
43.00	0.98	0.98	0.00				
43.05	1.00	1.00	0.00				
43.10	1.01	1.01	0.00				
43.15	1.03	1.03	0.00				
43.20	1.04	1.04	0.00				
43.25	1.06	1.06	0.00				
43.30	1.08	1.08	0.00				
43.35	1.09	1.09	0.00				
43.40	1.11	1.11	0.00				
43.45	1.12	1.12	0.00				
43.50	1.14	1.14	0.00				
43.55	1.16	1.16	0.00				
43.60	1.17	1.17	0.00				
43.65	1.19	1.19	0.00				
43.70	1.21	1.21	0.00				
43.75	1.22	1.22	0.00				
43.80	1.24	1.24	0.00				
43.85	1.29	1.26	0.03				
43.90	1.37	1.27	0.10				
43.95	1.50	1.29	0.21				
44.00	1.66	1.31	0.36				
44.05	1.88	1.32	0.55				
44.10	2.14	1.34	0.80				
44.15	2.46	1.36	1.10				
44.20	2.84	1.37	1.47				
44.25	3.29	1.39	1.90				
44.30	3.82	1.41	2.41				
44.35	4.42	1.43	2.99				
44.40	5.11	1.44	3.66				
44.45	5.81	1.46	4.35				
44.50	6.59	1.48	5.11				
44.55	7.72	1.50	6.22				

Stage-Area-Storage for Pond P-109: SWMB P-109

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
42.00	5,939	0	44.60	8,540	18,742
42.05	5,987	298	44.65	8,593	19,171
42.10	6,034	599	44.70	8,646	19,602
42.15	6,082	902	44.75	8,700	20,035
42.20	6,129	1,207	44.80	8,753	20,472
42.25	6,177	1,515	44.85	8,806	20,911
42.30	6,225	1,825	44.90	8,859	21,352
42.35	6,272	2,137	44.95	8,913	21,797
42.40	6,320	2,452	45.00	8,966	22,244
42.45	6,367	2,769	45.05	9,021	22,693
42.50	6,415	3,089	45.10	9,077	23,146
42.55	6,463	3,410	45.15	9,132	23,601
42.60	6,510	3,735	45.20	9,187	24,059
42.65	6,558	4,061	45.25	9,243	24,520
42.70	6,605	4,391	45.30	9,298	24,983
42.75	6,653	4,722	45.35	9,353	25,449
42.80	6,701	5,056	45.40	9,408	25,918
42.85	6,748	5,392	45.45	9,464	26,390
42.90	6,796	5,731	45.50	9,519	26,865
42.95	6,843	6,072			
43.00	6,891	6,415			
43.05	6,941	6,761			
43.10	6,992	7,109			
43.15	7,042	7,460			
43.20	7,093	7,813			
43.25	7,143	8,169			
43.30	7,194	8,528			
43.35	7,244	8,889			
43.40	7,295	9,252			
43.45	7,345	9,618			
43.50	7,396	9,987			
43.55	7,446	10,358			
43.60	7,496	10,731			
43.65	7,547	11,107			
43.70	7,597	11,486			
43.75	7,648	11,867			
43.80	7,698	12,251			
43.85	7,749	12,637			
43.90	7,799	13,026			
43.95	7,850	13,417			
44.00	7,900	13,811			
44.05	7,953	14,207			
44.10	8,007	14,606			
44.15	8,060	15,007			
44.20	8,113	15,412			
44.25	8,167	15,819			
44.30	8,220	16,228			
44.35	8,273	16,641			
44.40	8,326	17,056			
44.45	8,380	17,473			
44.50	8,433	17,894			
44.55	8,486	18,317			

Summary for Pond SB-LS: SB-LS

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 0.59" for 10-yr event
 Inflow = 0.17 cfs @ 13.06 hrs, Volume= 2,475 cf
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 43.38' @ 30.00 hrs Surf.Area= 1,686 sf Storage= 2,475 cf

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

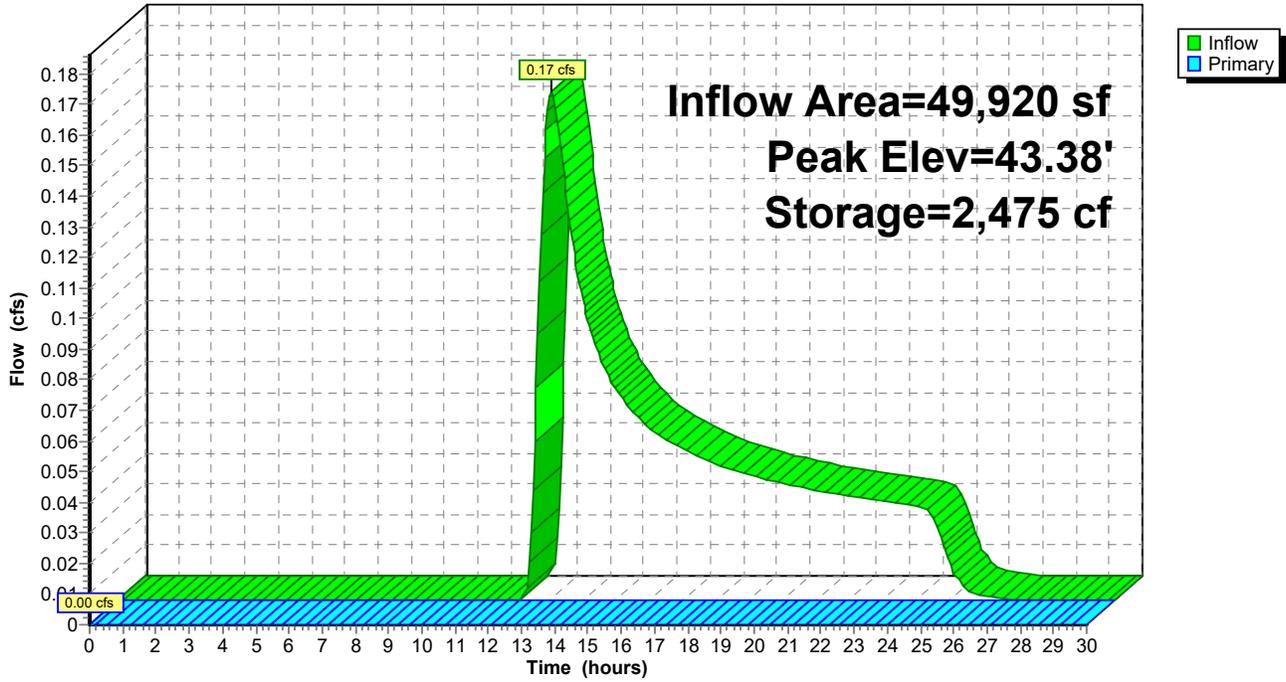
Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	3,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
40.50	290	0	0
41.00	416	177	177
42.00	741	579	755
43.00	1,489	1,115	1,870
43.50	1,747	809	2,679
44.00	2,020	942	3,621

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	50.0' long + 3.0 ' SideZ x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=40.50' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond SB-LS: SB-LS

Hydrograph



Stage-Discharge for Pond SB-LS: SB-LS

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
40.50	0.00	41.54	0.00	42.58	0.00	43.62	4.95
40.52	0.00	41.56	0.00	42.60	0.00	43.64	6.25
40.54	0.00	41.58	0.00	42.62	0.00	43.66	7.64
40.56	0.00	41.60	0.00	42.64	0.00	43.68	9.13
40.58	0.00	41.62	0.00	42.66	0.00	43.70	10.70
40.60	0.00	41.64	0.00	42.68	0.00	43.72	12.43
40.62	0.00	41.66	0.00	42.70	0.00	43.74	14.26
40.64	0.00	41.68	0.00	42.72	0.00	43.76	16.19
40.66	0.00	41.70	0.00	42.74	0.00	43.78	18.21
40.68	0.00	41.72	0.00	42.76	0.00	43.80	20.34
40.70	0.00	41.74	0.00	42.78	0.00	43.82	22.55
40.72	0.00	41.76	0.00	42.80	0.00	43.84	24.86
40.74	0.00	41.78	0.00	42.82	0.00	43.86	27.27
40.76	0.00	41.80	0.00	42.84	0.00	43.88	29.77
40.78	0.00	41.82	0.00	42.86	0.00	43.90	32.36
40.80	0.00	41.84	0.00	42.88	0.00	43.92	35.11
40.82	0.00	41.86	0.00	42.90	0.00	43.94	37.97
40.84	0.00	41.88	0.00	42.92	0.00	43.96	40.93
40.86	0.00	41.90	0.00	42.94	0.00	43.98	43.99
40.88	0.00	41.92	0.00	42.96	0.00	44.00	47.16
40.90	0.00	41.94	0.00	42.98	0.00		
40.92	0.00	41.96	0.00	43.00	0.00		
40.94	0.00	41.98	0.00	43.02	0.00		
40.96	0.00	42.00	0.00	43.04	0.00		
40.98	0.00	42.02	0.00	43.06	0.00		
41.00	0.00	42.04	0.00	43.08	0.00		
41.02	0.00	42.06	0.00	43.10	0.00		
41.04	0.00	42.08	0.00	43.12	0.00		
41.06	0.00	42.10	0.00	43.14	0.00		
41.08	0.00	42.12	0.00	43.16	0.00		
41.10	0.00	42.14	0.00	43.18	0.00		
41.12	0.00	42.16	0.00	43.20	0.00		
41.14	0.00	42.18	0.00	43.22	0.00		
41.16	0.00	42.20	0.00	43.24	0.00		
41.18	0.00	42.22	0.00	43.26	0.00		
41.20	0.00	42.24	0.00	43.28	0.00		
41.22	0.00	42.26	0.00	43.30	0.00		
41.24	0.00	42.28	0.00	43.32	0.00		
41.26	0.00	42.30	0.00	43.34	0.00		
41.28	0.00	42.32	0.00	43.36	0.00		
41.30	0.00	42.34	0.00	43.38	0.00		
41.32	0.00	42.36	0.00	43.40	0.00		
41.34	0.00	42.38	0.00	43.42	0.00		
41.36	0.00	42.40	0.00	43.44	0.00		
41.38	0.00	42.42	0.00	43.46	0.00		
41.40	0.00	42.44	0.00	43.48	0.00		
41.42	0.00	42.46	0.00	43.50	0.00		
41.44	0.00	42.48	0.00	43.52	0.34		
41.46	0.00	42.50	0.00	43.54	0.95		
41.48	0.00	42.52	0.00	43.56	1.75		
41.50	0.00	42.54	0.00	43.58	2.69		
41.52	0.00	42.56	0.00	43.60	3.77		

Stage-Area-Storage for Pond SB-LS: SB-LS

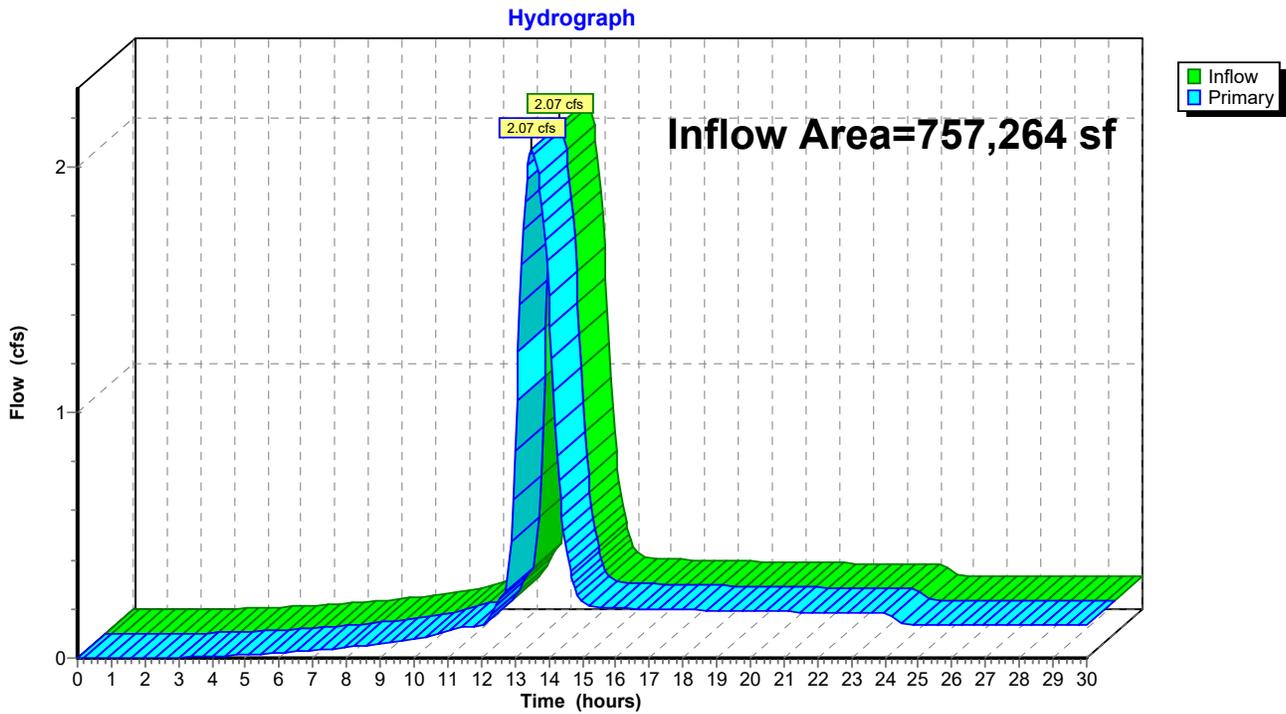
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
40.50	290	0	43.10	1,541	2,021
40.55	303	15	43.15	1,566	2,099
40.60	315	30	43.20	1,592	2,178
40.65	328	46	43.25	1,618	2,258
40.70	340	63	43.30	1,644	2,340
40.75	353	80	43.35	1,670	2,423
40.80	366	98	43.40	1,695	2,507
40.85	378	117	43.45	1,721	2,592
40.90	391	136	43.50	1,747	2,679
40.95	403	156	43.55	1,774	2,767
41.00	416	177	43.60	1,802	2,856
41.05	432	198	43.65	1,829	2,947
41.10	449	220	43.70	1,856	3,039
41.15	465	243	43.75	1,884	3,133
41.20	481	266	43.80	1,911	3,228
41.25	497	291	43.85	1,938	3,324
41.30	513	316	43.90	1,965	3,421
41.35	530	342	43.95	1,993	3,520
41.40	546	369	44.00	2,020	3,621
41.45	562	397			
41.50	579	425			
41.55	595	454			
41.60	611	485			
41.65	627	516			
41.70	644	547			
41.75	660	580			
41.80	676	613			
41.85	692	648			
41.90	708	683			
41.95	725	718			
42.00	741	755			
42.05	778	793			
42.10	816	833			
42.15	853	875			
42.20	891	918			
42.25	928	964			
42.30	965	1,011			
42.35	1,003	1,060			
42.40	1,040	1,111			
42.45	1,078	1,164			
42.50	1,115	1,219			
42.55	1,152	1,276			
42.60	1,190	1,334			
42.65	1,227	1,395			
42.70	1,265	1,457			
42.75	1,302	1,521			
42.80	1,339	1,587			
42.85	1,377	1,655			
42.90	1,414	1,725			
42.95	1,452	1,796			
43.00	1,489	1,870			
43.05	1,515	1,945			

Summary for Link DP-1: Wetlands WA2 - WA12

Inflow Area = 757,264 sf, 63.15% Impervious, Inflow Depth > 0.32" for 10-yr event
Inflow = 2.07 cfs @ 13.52 hrs, Volume= 20,197 cf
Primary = 2.07 cfs @ 13.52 hrs, Volume= 20,197 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA12



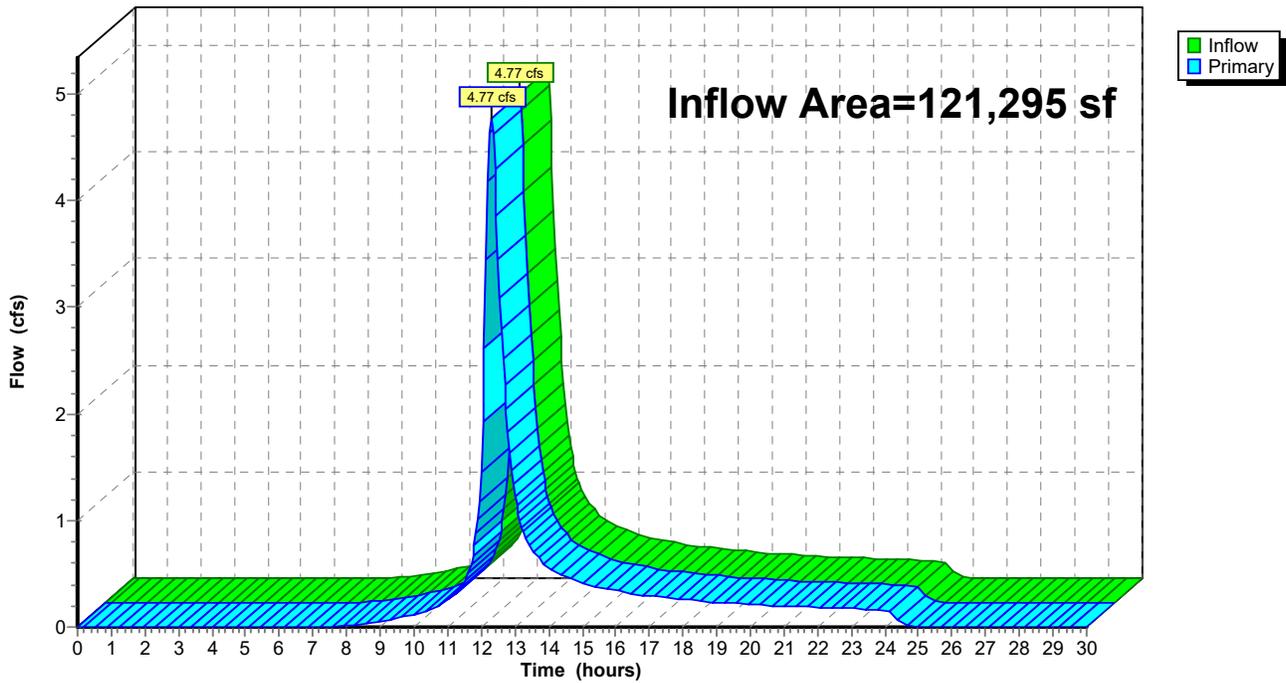
Summary for Link DP-2: Frontage Road

Inflow Area = 121,295 sf, 29.98% Impervious, Inflow Depth = 2.58" for 10-yr event
Inflow = 4.77 cfs @ 12.30 hrs, Volume= 26,075 cf
Primary = 4.77 cfs @ 12.30 hrs, Volume= 26,075 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-2: Frontage Road

Hydrograph



Summary for Subcatchment PDA-101: PDA-101

Runoff = 5.23 cfs @ 12.24 hrs, Volume= 25,926 cf, Depth= 3.17"
 Routed to Pond P-101 : SWMB P-101

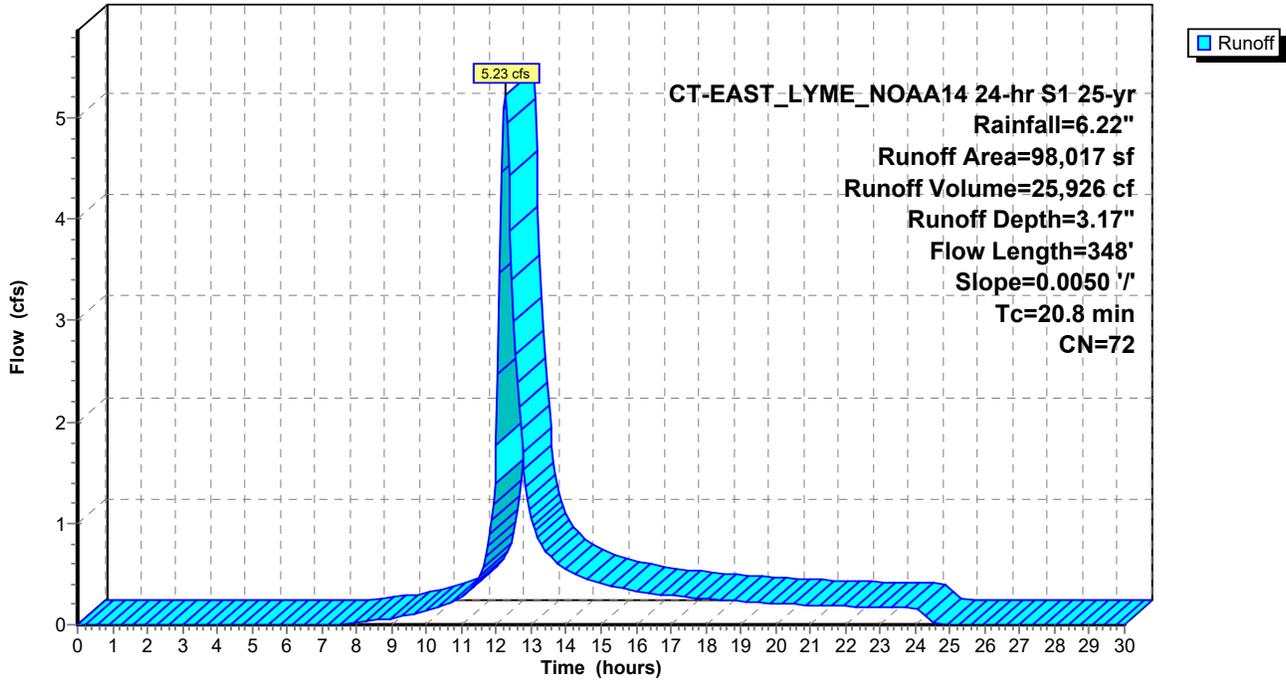
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
15,098	55	Woods, Good, HSG B
28,559	48	Brush, Good, HSG B
12,892	61	>75% Grass cover, Good, HSG B
41,468	98	Paved parking, HSG B
98,017	72	Weighted Average
56,549		57.69% Pervious Area
41,468		42.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0050	0.06		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.40"
6.4	190	0.0050	0.49		Shallow Concentrated Flow, Brush Short Grass Pasture Kv= 7.0 fps
0.6	108	0.0050	3.21	2.52	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
20.8	348	Total			

Subcatchment PDA-101: PDA-101

Hydrograph



Summary for Subcatchment PDA-102: PDA-102

Runoff = 12.19 cfs @ 12.05 hrs, Volume= 39,528 cf, Depth= 5.40"
 Routed to Pond P-102 : SWMB P-102

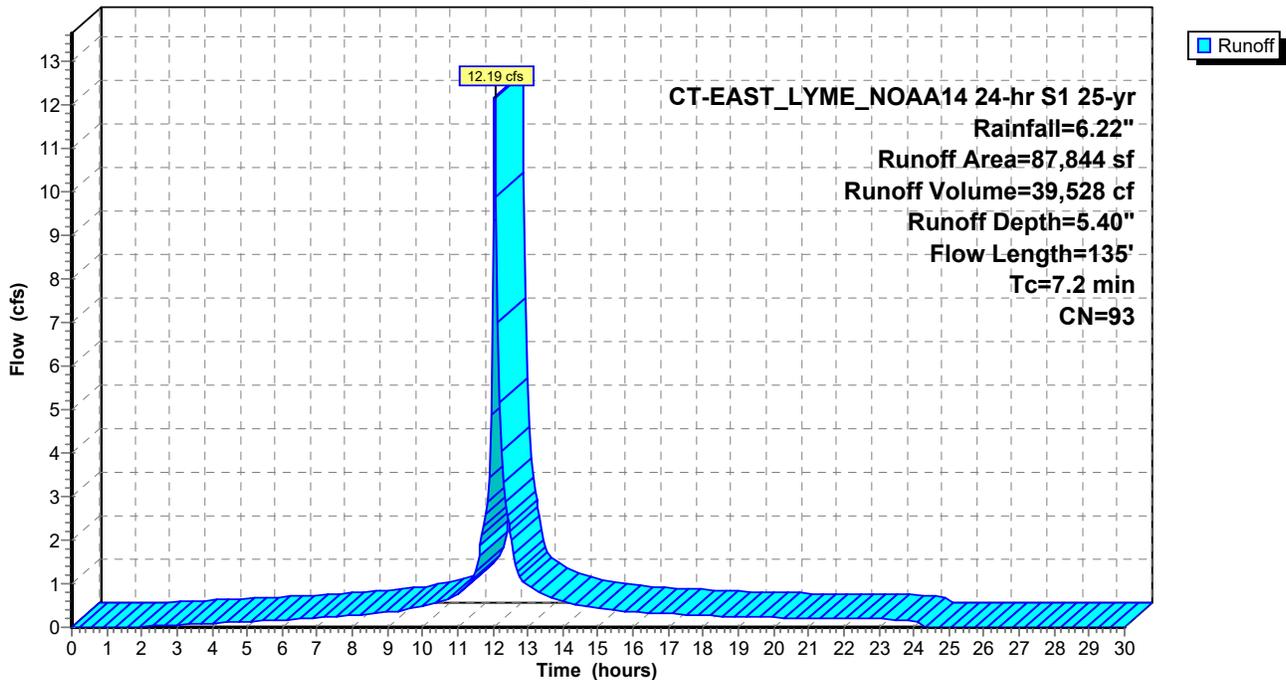
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
12,499	61	>75% Grass cover, Good, HSG B
75,345	98	Paved parking, HSG B
87,844	93	Weighted Average
12,499		14.23% Pervious Area
75,345		85.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	45	0.0100	0.11		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 3.40"
0.6	90	0.0150	2.49		Shallow Concentrated Flow, Paved Paved Kv= 20.3 fps
7.2	135	Total			

Subcatchment PDA-102: PDA-102

Hydrograph



Summary for Subcatchment PDA-103: PDA-103

Runoff = 3.72 cfs @ 12.02 hrs, Volume= 11,312 cf, Depth= 5.63"
 Routed to Pond P-103 : SWMB P-103

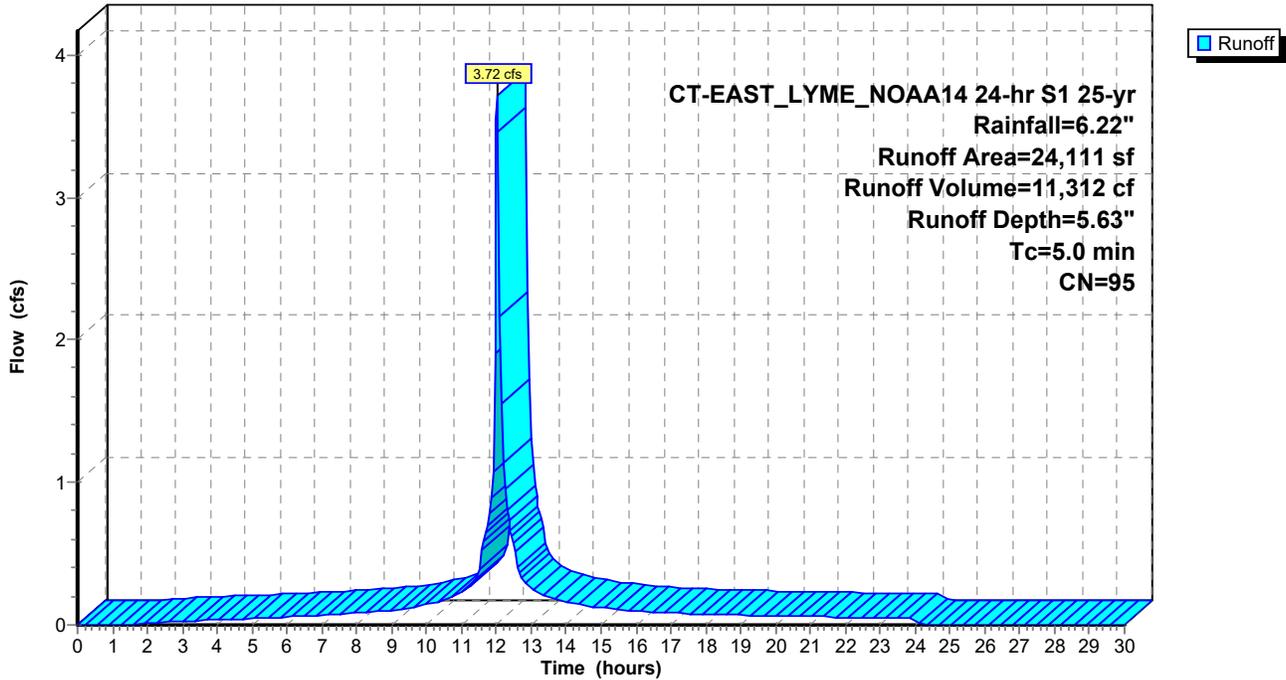
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
2,159	61	>75% Grass cover, Good, HSG B
21,952	98	Paved parking, HSG B
24,111	95	Weighted Average
2,159		8.95% Pervious Area
21,952		91.05% Impervious Area

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

Subcatchment PDA-103: PDA-103

Hydrograph



Summary for Subcatchment PDA-104: PDA-104

Runoff = 0.37 cfs @ 12.83 hrs, Volume= 4,290 cf, Depth= 1.03"
 Routed to Reach 1R : Grass Swale

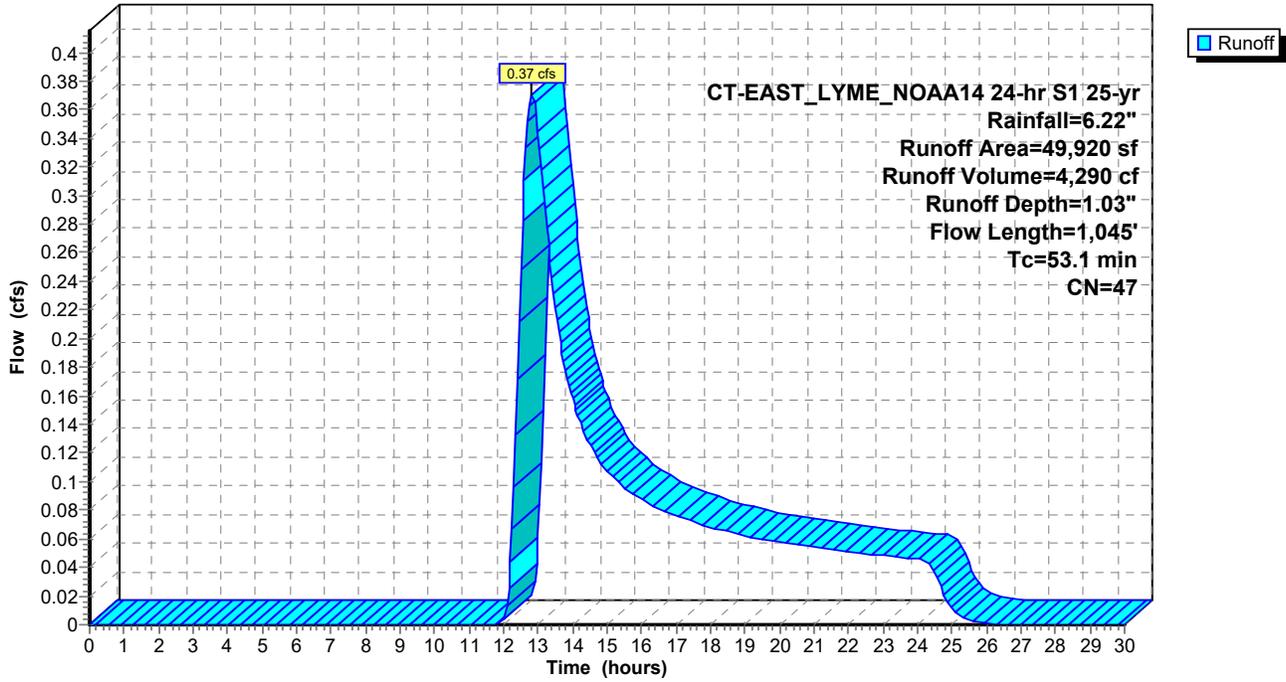
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
10,624	30	Woods, Good, HSG A
29,321	55	Woods, Good, HSG B
7,850	39	>75% Grass cover, Good, HSG A
2,125	61	>75% Grass cover, Good, HSG B
49,920	47	Weighted Average
49,920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	75	0.0050	0.04		Sheet Flow, Sheet Woods: Light underbrush n= 0.400 P2= 3.40"
9.0	190	0.0050	0.35		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
13.1	480	0.0150	0.61		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
2.2	300	0.0050	2.25	8.99	Channel Flow, Grass Swale Area= 4.0 sf Perim= 12.4' r= 0.32' n= 0.022 Earth, clean & straight
53.1	1,045	Total			

Subcatchment PDA-104: PDA-104

Hydrograph



Summary for Subcatchment PDA-105: PDA-105

Runoff = 2.69 cfs @ 12.02 hrs, Volume= 8,174 cf, Depth= 5.63"
 Routed to Pond P-104 : P-104

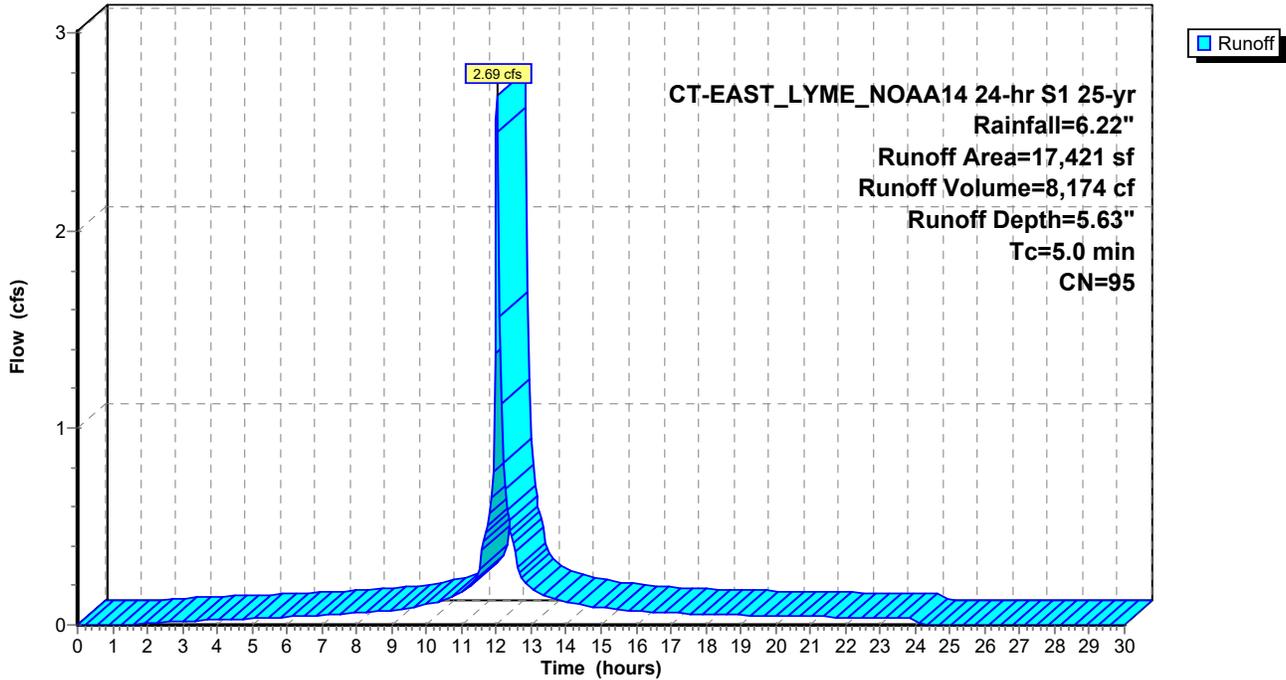
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
15,999	98	Paved parking, HSG B
1,422	61	>75% Grass cover, Good, HSG B
17,421	95	Weighted Average
1,422		8.16% Pervious Area
15,999		91.84% Impervious Area

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

Subcatchment PDA-105: PDA-105

Hydrograph



Summary for Subcatchment PDA-106: PDA-106

Runoff = 1.55 cfs @ 12.02 hrs, Volume= 4,420 cf, Depth= 4.62"
 Routed to Reach 2R : 18" HDPE

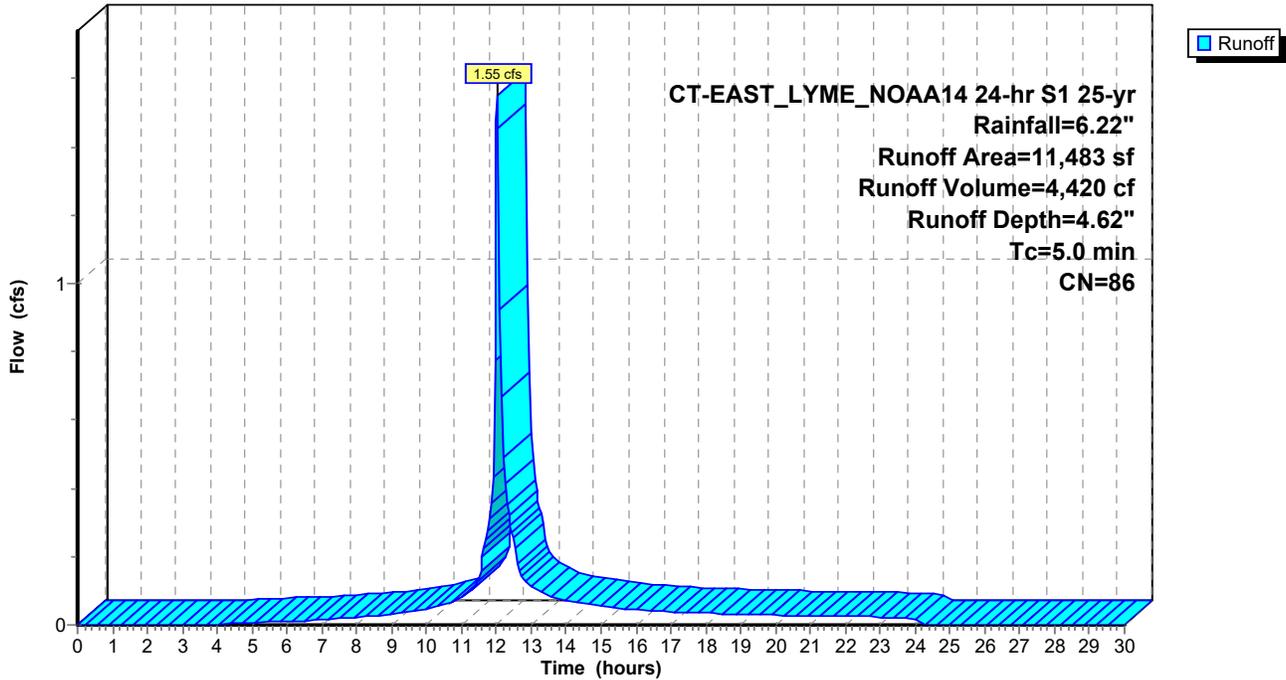
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
3,625	61	>75% Grass cover, Good, HSG B
7,858	98	Paved parking, HSG B
11,483	86	Weighted Average
3,625		31.57% Pervious Area
7,858		68.43% Impervious Area

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

Subcatchment PDA-106: PDA-106

Hydrograph



Summary for Subcatchment PDA-107: PDA-107

Runoff = 0.06 cfs @ 12.70 hrs, Volume= 1,380 cf, Depth= 0.35"
 Routed to Link DP-1 : Wetlands WA2 - WA12

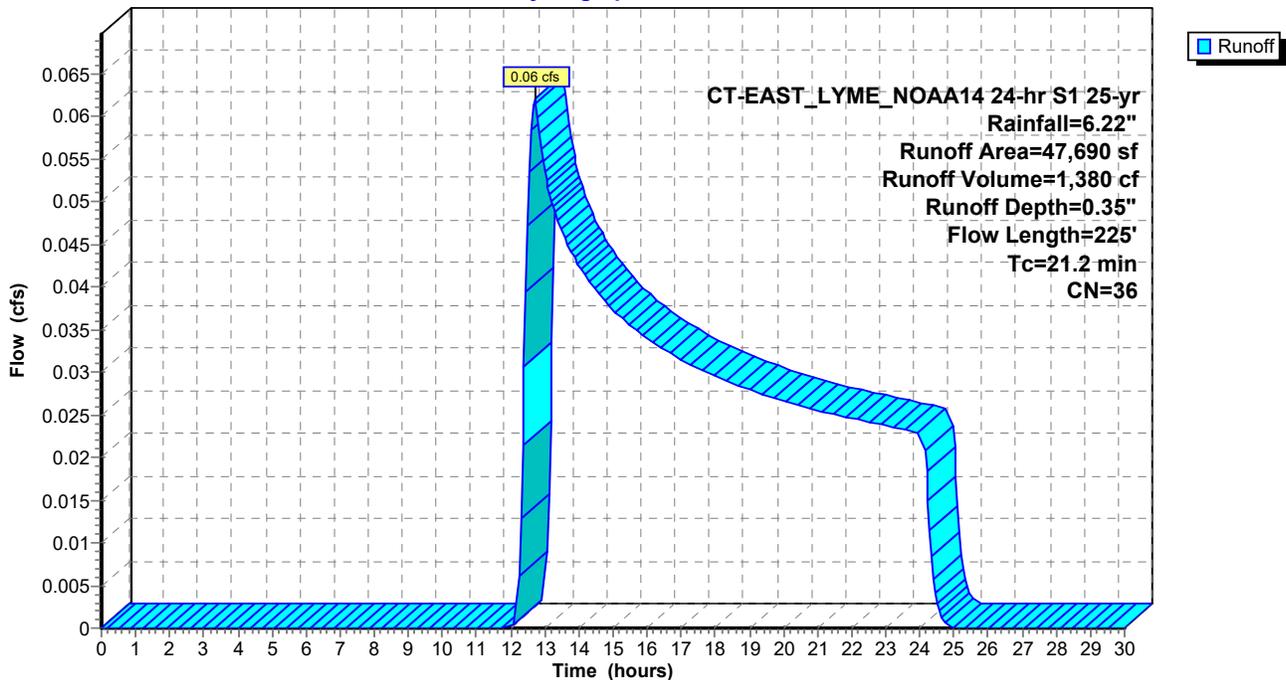
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
20,022	30	Woods, Good, HSG A
5,821	39	>75% Grass cover, Good, HSG A
2,302	61	>75% Grass cover, Good, HSG B
19,545	39	Pasture/grassland/range, Good, HSG A
47,690	36	Weighted Average
47,690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
5.1	150	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.1	15	0.1300	1.80		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
21.2	225	Total			

Subcatchment PDA-107: PDA-107

Hydrograph



Summary for Subcatchment PDA-108: PDA-108 - ROOF

Runoff = 29.00 cfs @ 12.02 hrs, Volume= 91,788 cf, Depth= 5.98"

Routed to Pond P-105 : SWMB P-105

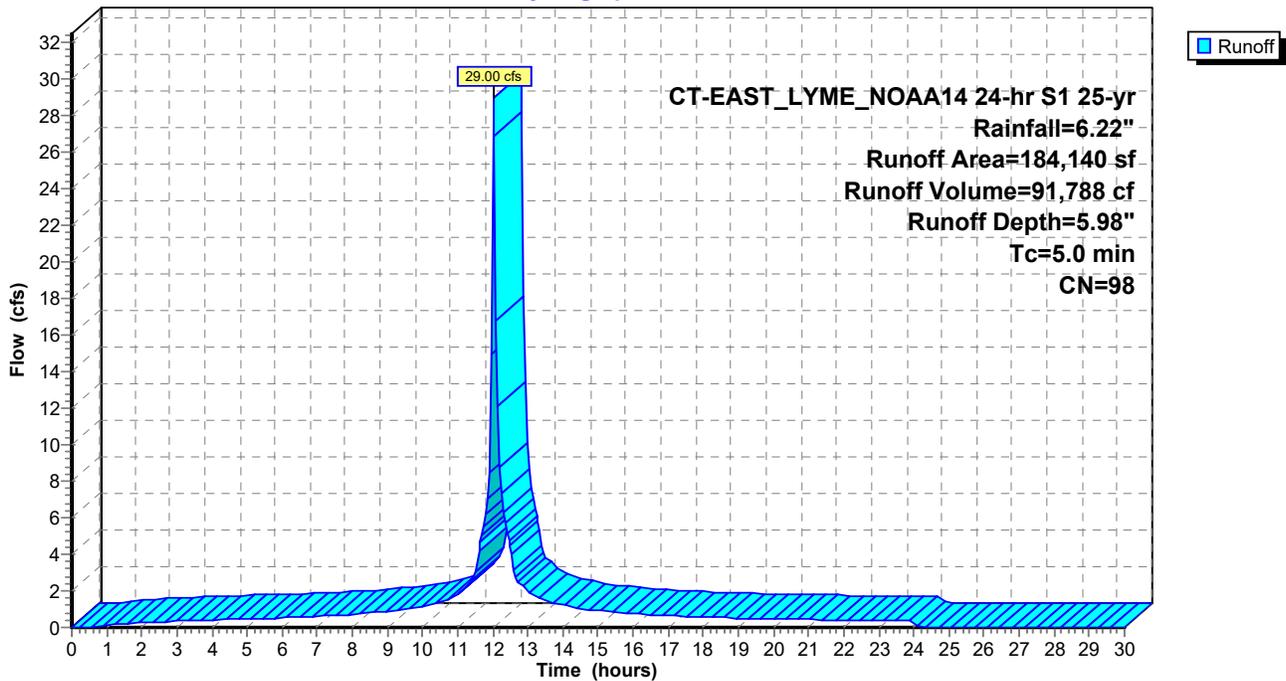
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
20,237	98	Roofs, HSG B
163,903	98	Roofs, HSG A
184,140	98	Weighted Average
184,140		100.00% Impervious Area

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

Subcatchment PDA-108: PDA-108 - ROOF

Hydrograph



Summary for Subcatchment PDA-109: PDA-109

Runoff = 8.08 cfs @ 12.03 hrs, Volume= 23,720 cf, Depth= 4.73"
 Routed to Pond P-106 : SWMB-106

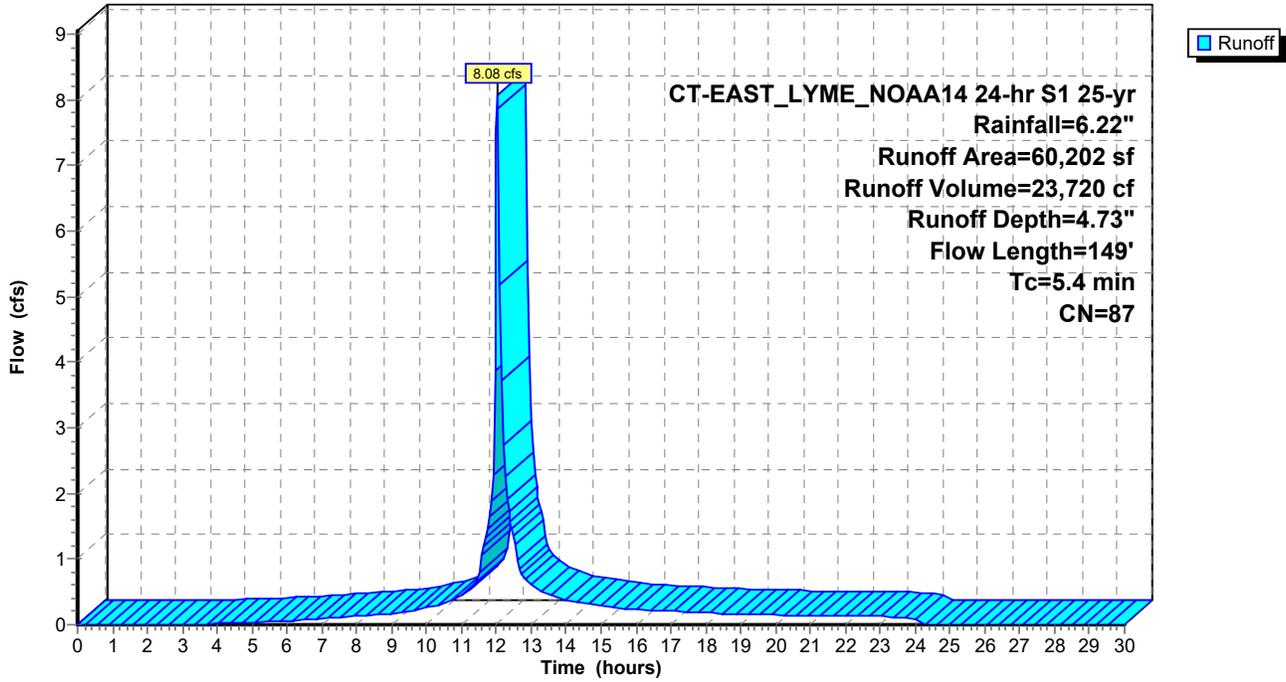
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
35,618	98	Paved parking, HSG A
11,394	98	Paved parking, HSG B
8,291	39	>75% Grass cover, Good, HSG A
4,899	61	>75% Grass cover, Good, HSG B
60,202	87	Weighted Average
13,190		21.91% Pervious Area
47,012		78.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	45	0.0200	0.15		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.1	20	0.0150	2.49		Shallow Concentrated Flow, gutter flow Paved Kv= 20.3 fps
0.3	84	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
5.4	149	Total			

Subcatchment PDA-109: PDA-109

Hydrograph



Summary for Subcatchment PDA-110: PDA-110

Runoff = 13.89 cfs @ 12.02 hrs, Volume= 41,760 cf, Depth= 5.51"
 Routed to Pond P-107 : SWMB P-107

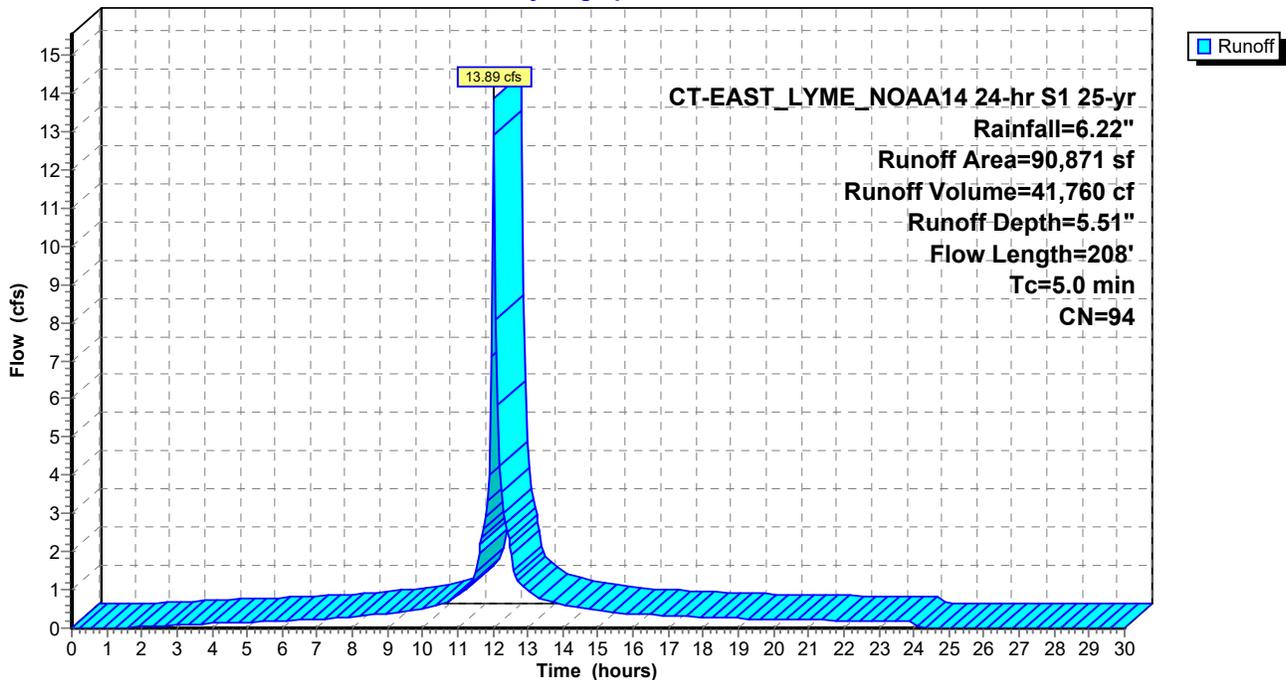
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
84,435	98	Paved parking, HSG A
6,436	39	>75% Grass cover, Good, HSG A
90,871	94	Weighted Average
6,436		7.08% Pervious Area
84,435		92.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	20	0.0200	0.13		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.5	70	0.0150	2.49		Shallow Concentrated Flow, Gutter Flow Paved Kv= 20.3 fps
0.4	118	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
3.5	208	Total, Increased to minimum Tc = 5.0 min			

Subcatchment PDA-110: PDA-110

Hydrograph



Summary for Subcatchment PDA-111: PDA-111

Runoff = 0.38 cfs @ 12.40 hrs, Volume= 4,491 cf, Depth= 0.63"
 Routed to Link DP-1 : Wetlands WA2 - WA12

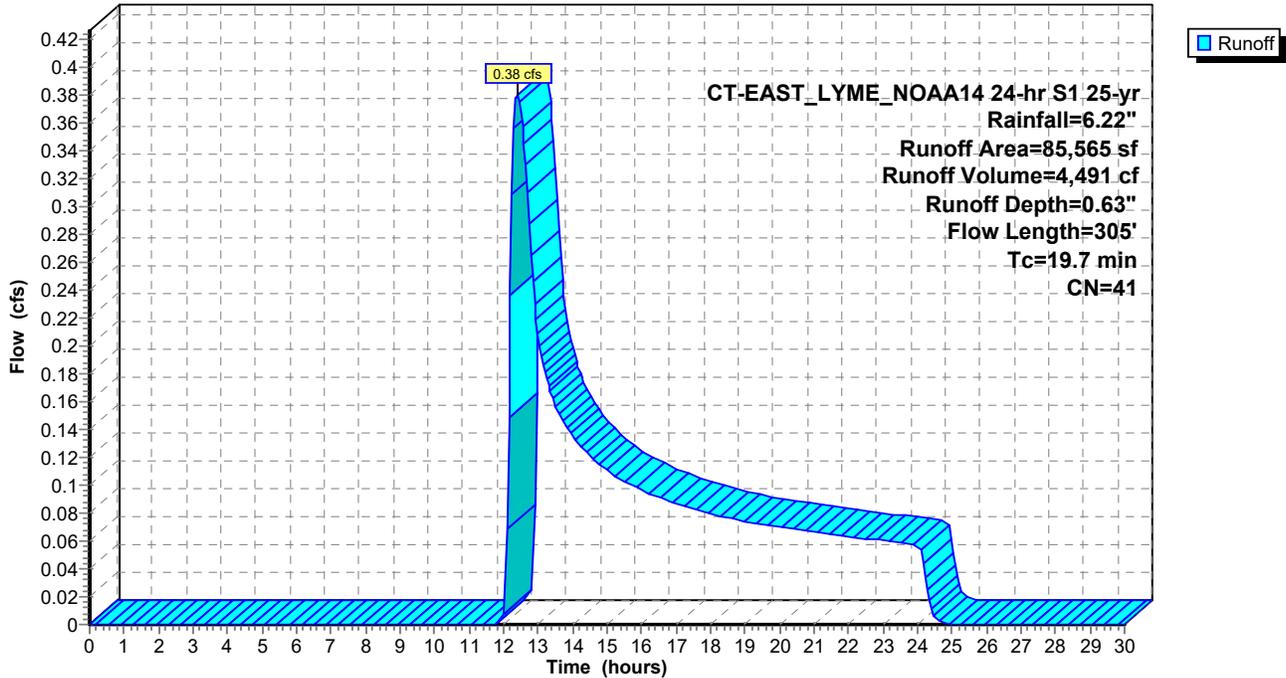
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
36,238	30	Woods, Good, HSG A
27,610	39	>75% Grass cover, Good, HSG A
3,052	55	Woods, Good, HSG B
18,665	61	Pasture/grassland/range, Good, HSG B
85,565	41	Weighted Average
85,565		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		Sheet Flow, Wooded
					Woods: Light underbrush n= 0.400 P2= 3.40"
3.9	255	0.0470	1.08		Shallow Concentrated Flow, Wooded
					Woodland Kv= 5.0 fps
19.7	305	Total			

Subcatchment PDA-111: PDA-111

Hydrograph



Summary for Subcatchment PDA-200: PDA-200

Runoff = 6.44 cfs @ 12.30 hrs, Volume= 35,078 cf, Depth= 3.47"

Routed to Link DP-2 : Frontage Road

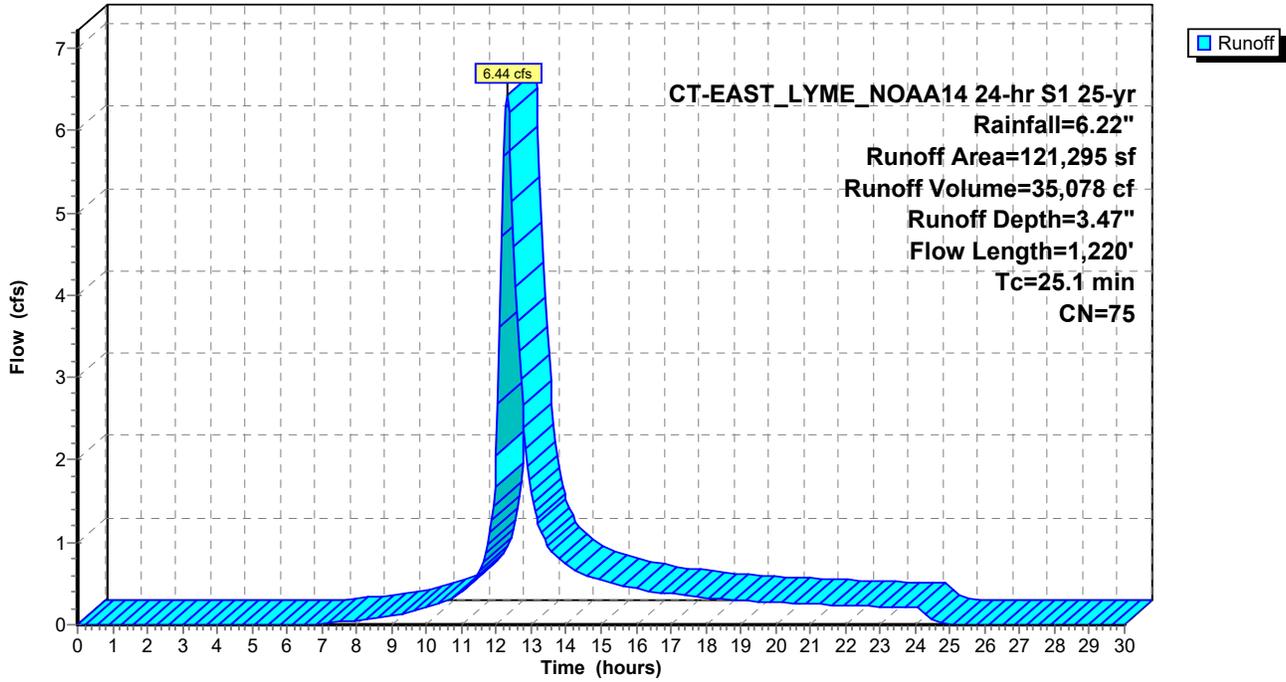
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Rainfall=6.22"

Area (sf)	CN	Description
23,430	61	Pasture/grassland/range, Good, HSG B
52,449	61	>75% Grass cover, Good, HSG B
35,803	98	Paved parking, HSG B
567	98	Paved parking, HSG A
8,668	96	Gravel surface, HSG B
378	39	>75% Grass cover, Good, HSG A
121,295	75	Weighted Average
84,925		70.02% Pervious Area
36,370		29.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
3.2	60	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.9	160	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
2.9	930	0.0100	5.26	6.46	Pipe Channel, Piping 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
25.1	1,220	Total			

Subcatchment PDA-200: PDA-200

Hydrograph



Summary for Reach 1R: Grass Swale

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 1.03" for 25-yr event
 Inflow = 0.37 cfs @ 12.83 hrs, Volume= 4,290 cf
 Outflow = 0.37 cfs @ 12.94 hrs, Volume= 4,290 cf, Atten= 1%, Lag= 6.6 min
 Routed to Pond SB-LS : SB-LS

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.37 fps, Min. Travel Time= 3.8 min
 Avg. Velocity = 0.75 fps, Avg. Travel Time= 6.9 min

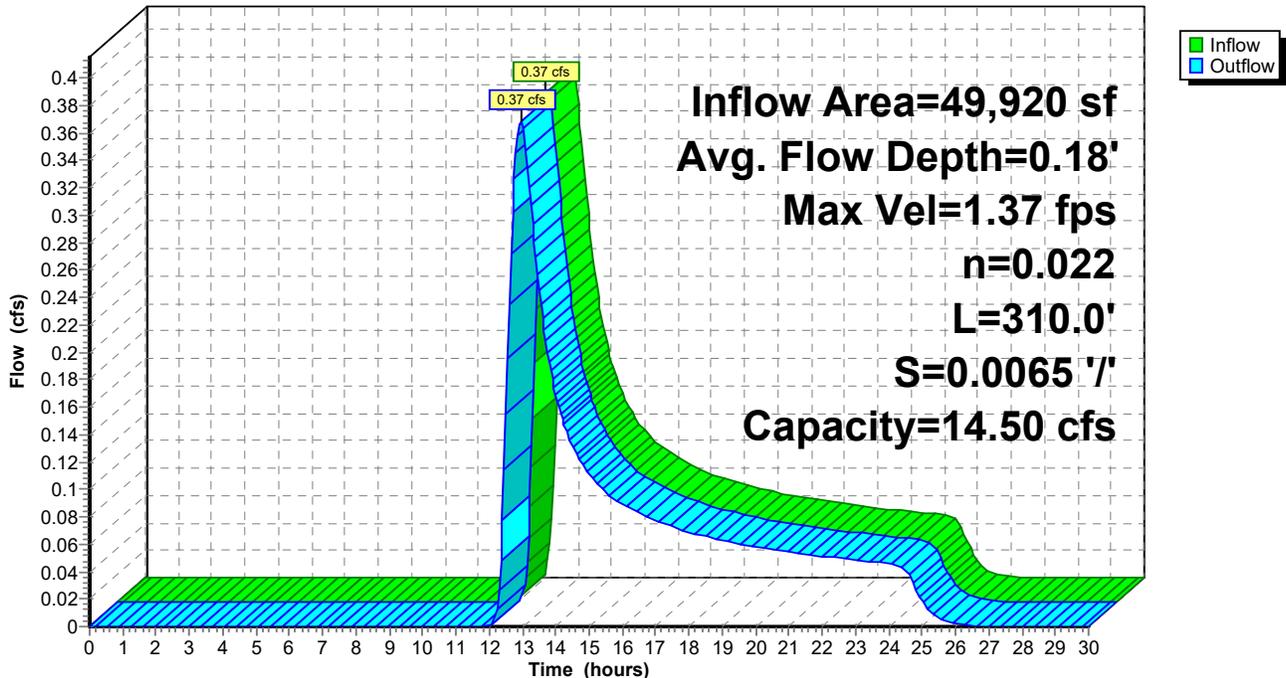
Peak Storage= 83 cf @ 12.88 hrs
 Average Depth at Peak Storage= 0.18' , Surface Width= 2.05'
 Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 14.50 cfs

1.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight
 Side Slope Z-value= 3.0 ' / ' Top Width= 7.00'
 Length= 310.0' Slope= 0.0065 ' / '
 Inlet Invert= 47.00', Outlet Invert= 45.00'



Reach 1R: Grass Swale

Hydrograph



Stage-Discharge for Reach 1R: Grass Swale

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
47.00	0.00	0.00	47.52	2.49	3.31
47.01	0.25	0.00	47.53	2.51	3.45
47.02	0.38	0.01	47.54	2.54	3.59
47.03	0.49	0.02	47.55	2.57	3.74
47.04	0.59	0.03	47.56	2.59	3.89
47.05	0.67	0.04	47.57	2.62	4.05
47.06	0.75	0.05	47.58	2.65	4.20
47.07	0.82	0.07	47.59	2.67	4.37
47.08	0.88	0.09	47.60	2.70	4.53
47.09	0.95	0.11	47.61	2.72	4.70
47.10	1.00	0.13	47.62	2.75	4.87
47.11	1.06	0.15	47.63	2.77	5.05
47.12	1.11	0.18	47.64	2.80	5.23
47.13	1.16	0.21	47.65	2.82	5.41
47.14	1.21	0.24	47.66	2.85	5.60
47.15	1.26	0.27	47.67	2.87	5.79
47.16	1.30	0.31	47.68	2.90	5.99
47.17	1.35	0.35	47.69	2.92	6.19
47.18	1.39	0.39	47.70	2.94	6.39
47.19	1.43	0.43	47.71	2.97	6.60
47.20	1.47	0.47	47.72	2.99	6.81
47.21	1.51	0.52	47.73	3.02	7.02
47.22	1.55	0.57	47.74	3.04	7.24
47.23	1.59	0.62	47.75	3.06	7.47
47.24	1.63	0.67	47.76	3.09	7.70
47.25	1.66	0.73	47.77	3.11	7.93
47.26	1.70	0.79	47.78	3.13	8.17
47.27	1.73	0.85	47.79	3.16	8.41
47.28	1.77	0.91	47.80	3.18	8.65
47.29	1.80	0.98	47.81	3.20	8.90
47.30	1.84	1.05	47.82	3.23	9.15
47.31	1.87	1.12	47.83	3.25	9.41
47.32	1.90	1.19	47.84	3.27	9.68
47.33	1.93	1.27	47.85	3.29	9.94
47.34	1.97	1.35	47.86	3.32	10.21
47.35	2.00	1.43	47.87	3.34	10.49
47.36	2.03	1.52	47.88	3.36	10.77
47.37	2.06	1.61	47.89	3.38	11.06
47.38	2.09	1.70	47.90	3.41	11.34
47.39	2.12	1.79	47.91	3.43	11.64
47.40	2.15	1.89	47.92	3.45	11.94
47.41	2.18	1.99	47.93	3.47	12.24
47.42	2.21	2.10	47.94	3.49	12.55
47.43	2.24	2.20	47.95	3.52	12.86
47.44	2.27	2.31	47.96	3.54	13.18
47.45	2.29	2.43	47.97	3.56	13.50
47.46	2.32	2.54	47.98	3.58	13.83
47.47	2.35	2.66	47.99	3.60	14.16
47.48	2.38	2.79	48.00	3.62	14.50
47.49	2.41	2.91			
47.50	2.43	3.04			
47.51	2.46	3.17			

Stage-Area-Storage for Reach 1R: Grass Swale

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
47.00	0.0	0	47.52	1.3	413
47.01	0.0	3	47.53	1.4	426
47.02	0.0	7	47.54	1.4	439
47.03	0.0	10	47.55	1.5	452
47.04	0.0	14	47.56	1.5	465
47.05	0.1	18	47.57	1.5	479
47.06	0.1	22	47.58	1.6	493
47.07	0.1	26	47.59	1.6	507
47.08	0.1	31	47.60	1.7	521
47.09	0.1	35	47.61	1.7	535
47.10	0.1	40	47.62	1.8	550
47.11	0.1	45	47.63	1.8	564
47.12	0.2	51	47.64	1.9	579
47.13	0.2	56	47.65	1.9	594
47.14	0.2	62	47.66	2.0	610
47.15	0.2	67	47.67	2.0	625
47.16	0.2	73	47.68	2.1	641
47.17	0.3	80	47.69	2.1	657
47.18	0.3	86	47.70	2.2	673
47.19	0.3	92	47.71	2.2	689
47.20	0.3	99	47.72	2.3	705
47.21	0.3	106	47.73	2.3	722
47.22	0.4	113	47.74	2.4	739
47.23	0.4	120	47.75	2.4	756
47.24	0.4	128	47.76	2.5	773
47.25	0.4	136	47.77	2.5	790
47.26	0.5	143	47.78	2.6	808
47.27	0.5	151	47.79	2.7	825
47.28	0.5	160	47.80	2.7	843
47.29	0.5	168	47.81	2.8	861
47.30	0.6	177	47.82	2.8	880
47.31	0.6	185	47.83	2.9	898
47.32	0.6	194	47.84	3.0	917
47.33	0.7	204	47.85	3.0	935
47.34	0.7	213	47.86	3.1	954
47.35	0.7	222	47.87	3.1	974
47.36	0.7	232	47.88	3.2	993
47.37	0.8	242	47.89	3.3	1,013
47.38	0.8	252	47.90	3.3	1,032
47.39	0.8	262	47.91	3.4	1,052
47.40	0.9	273	47.92	3.5	1,072
47.41	0.9	283	47.93	3.5	1,093
47.42	0.9	294	47.94	3.6	1,113
47.43	1.0	305	47.95	3.7	1,134
47.44	1.0	316	47.96	3.7	1,155
47.45	1.1	328	47.97	3.8	1,176
47.46	1.1	339	47.98	3.9	1,197
47.47	1.1	351	47.99	3.9	1,218
47.48	1.2	363	48.00	4.0	1,240
47.49	1.2	375			
47.50	1.3	388			
47.51	1.3	400			

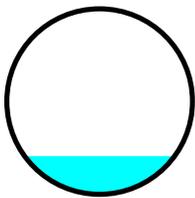
Summary for Reach 2R: 18" HDPE

Inflow Area = 219,734 sf, 97.37% Impervious, Inflow Depth = 0.96" for 25-yr event
 Inflow = 2.90 cfs @ 12.05 hrs, Volume= 17,659 cf
 Outflow = 2.69 cfs @ 12.15 hrs, Volume= 17,659 cf, Atten= 7%, Lag= 5.7 min
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.70 fps, Min. Travel Time= 2.8 min
 Avg. Velocity = 1.42 fps, Avg. Travel Time= 7.3 min

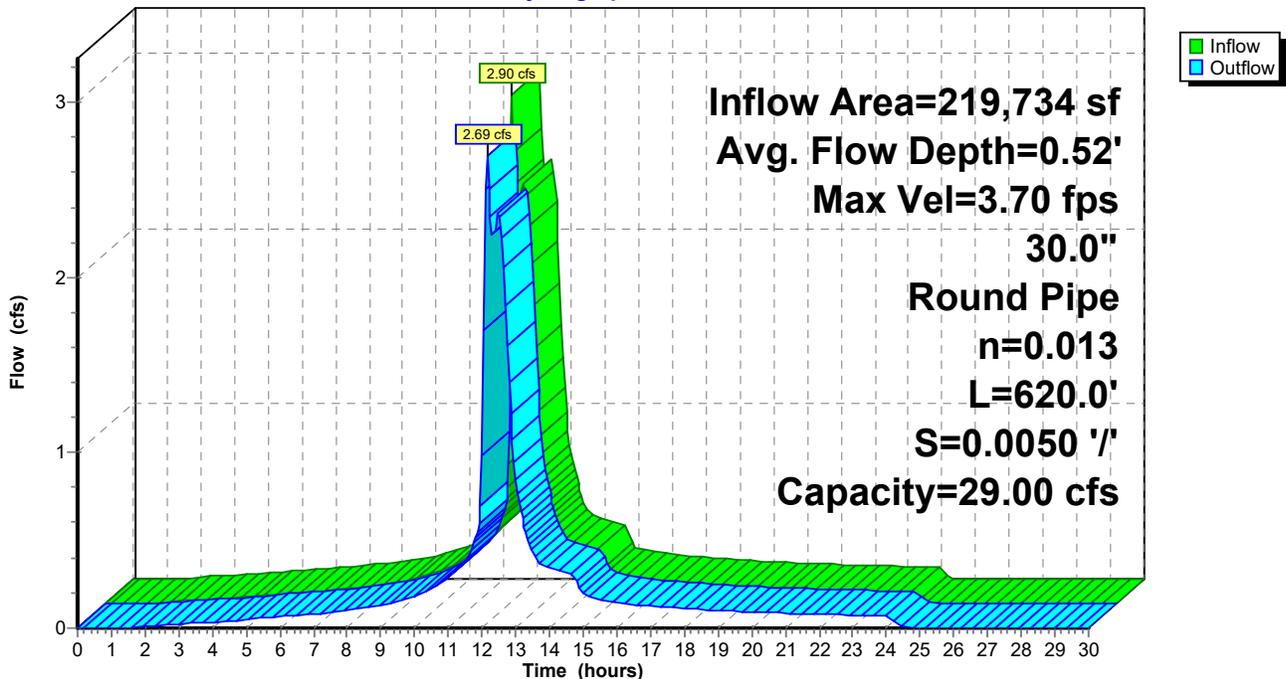
Peak Storage= 452 cf @ 12.10 hrs
 Average Depth at Peak Storage= 0.52' , Surface Width= 2.02'
 Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.00 cfs

30.0" Round Pipe
 n= 0.013
 Length= 620.0' Slope= 0.0050 '/'
 Inlet Invert= 48.10', Outlet Invert= 45.00'



Reach 2R: 18" HDPE

Hydrograph



Stage-Discharge for Reach 2R: 18" HDPE

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
48.10	0.00	0.00	49.14	5.43	10.50	50.18	6.73	29.38
48.12	0.42	0.00	49.16	5.48	10.86	50.20	6.73	29.61
48.14	0.71	0.01	49.18	5.53	11.24	50.22	6.72	29.83
48.16	0.93	0.03	49.20	5.58	11.61	50.24	6.71	30.04
48.18	1.13	0.05	49.22	5.63	11.99	50.26	6.71	30.23
48.20	1.31	0.09	49.24	5.67	12.37	50.28	6.70	30.41
48.22	1.48	0.13	49.26	5.72	12.75	50.30	6.68	30.58
48.24	1.63	0.18	49.28	5.76	13.14	50.32	6.67	30.72
48.26	1.78	0.24	49.30	5.81	13.52	50.34	6.65	30.85
48.28	1.92	0.30	49.32	5.85	13.91	50.36	6.63	30.96
48.30	2.06	0.38	49.34	5.89	14.31	50.38	6.61	31.06
48.32	2.18	0.46	49.36	5.93	14.70	50.40	6.59	31.13
48.34	2.31	0.56	49.38	5.97	15.09	50.42	6.56	31.17
48.36	2.43	0.66	49.40	6.01	15.49	50.44	6.53	31.19
48.38	2.55	0.77	49.42	6.04	15.89	50.46	6.50	31.18
48.40	2.66	0.89	49.44	6.08	16.29	50.48	6.46	31.15
48.42	2.77	1.02	49.46	6.11	16.69	50.50	6.42	31.07
48.44	2.87	1.15	49.48	6.15	17.09	50.52	6.37	30.94
48.46	2.98	1.30	49.50	6.18	17.49	50.54	6.31	30.75
48.48	3.08	1.45	49.52	6.22	17.89	50.56	6.23	30.48
48.50	3.18	1.61	49.54	6.25	18.29	50.58	6.12	29.98
48.52	3.27	1.78	49.56	6.28	18.69	50.60	5.91	29.00
48.54	3.37	1.96	49.58	6.31	19.09			
48.56	3.46	2.15	49.60	6.34	19.49			
48.58	3.55	2.34	49.62	6.36	19.88			
48.60	3.63	2.54	49.64	6.39	20.28			
48.62	3.72	2.75	49.66	6.42	20.67			
48.64	3.80	2.97	49.68	6.44	21.06			
48.66	3.88	3.19	49.70	6.47	21.45			
48.68	3.97	3.42	49.72	6.49	21.84			
48.70	4.04	3.66	49.74	6.51	22.23			
48.72	4.12	3.91	49.76	6.53	22.61			
48.74	4.20	4.17	49.78	6.55	22.99			
48.76	4.27	4.43	49.80	6.57	23.36			
48.78	4.34	4.69	49.82	6.59	23.73			
48.80	4.41	4.97	49.84	6.61	24.10			
48.82	4.48	5.25	49.86	6.62	24.46			
48.84	4.55	5.54	49.88	6.64	24.82			
48.86	4.62	5.83	49.90	6.65	25.17			
48.88	4.68	6.13	49.92	6.67	25.52			
48.90	4.75	6.43	49.94	6.68	25.86			
48.92	4.81	6.74	49.96	6.69	26.20			
48.94	4.87	7.06	49.98	6.70	26.53			
48.96	4.94	7.38	50.00	6.71	26.85			
48.98	5.00	7.71	50.02	6.72	27.17			
49.00	5.05	8.04	50.04	6.72	27.47			
49.02	5.11	8.38	50.06	6.73	27.77			
49.04	5.17	8.72	50.08	6.73	28.07			
49.06	5.22	9.07	50.10	6.73	28.35			
49.08	5.28	9.42	50.12	6.74	28.62			
49.10	5.33	9.77	50.14	6.74	28.89			
49.12	5.38	10.13	50.16	6.73	29.14			

Stage-Area-Storage for Reach 2R: 18" HDPE

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
48.10	0.0	0
48.15	0.0	15
48.20	0.1	41
48.25	0.1	75
48.30	0.2	114
48.35	0.3	158
48.40	0.3	207
48.45	0.4	259
48.50	0.5	314
48.55	0.6	373
48.60	0.7	433
48.65	0.8	496
48.70	0.9	562
48.75	1.0	629
48.80	1.1	698
48.85	1.2	768
48.90	1.4	840
48.95	1.5	912
49.00	1.6	986
49.05	1.7	1,061
49.10	1.8	1,137
49.15	2.0	1,213
49.20	2.1	1,290
49.25	2.2	1,367
49.30	2.3	1,444
49.35	2.5	1,522
49.40	2.6	1,599
49.45	2.7	1,677
49.50	2.8	1,754
49.55	3.0	1,830
49.60	3.1	1,907
49.65	3.2	1,982
49.70	3.3	2,057
49.75	3.4	2,131
49.80	3.6	2,204
49.85	3.7	2,276
49.90	3.8	2,346
49.95	3.9	2,415
50.00	4.0	2,482
50.05	4.1	2,547
50.10	4.2	2,610
50.15	4.3	2,671
50.20	4.4	2,729
50.25	4.5	2,784
50.30	4.6	2,837
50.35	4.7	2,885
50.40	4.7	2,929
50.45	4.8	2,969
50.50	4.8	3,003
50.55	4.9	3,029
50.60	4.9	3,043

Summary for Pond 3R: OCS-102 to MH-101

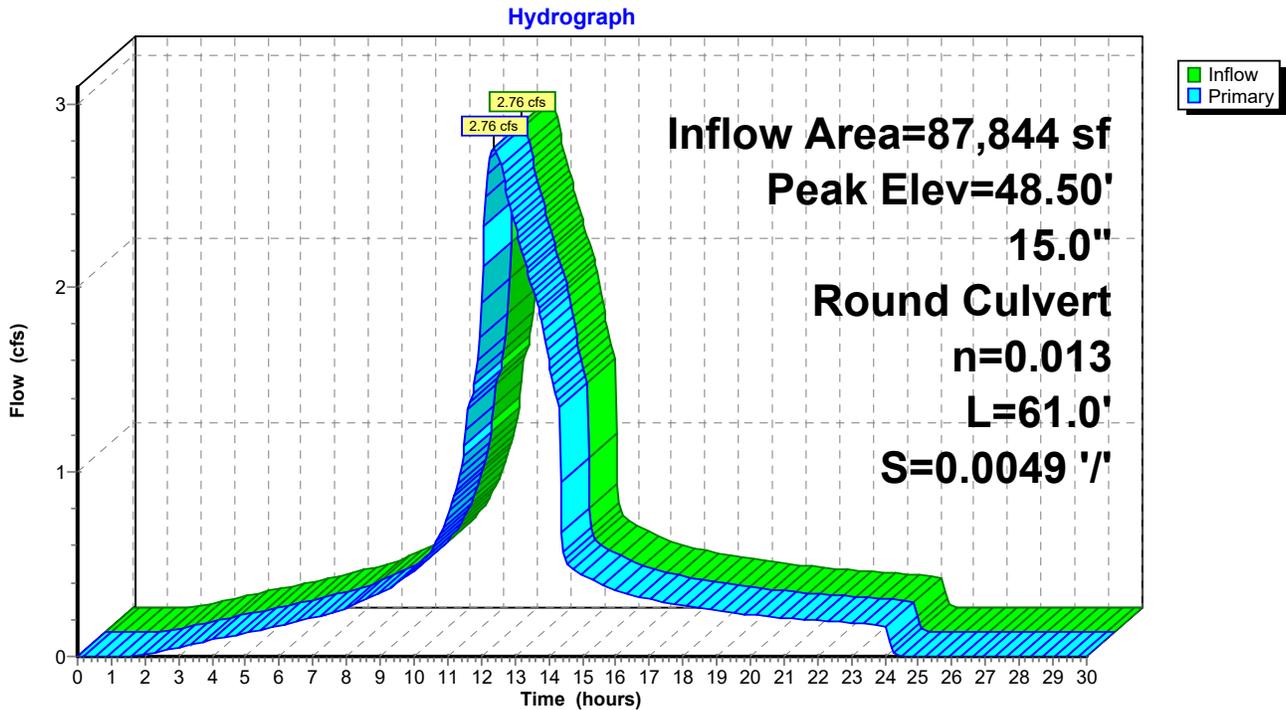
Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 5.40" for 25-yr event
 Inflow = 2.76 cfs @ 12.37 hrs, Volume= 39,525 cf
 Outflow = 2.76 cfs @ 12.37 hrs, Volume= 39,525 cf, Atten= 0%, Lag= 0.0 min
 Primary = 2.76 cfs @ 12.37 hrs, Volume= 39,525 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.50' @ 12.37 hrs

Device #1	Routing	Invert	Outlet Devices
	Primary	47.50'	15.0" Round Culvert L= 61.0' Ke= 0.500 Inlet / Outlet Invert= 47.50' / 47.20' S= 0.0049 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.76 cfs @ 12.37 hrs HW=48.50' (Free Discharge)
 ←1=Culvert (Barrel Controls 2.76 cfs @ 3.59 fps)

Pond 3R: OCS-102 to MH-101



Stage-Discharge for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.50	0.00	48.02	0.89	48.54	2.94
47.51	0.00	48.03	0.92	48.55	2.98
47.52	0.00	48.04	0.95	48.56	3.03
47.53	0.00	48.05	0.98	48.57	3.07
47.54	0.00	48.06	1.02	48.58	3.11
47.55	0.01	48.07	1.05	48.59	3.16
47.56	0.01	48.08	1.08	48.60	3.20
47.57	0.01	48.09	1.12	48.61	3.25
47.58	0.02	48.10	1.15	48.62	3.29
47.59	0.03	48.11	1.19	48.63	3.33
47.60	0.03	48.12	1.22	48.64	3.37
47.61	0.04	48.13	1.26	48.65	3.42
47.62	0.05	48.14	1.30	48.66	3.46
47.63	0.06	48.15	1.33	48.67	3.50
47.64	0.06	48.16	1.37	48.68	3.55
47.65	0.07	48.17	1.41	48.69	3.59
47.66	0.09	48.18	1.44	48.70	3.63
47.67	0.10	48.19	1.48	48.71	3.67
47.68	0.11	48.20	1.52	48.72	3.72
47.69	0.12	48.21	1.56	48.73	3.76
47.70	0.14	48.22	1.60	48.74	3.80
47.71	0.15	48.23	1.64	48.75	3.84
47.72	0.16	48.24	1.68		
47.73	0.18	48.25	1.72		
47.74	0.20	48.26	1.75		
47.75	0.21	48.27	1.79		
47.76	0.23	48.28	1.84		
47.77	0.25	48.29	1.88		
47.78	0.27	48.30	1.92		
47.79	0.29	48.31	1.96		
47.80	0.31	48.32	2.00		
47.81	0.33	48.33	2.04		
47.82	0.35	48.34	2.08		
47.83	0.37	48.35	2.12		
47.84	0.39	48.36	2.16		
47.85	0.42	48.37	2.21		
47.86	0.44	48.38	2.25		
47.87	0.46	48.39	2.29		
47.88	0.49	48.40	2.33		
47.89	0.51	48.41	2.38		
47.90	0.54	48.42	2.42		
47.91	0.57	48.43	2.46		
47.92	0.59	48.44	2.51		
47.93	0.62	48.45	2.55		
47.94	0.65	48.46	2.59		
47.95	0.68	48.47	2.64		
47.96	0.70	48.48	2.68		
47.97	0.73	48.49	2.72		
47.98	0.76	48.50	2.77		
47.99	0.79	48.51	2.81		
48.00	0.82	48.52	2.85		
48.01	0.86	48.53	2.90		

Stage-Area-Storage for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0	48.71	0
47.68	0	48.20	0	48.72	0
47.69	0	48.21	0	48.73	0
47.70	0	48.22	0	48.74	0
47.71	0	48.23	0	48.75	0
47.72	0	48.24	0		
47.73	0	48.25	0		
47.74	0	48.26	0		
47.75	0	48.27	0		
47.76	0	48.28	0		
47.77	0	48.29	0		
47.78	0	48.30	0		
47.79	0	48.31	0		
47.80	0	48.32	0		
47.81	0	48.33	0		
47.82	0	48.34	0		
47.83	0	48.35	0		
47.84	0	48.36	0		
47.85	0	48.37	0		
47.86	0	48.38	0		
47.87	0	48.39	0		
47.88	0	48.40	0		
47.89	0	48.41	0		
47.90	0	48.42	0		
47.91	0	48.43	0		
47.92	0	48.44	0		
47.93	0	48.45	0		
47.94	0	48.46	0		
47.95	0	48.47	0		
47.96	0	48.48	0		
47.97	0	48.49	0		
47.98	0	48.50	0		
47.99	0	48.51	0		
48.00	0	48.52	0		
48.01	0	48.53	0		

Summary for Pond 4R: MH-101 to MH-102

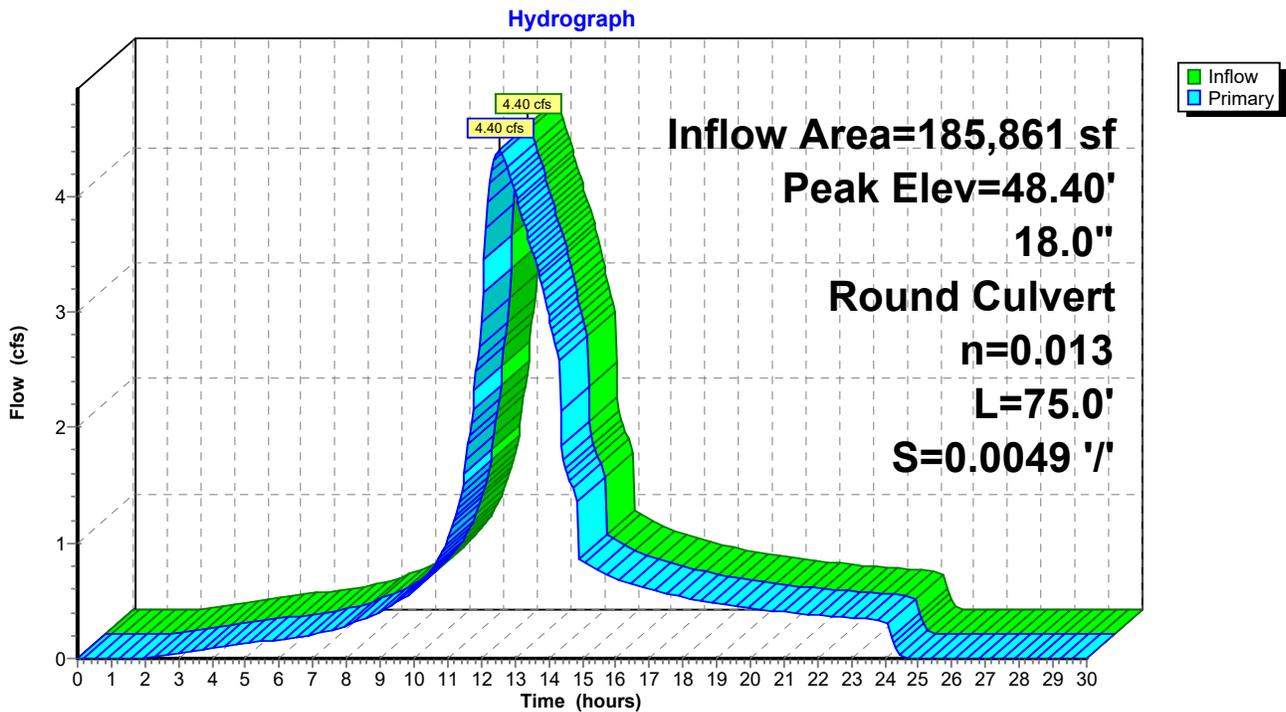
Inflow Area = 185,861 sf, 62.85% Impervious, Inflow Depth = 4.23" for 25-yr event
 Inflow = 4.40 cfs @ 12.52 hrs, Volume= 65,451 cf
 Outflow = 4.40 cfs @ 12.52 hrs, Volume= 65,451 cf, Atten= 0%, Lag= 0.0 min
 Primary = 4.40 cfs @ 12.52 hrs, Volume= 65,451 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.40' @ 12.52 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	18.0" Round Culvert L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.83' S= 0.0049 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=4.40 cfs @ 12.52 hrs HW=48.39' (Free Discharge)
 ↳1=Culvert (Barrel Controls 4.40 cfs @ 4.00 fps)

Pond 4R: MH-101 to MH-102



Stage-Discharge for Pond 4R: MH-101 to MH-102

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.20	0.00	47.72	1.01	48.24	3.52
47.21	0.00	47.73	1.05	48.25	3.57
47.22	0.00	47.74	1.09	48.26	3.63
47.23	0.00	47.75	1.13	48.27	3.69
47.24	0.00	47.76	1.17	48.28	3.74
47.25	0.01	47.77	1.21	48.29	3.80
47.26	0.01	47.78	1.25	48.30	3.86
47.27	0.02	47.79	1.29	48.31	3.91
47.28	0.02	47.80	1.33	48.32	3.97
47.29	0.03	47.81	1.37	48.33	4.03
47.30	0.04	47.82	1.41	48.34	4.09
47.31	0.04	47.83	1.45	48.35	4.14
47.32	0.05	47.84	1.50	48.36	4.20
47.33	0.06	47.85	1.54	48.37	4.26
47.34	0.07	47.86	1.58	48.38	4.32
47.35	0.08	47.87	1.63	48.39	4.37
47.36	0.10	47.88	1.67	48.40	4.43
47.37	0.11	47.89	1.72	48.41	4.49
47.38	0.12	47.90	1.76	48.42	4.55
47.39	0.14	47.91	1.81	48.43	4.61
47.40	0.15	47.92	1.86	48.44	4.66
47.41	0.17	47.93	1.90	48.45	4.72
47.42	0.18	47.94	1.95	48.46	4.78
47.43	0.20	47.95	2.00	48.47	4.84
47.44	0.22	47.96	2.05	48.48	4.90
47.45	0.24	47.97	2.09	48.49	4.95
47.46	0.26	47.98	2.14	48.50	5.01
47.47	0.28	47.99	2.19	48.51	5.07
47.48	0.30	48.00	2.24	48.52	5.13
47.49	0.32	48.01	2.29	48.53	5.18
47.50	0.35	48.02	2.34	48.54	5.24
47.51	0.37	48.03	2.39	48.55	5.30
47.52	0.39	48.04	2.44	48.56	5.36
47.53	0.42	48.05	2.49	48.57	5.41
47.54	0.44	48.06	2.54	48.58	5.47
47.55	0.47	48.07	2.60	48.59	5.53
47.56	0.50	48.08	2.65	48.60	5.59
47.57	0.52	48.09	2.70	48.61	5.64
47.58	0.55	48.10	2.75	48.62	5.70
47.59	0.58	48.11	2.81	48.63	5.76
47.60	0.61	48.12	2.86	48.64	5.81
47.61	0.64	48.13	2.91	48.65	5.87
47.62	0.67	48.14	2.97	48.66	5.92
47.63	0.70	48.15	3.02	48.67	5.98
47.64	0.74	48.16	3.08	48.68	6.04
47.65	0.77	48.17	3.13	48.69	6.09
47.66	0.80	48.18	3.18	48.70	6.15
47.67	0.84	48.19	3.24		
47.68	0.87	48.20	3.29		
47.69	0.91	48.21	3.35		
47.70	0.94	48.22	3.41		
47.71	0.98	48.23	3.46		

Stage-Area-Storage for Pond 4R: MH-101 to MH-102

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0	48.34	0
47.31	0	47.83	0	48.35	0
47.32	0	47.84	0	48.36	0
47.33	0	47.85	0	48.37	0
47.34	0	47.86	0	48.38	0
47.35	0	47.87	0	48.39	0
47.36	0	47.88	0	48.40	0
47.37	0	47.89	0	48.41	0
47.38	0	47.90	0	48.42	0
47.39	0	47.91	0	48.43	0
47.40	0	47.92	0	48.44	0
47.41	0	47.93	0	48.45	0
47.42	0	47.94	0	48.46	0
47.43	0	47.95	0	48.47	0
47.44	0	47.96	0	48.48	0
47.45	0	47.97	0	48.49	0
47.46	0	47.98	0	48.50	0
47.47	0	47.99	0	48.51	0
47.48	0	48.00	0	48.52	0
47.49	0	48.01	0	48.53	0
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0		
47.68	0	48.20	0		
47.69	0	48.21	0		
47.70	0	48.22	0		
47.71	0	48.23	0		

Summary for Pond 5R: MH-102 to MH-103

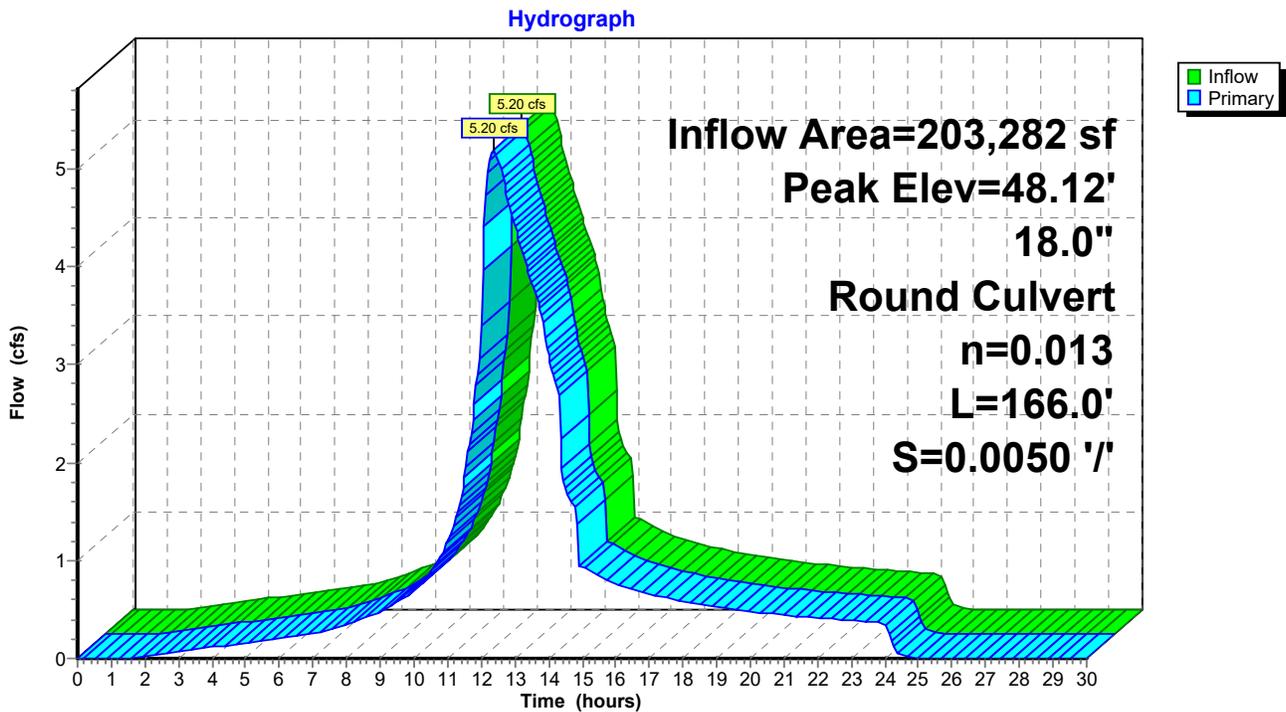
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 4.35" for 25-yr event
 Inflow = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf
 Outflow = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf
 Routed to Pond 6R : MH-103 to FES-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.12' @ 12.37 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.83'	18.0" Round Culvert L= 166.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 46.83' / 46.00' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=5.19 cfs @ 12.37 hrs HW=48.12' (Free Discharge)
 ←1=Culvert (Barrel Controls 5.19 cfs @ 4.30 fps)

Pond 5R: MH-102 to MH-103



Stage-Discharge for Pond 5R: MH-102 to MH-103

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.83	0.00	47.35	1.05	47.87	3.69
46.84	0.00	47.36	1.09	47.88	3.75
46.85	0.00	47.37	1.13	47.89	3.81
46.86	0.00	47.38	1.17	47.90	3.87
46.87	0.00	47.39	1.22	47.91	3.93
46.88	0.01	47.40	1.26	47.92	3.99
46.89	0.01	47.41	1.30	47.93	4.05
46.90	0.02	47.42	1.34	47.94	4.11
46.91	0.02	47.43	1.39	47.95	4.17
46.92	0.03	47.44	1.43	47.96	4.22
46.93	0.04	47.45	1.47	47.97	4.28
46.94	0.04	47.46	1.52	47.98	4.34
46.95	0.05	47.47	1.56	47.99	4.40
46.96	0.06	47.48	1.61	48.00	4.46
46.97	0.07	47.49	1.66	48.01	4.52
46.98	0.08	47.50	1.70	48.02	4.58
46.99	0.10	47.51	1.75	48.03	4.64
47.00	0.11	47.52	1.80	48.04	4.70
47.01	0.12	47.53	1.85	48.05	4.76
47.02	0.14	47.54	1.89	48.06	4.82
47.03	0.15	47.55	1.94	48.07	4.88
47.04	0.17	47.56	1.99	48.08	4.94
47.05	0.19	47.57	2.04	48.09	5.00
47.06	0.21	47.58	2.09	48.10	5.06
47.07	0.22	47.59	2.14	48.11	5.12
47.08	0.24	47.60	2.20	48.12	5.18
47.09	0.26	47.61	2.25	48.13	5.24
47.10	0.29	47.62	2.30	48.14	5.29
47.11	0.31	47.63	2.35	48.15	5.35
47.12	0.33	47.64	2.40	48.16	5.41
47.13	0.35	47.65	2.46	48.17	5.47
47.14	0.38	47.66	2.51	48.18	5.53
47.15	0.40	47.67	2.56	48.19	5.59
47.16	0.43	47.68	2.62	48.20	5.64
47.17	0.46	47.69	2.67	48.21	5.70
47.18	0.48	47.70	2.73	48.22	5.76
47.19	0.51	47.71	2.78	48.23	5.82
47.20	0.54	47.72	2.84	48.24	5.87
47.21	0.57	47.73	2.89	48.25	5.93
47.22	0.60	47.74	2.95	48.26	5.99
47.23	0.63	47.75	3.00	48.27	6.04
47.24	0.66	47.76	3.06	48.28	6.10
47.25	0.69	47.77	3.12	48.29	6.15
47.26	0.73	47.78	3.17	48.30	6.21
47.27	0.76	47.79	3.23	48.31	6.26
47.28	0.80	47.80	3.29	48.32	6.32
47.29	0.83	47.81	3.34	48.33	6.37
47.30	0.87	47.82	3.40		
47.31	0.90	47.83	3.46		
47.32	0.94	47.84	3.52		
47.33	0.98	47.85	3.58		
47.34	1.02	47.86	3.63		

Stage-Area-Storage for Pond 5R: MH-102 to MH-103

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.83	0	47.35	0	47.87	0
46.84	0	47.36	0	47.88	0
46.85	0	47.37	0	47.89	0
46.86	0	47.38	0	47.90	0
46.87	0	47.39	0	47.91	0
46.88	0	47.40	0	47.92	0
46.89	0	47.41	0	47.93	0
46.90	0	47.42	0	47.94	0
46.91	0	47.43	0	47.95	0
46.92	0	47.44	0	47.96	0
46.93	0	47.45	0	47.97	0
46.94	0	47.46	0	47.98	0
46.95	0	47.47	0	47.99	0
46.96	0	47.48	0	48.00	0
46.97	0	47.49	0	48.01	0
46.98	0	47.50	0	48.02	0
46.99	0	47.51	0	48.03	0
47.00	0	47.52	0	48.04	0
47.01	0	47.53	0	48.05	0
47.02	0	47.54	0	48.06	0
47.03	0	47.55	0	48.07	0
47.04	0	47.56	0	48.08	0
47.05	0	47.57	0	48.09	0
47.06	0	47.58	0	48.10	0
47.07	0	47.59	0	48.11	0
47.08	0	47.60	0	48.12	0
47.09	0	47.61	0	48.13	0
47.10	0	47.62	0	48.14	0
47.11	0	47.63	0	48.15	0
47.12	0	47.64	0	48.16	0
47.13	0	47.65	0	48.17	0
47.14	0	47.66	0	48.18	0
47.15	0	47.67	0	48.19	0
47.16	0	47.68	0	48.20	0
47.17	0	47.69	0	48.21	0
47.18	0	47.70	0	48.22	0
47.19	0	47.71	0	48.23	0
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0		
47.31	0	47.83	0		
47.32	0	47.84	0		
47.33	0	47.85	0		
47.34	0	47.86	0		

Summary for Pond 6R: MH-103 to FES-101

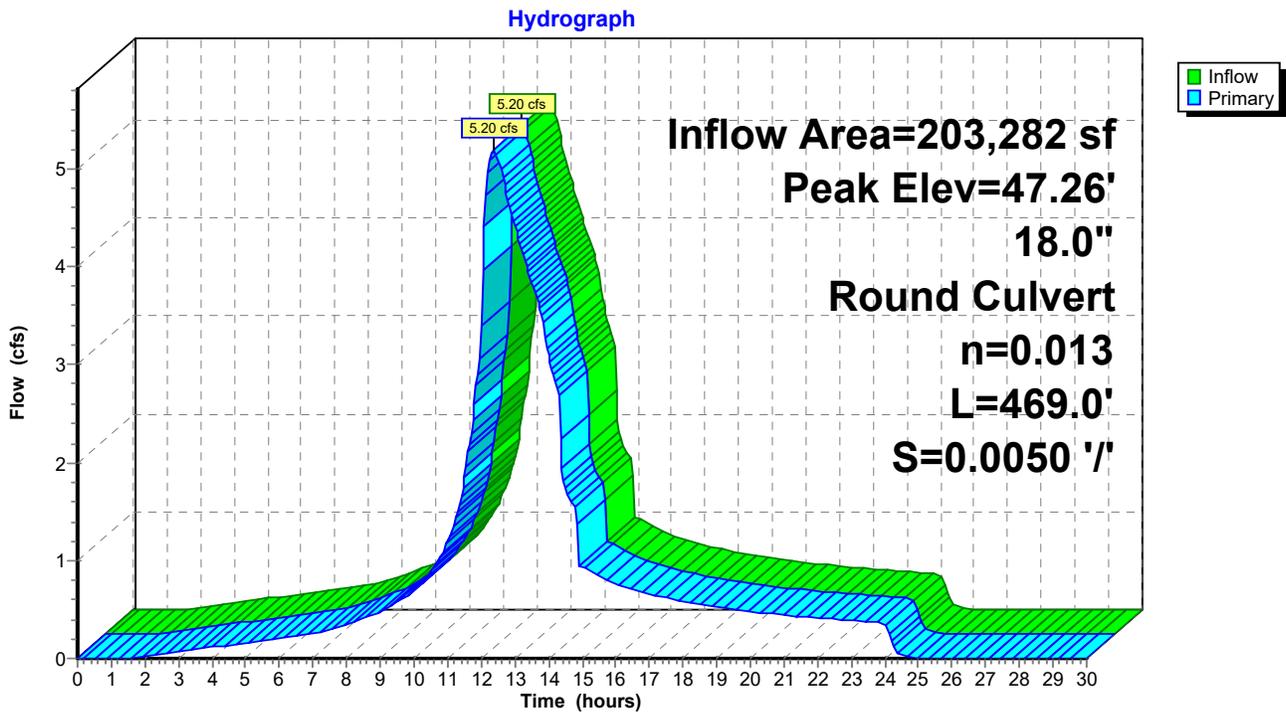
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 4.35" for 25-yr event
 Inflow = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf
 Outflow = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf
 Routed to Pond P-109 : SWMB P-109

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.26' @ 12.37 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.00'	18.0" Round Culvert L= 469.0' Ke= 0.500 Inlet / Outlet Invert= 46.00' / 43.65' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=5.19 cfs @ 12.37 hrs HW=47.26' (Free Discharge)
 ↑1=Culvert (Barrel Controls 5.19 cfs @ 4.43 fps)

Pond 6R: MH-103 to FES-101



Stage-Discharge for Pond 6R: MH-103 to FES-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.00	0.00	46.52	1.08	47.04	3.85
46.01	0.00	46.53	1.12	47.05	3.91
46.02	0.00	46.54	1.16	47.06	3.97
46.03	0.00	46.55	1.21	47.07	4.03
46.04	0.00	46.56	1.25	47.08	4.09
46.05	0.01	46.57	1.29	47.09	4.15
46.06	0.01	46.58	1.34	47.10	4.21
46.07	0.02	46.59	1.38	47.11	4.28
46.08	0.02	46.60	1.43	47.12	4.34
46.09	0.03	46.61	1.47	47.13	4.40
46.10	0.04	46.62	1.52	47.14	4.46
46.11	0.04	46.63	1.57	47.15	4.52
46.12	0.05	46.64	1.61	47.16	4.59
46.13	0.06	46.65	1.66	47.17	4.65
46.14	0.07	46.66	1.71	47.18	4.71
46.15	0.08	46.67	1.76	47.19	4.77
46.16	0.10	46.68	1.81	47.20	4.83
46.17	0.11	46.69	1.86	47.21	4.89
46.18	0.12	46.70	1.91	47.22	4.96
46.19	0.14	46.71	1.96	47.23	5.02
46.20	0.15	46.72	2.01	47.24	5.08
46.21	0.17	46.73	2.06	47.25	5.14
46.22	0.19	46.74	2.11	47.26	5.20
46.23	0.21	46.75	2.17	47.27	5.26
46.24	0.23	46.76	2.22	47.28	5.32
46.25	0.25	46.77	2.27	47.29	5.38
46.26	0.27	46.78	2.33	47.30	5.44
46.27	0.29	46.79	2.38	47.31	5.50
46.28	0.31	46.80	2.44	47.32	5.56
46.29	0.33	46.81	2.49	47.33	5.62
46.30	0.36	46.82	2.55	47.34	5.68
46.31	0.38	46.83	2.60	47.35	5.74
46.32	0.41	46.84	2.66	47.36	5.80
46.33	0.44	46.85	2.72	47.37	5.86
46.34	0.46	46.86	2.77	47.38	5.92
46.35	0.49	46.87	2.83	47.39	5.98
46.36	0.52	46.88	2.89	47.40	6.03
46.37	0.55	46.89	2.95	47.41	6.09
46.38	0.58	46.90	3.01	47.42	6.15
46.39	0.61	46.91	3.06	47.43	6.20
46.40	0.64	46.92	3.12	47.44	6.26
46.41	0.68	46.93	3.18	47.45	6.32
46.42	0.71	46.94	3.24	47.46	6.37
46.43	0.74	46.95	3.30	47.47	6.43
46.44	0.78	46.96	3.36	47.48	6.48
46.45	0.81	46.97	3.42	47.49	6.53
46.46	0.85	46.98	3.48	47.50	6.59
46.47	0.89	46.99	3.54		
46.48	0.92	47.00	3.60		
46.49	0.96	47.01	3.66		
46.50	1.00	47.02	3.72		
46.51	1.04	47.03	3.78		

Stage-Area-Storage for Pond 6R: MH-103 to FES-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.00	0	46.52	0	47.04	0
46.01	0	46.53	0	47.05	0
46.02	0	46.54	0	47.06	0
46.03	0	46.55	0	47.07	0
46.04	0	46.56	0	47.08	0
46.05	0	46.57	0	47.09	0
46.06	0	46.58	0	47.10	0
46.07	0	46.59	0	47.11	0
46.08	0	46.60	0	47.12	0
46.09	0	46.61	0	47.13	0
46.10	0	46.62	0	47.14	0
46.11	0	46.63	0	47.15	0
46.12	0	46.64	0	47.16	0
46.13	0	46.65	0	47.17	0
46.14	0	46.66	0	47.18	0
46.15	0	46.67	0	47.19	0
46.16	0	46.68	0	47.20	0
46.17	0	46.69	0	47.21	0
46.18	0	46.70	0	47.22	0
46.19	0	46.71	0	47.23	0
46.20	0	46.72	0	47.24	0
46.21	0	46.73	0	47.25	0
46.22	0	46.74	0	47.26	0
46.23	0	46.75	0	47.27	0
46.24	0	46.76	0	47.28	0
46.25	0	46.77	0	47.29	0
46.26	0	46.78	0	47.30	0
46.27	0	46.79	0	47.31	0
46.28	0	46.80	0	47.32	0
46.29	0	46.81	0	47.33	0
46.30	0	46.82	0	47.34	0
46.31	0	46.83	0	47.35	0
46.32	0	46.84	0	47.36	0
46.33	0	46.85	0	47.37	0
46.34	0	46.86	0	47.38	0
46.35	0	46.87	0	47.39	0
46.36	0	46.88	0	47.40	0
46.37	0	46.89	0	47.41	0
46.38	0	46.90	0	47.42	0
46.39	0	46.91	0	47.43	0
46.40	0	46.92	0	47.44	0
46.41	0	46.93	0	47.45	0
46.42	0	46.94	0	47.46	0
46.43	0	46.95	0	47.47	0
46.44	0	46.96	0	47.48	0
46.45	0	46.97	0	47.49	0
46.46	0	46.98	0	47.50	0
46.47	0	46.99	0		
46.48	0	47.00	0		
46.49	0	47.01	0		
46.50	0	47.02	0		
46.51	0	47.03	0		

Summary for Pond P-101: SWMB P-101

Inflow Area = 98,017 sf, 42.31% Impervious, Inflow Depth = 3.17" for 25-yr event
 Inflow = 5.23 cfs @ 12.24 hrs, Volume= 25,926 cf
 Outflow = 1.74 cfs @ 12.74 hrs, Volume= 25,926 cf, Atten= 67%, Lag= 30.0 min
 Primary = 0.00 cfs @ 12.74 hrs, Volume= 0 cf
 Routed to Pond 4R : MH-101 to MH-102
 Secondary = 1.74 cfs @ 12.74 hrs, Volume= 25,926 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.51' @ 12.74 hrs Surf.Area= 8,124 sf Storage= 5,455 cf

Plug-Flow detention time= 20.3 min calculated for 25,883 cf (100% of inflow)
 Center-of-Mass det. time= 20.2 min (887.4 - 867.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.40'	5,666 cf	84.83'W x 95.76'L x 2.33'H Field A 18,955 cf Overall - 4,791 cf Embedded = 14,164 cf x 40.0% Voids
#2A	47.90'	4,791 cf	ADS_StormTech SC-310 +Cap x 325 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 325 Chambers in 25 Rows
		10,457 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.10'	4.0' long x 0.73' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.40'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.10'

Primary OutFlow Max=0.00 cfs @ 12.74 hrs HW=48.51' (Free Discharge)

↑1=**Low Level Orifice** (Orifice Controls 0.00 cfs @ 0.31 fps)

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

Secondary OutFlow Max=1.74 cfs @ 12.74 hrs HW=48.51' (Free Discharge)

↑3=**Underdrain** (Controls 1.74 cfs)

Pond P-101: SWMB P-101 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

25 Rows x 34.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 84.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

325 Chambers x 14.7 cf = 4,791.1 cf Chamber Storage

18,955.2 cf Field - 4,791.1 cf Chambers = 14,164.0 cf Stone x 40.0% Voids = 5,665.6 cf Stone Storage

Chamber Storage + Stone Storage = 10,456.7 cf = 0.240 af

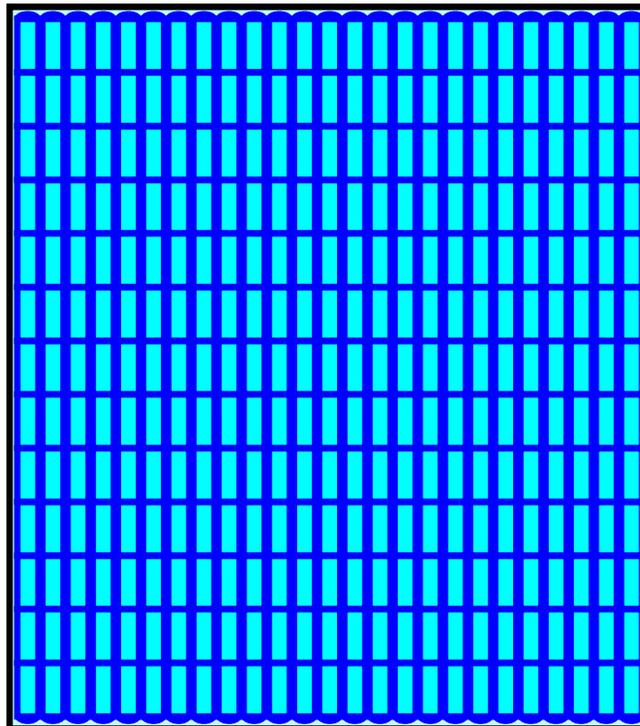
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 84.83' x 2.33'

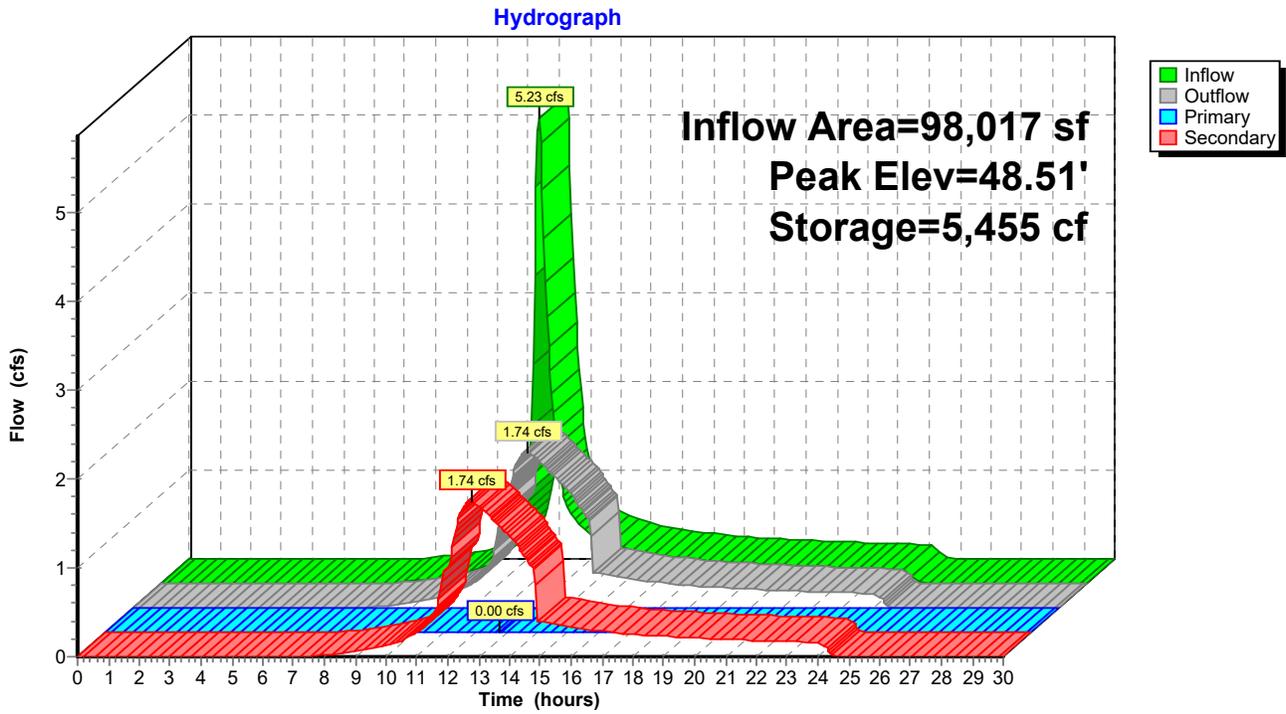
325 Chambers

702.0 cy Field

524.6 cy Stone



Pond P-101: SWMB P-101



Stage-Discharge for Pond P-101: SWMB P-101

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.40	0.00	0.00	0.00
47.45	0.98	0.00	0.98
47.50	1.01	0.00	1.01
47.55	1.05	0.00	1.05
47.60	1.08	0.00	1.08
47.65	1.12	0.00	1.12
47.70	1.16	0.00	1.16
47.75	1.19	0.00	1.19
47.80	1.23	0.00	1.23
47.85	1.27	0.00	1.27
47.90	1.30	0.00	1.30
47.95	1.34	0.00	1.34
48.00	1.37	0.00	1.37
48.05	1.41	0.00	1.41
48.10	1.45	0.00	1.45
48.15	1.48	0.00	1.48
48.20	1.52	0.00	1.52
48.25	1.56	0.00	1.56
48.30	1.59	0.00	1.59
48.35	1.63	0.00	1.63
48.40	1.66	0.00	1.66
48.45	1.70	0.00	1.70
48.50	1.74	0.00	1.74
48.55	1.78	0.01	1.77
48.60	1.84	0.03	1.81
48.65	1.91	0.07	1.84
48.70	1.99	0.11	1.88
48.75	2.08	0.17	1.92
48.80	2.18	0.23	1.95
48.85	2.28	0.30	1.99
48.90	2.39	0.36	2.03
48.95	2.49	0.43	2.06
49.00	2.57	0.47	2.10
49.05	2.65	0.52	2.13
49.10	2.73	0.56	2.17
49.15	2.95	0.74	2.21
49.20	3.29	1.05	2.24
49.25	3.71	1.44	2.28
49.30	4.20	1.89	2.31
49.35	4.74	2.39	2.35
49.40	5.34	2.95	2.39
49.45	5.98	3.56	2.42
49.50	6.66	4.21	2.46
49.55	7.39	4.90	2.50
49.60	8.16	5.63	2.53
49.65	8.97	6.40	2.57
49.70	9.82	7.21	2.60
49.75	10.70	8.06	2.64
49.80	11.61	8.94	2.68

Stage-Area-Storage for Pond P-101: SWMB P-101

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.40	8,124	0
47.45	8,124	162
47.50	8,124	325
47.55	8,124	487
47.60	8,124	650
47.65	8,124	812
47.70	8,124	975
47.75	8,124	1,137
47.80	8,124	1,300
47.85	8,124	1,462
47.90	8,124	1,625
47.95	8,124	1,954
48.00	8,124	2,282
48.05	8,124	2,609
48.10	8,124	2,933
48.15	8,124	3,254
48.20	8,124	3,572
48.25	8,124	3,887
48.30	8,124	4,199
48.35	8,124	4,506
48.40	8,124	4,810
48.45	8,124	5,109
48.50	8,124	5,403
48.55	8,124	5,694
48.60	8,124	5,979
48.65	8,124	6,258
48.70	8,124	6,531
48.75	8,124	6,797
48.80	8,124	7,055
48.85	8,124	7,306
48.90	8,124	7,546
48.95	8,124	7,774
49.00	8,124	7,987
49.05	8,124	8,185
49.10	8,124	8,372
49.15	8,124	8,550
49.20	8,124	8,722
49.25	8,124	8,886
49.30	8,124	9,049
49.35	8,124	9,211
49.40	8,124	9,374
49.45	8,124	9,536
49.50	8,124	9,699
49.55	8,124	9,861
49.60	8,124	10,023
49.65	8,124	10,186
49.70	8,124	10,348
49.75	8,124	10,457
49.80	8,124	10,457

Summary for Pond P-102: SWMB P-102

Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 5.40" for 25-yr event
 Inflow = 12.19 cfs @ 12.05 hrs, Volume= 39,528 cf
 Outflow = 2.76 cfs @ 12.37 hrs, Volume= 39,525 cf, Atten= 77%, Lag= 19.2 min
 Primary = 0.09 cfs @ 12.37 hrs, Volume= 133 cf
 Routed to Pond 3R : OCS-102 to MH-101
 Secondary = 2.67 cfs @ 12.37 hrs, Volume= 39,392 cf
 Routed to Pond 3R : OCS-102 to MH-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 48.71' @ 12.37 hrs Surf.Area= 10,996 sf Storage= 8,164 cf

Plug-Flow detention time= 18.5 min calculated for 39,525 cf (100% of inflow)
 Center-of-Mass det. time= 18.4 min (797.3 - 778.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.50'	7,657 cf	114.83'W x 95.76'L x 2.33'H Field A 25,658 cf Overall - 6,516 cf Embedded = 19,142 cf x 40.0% Voids
#2A	48.00'	6,516 cf	ADS_StormTech SC-310 +Cap x 442 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 442 Chambers in 34 Rows
		14,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	4.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.15'	4.0' long x 3.90' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.50'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.40'

Primary OutFlow Max=0.09 cfs @ 12.37 hrs HW=48.71' (Free Discharge)

↑1=Low Level Orifice (Orifice Controls 0.09 cfs @ 1.55 fps)

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

Secondary OutFlow Max=2.67 cfs @ 12.37 hrs HW=48.71' (Free Discharge)

↑3=Underdrain (Controls 2.67 cfs)

Pond P-102: SWMB P-102 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

34 Rows x 34.0" Wide + 6.0" Spacing x 33 + 12.0" Side Stone x 2 = 114.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

442 Chambers x 14.7 cf = 6,515.9 cf Chamber Storage

25,658.4 cf Field - 6,515.9 cf Chambers = 19,142.4 cf Stone x 40.0% Voids = 7,657.0 cf Stone Storage

Chamber Storage + Stone Storage = 14,172.9 cf = 0.325 af

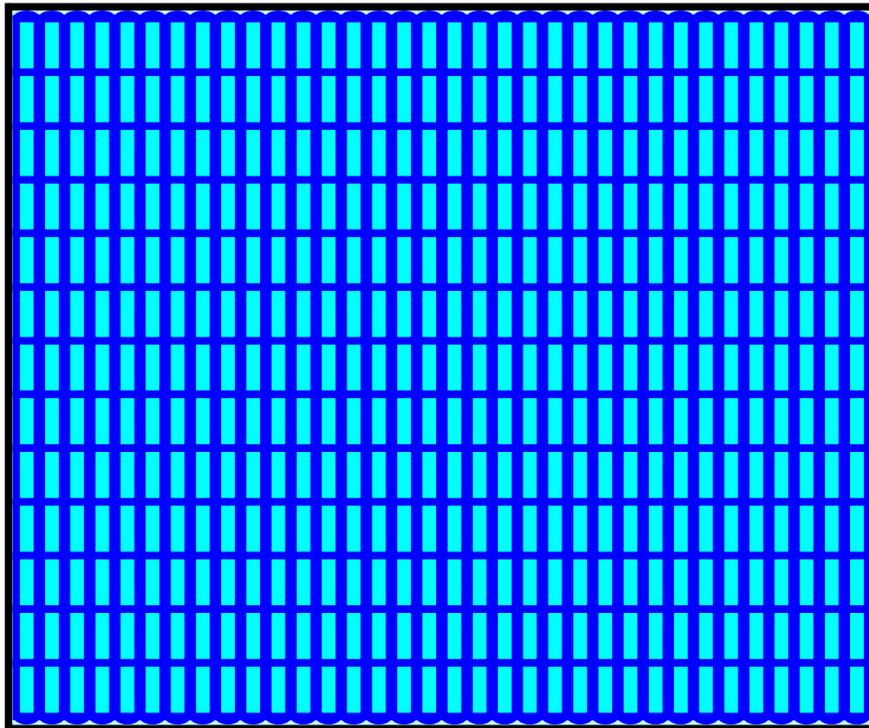
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 114.83' x 2.33'

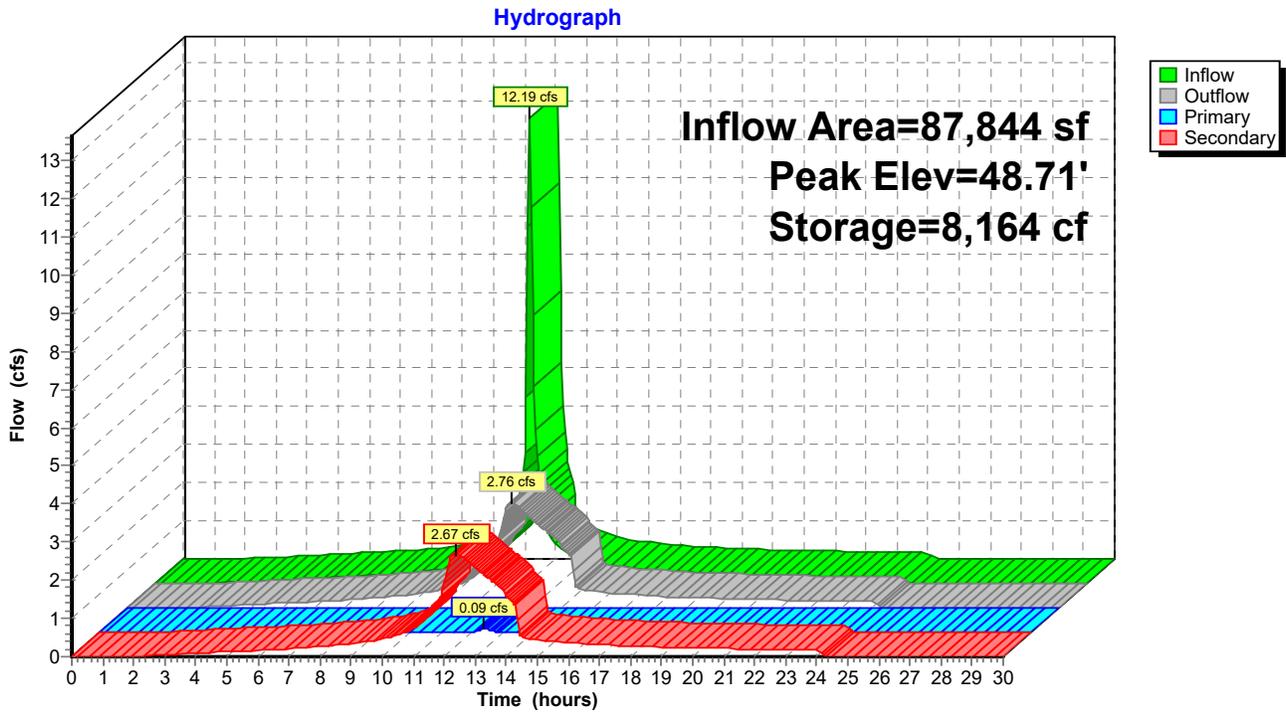
442 Chambers

950.3 cy Field

709.0 cy Stone



Pond P-102: SWMB P-102



Stage-Discharge for Pond P-102: SWMB P-102

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.50	0.00	0.00	0.00	52.70	108.50	101.21	7.29
47.60	1.39	0.00	1.39	52.80	113.09	105.68	7.41
47.70	1.50	0.00	1.50	52.90	117.74	110.22	7.52
47.80	1.62	0.00	1.62	53.00	122.46	114.82	7.64
47.90	1.74	0.00	1.74				
48.00	1.85	0.00	1.85				
48.10	1.97	0.00	1.97				
48.20	2.08	0.00	2.08				
48.30	2.20	0.00	2.20				
48.40	2.31	0.00	2.31				
48.50	2.43	0.00	2.43				
48.60	2.57	0.02	2.55				
48.70	2.74	0.08	2.66				
48.80	2.93	0.15	2.78				
48.90	3.10	0.20	2.89				
49.00	3.25	0.24	3.01				
49.10	3.40	0.28	3.12				
49.20	3.69	0.45	3.24				
49.30	4.46	1.10	3.36				
49.40	5.49	2.02	3.47				
49.50	6.73	3.15	3.59				
49.60	8.16	4.46	3.70				
49.70	9.75	5.93	3.82				
49.80	11.49	7.56	3.93				
49.90	13.38	9.33	4.05				
50.00	15.39	11.23	4.17				
50.10	17.54	13.26	4.28				
50.20	19.81	15.41	4.40				
50.30	22.20	17.68	4.51				
50.40	24.70	20.07	4.63				
50.50	27.32	22.57	4.74				
50.60	30.04	25.18	4.86				
50.70	32.87	27.90	4.98				
50.80	35.81	30.72	5.09				
50.90	38.84	33.64	5.21				
51.00	41.98	36.65	5.32				
51.10	45.21	39.77	5.44				
51.20	48.53	42.98	5.55				
51.30	51.95	46.28	5.67				
51.40	55.46	49.68	5.79				
51.50	59.06	53.16	5.90				
51.60	62.74	56.73	6.02				
51.70	66.51	60.38	6.13				
51.80	70.37	64.12	6.25				
51.90	74.30	67.94	6.36				
52.00	78.31	71.83	6.48				
52.10	82.41	75.81	6.60				
52.20	86.57	79.86	6.71				
52.30	90.82	83.99	6.83				
52.40	95.13	88.19	6.94				
52.50	99.52	92.46	7.06				
52.60	103.98	96.80	7.17				

Stage-Area-Storage for Pond P-102: SWMB P-102

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.50	10,996	0	52.70	10,996	14,173
47.60	10,996	440	52.80	10,996	14,173
47.70	10,996	880	52.90	10,996	14,173
47.80	10,996	1,320	53.00	10,996	14,173
47.90	10,996	1,759			
48.00	10,996	2,199			
48.10	10,996	3,092			
48.20	10,996	3,974			
48.30	10,996	4,842			
48.40	10,996	5,692			
48.50	10,996	6,520			
48.60	10,996	7,326			
48.70	10,996	8,106			
48.80	10,996	8,855			
48.90	10,996	9,566			
49.00	10,996	10,232			
49.10	10,996	10,829			
49.20	10,996	11,350			
49.30	10,996	11,824			
49.40	10,996	12,267			
49.50	10,996	12,707			
49.60	10,996	13,147			
49.70	10,996	13,586			
49.80	10,996	14,026			
49.90	10,996	14,173			
50.00	10,996	14,173			
50.10	10,996	14,173			
50.20	10,996	14,173			
50.30	10,996	14,173			
50.40	10,996	14,173			
50.50	10,996	14,173			
50.60	10,996	14,173			
50.70	10,996	14,173			
50.80	10,996	14,173			
50.90	10,996	14,173			
51.00	10,996	14,173			
51.10	10,996	14,173			
51.20	10,996	14,173			
51.30	10,996	14,173			
51.40	10,996	14,173			
51.50	10,996	14,173			
51.60	10,996	14,173			
51.70	10,996	14,173			
51.80	10,996	14,173			
51.90	10,996	14,173			
52.00	10,996	14,173			
52.10	10,996	14,173			
52.20	10,996	14,173			
52.30	10,996	14,173			
52.40	10,996	14,173			
52.50	10,996	14,173			
52.60	10,996	14,173			

Summary for Pond P-103: SWMB P-103

Inflow Area = 24,111 sf, 91.05% Impervious, Inflow Depth = 5.63" for 25-yr event
 Inflow = 3.72 cfs @ 12.02 hrs, Volume= 11,312 cf
 Outflow = 1.68 cfs @ 12.14 hrs, Volume= 11,312 cf, Atten= 55%, Lag= 7.3 min
 Primary = 1.34 cfs @ 12.14 hrs, Volume= 2,762 cf
 Routed to Reach 2R : 18" HDPE
 Secondary = 0.34 cfs @ 12.14 hrs, Volume= 8,550 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 51.27' @ 12.14 hrs Surf.Area= 2,096 sf Storage= 1,882 cf

Plug-Flow detention time= 12.6 min calculated for 11,293 cf (100% of inflow)
 Center-of-Mass det. time= 12.6 min (778.2 - 765.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.80'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	50.30'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	50.30'	8.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	51.40'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	49.80'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.00'

Primary OutFlow Max=1.34 cfs @ 12.14 hrs HW=51.27' (Free Discharge)

↑1=Low Level Orifice (Orifice Controls 1.34 cfs @ 3.84 fps)

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

Secondary OutFlow Max=0.34 cfs @ 12.14 hrs HW=51.27' (Free Discharge)

↑3=Underdrain (Controls 0.34 cfs)

Pond P-103: SWMB P-103 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

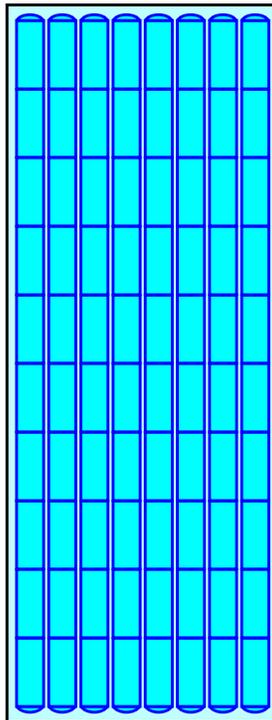
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

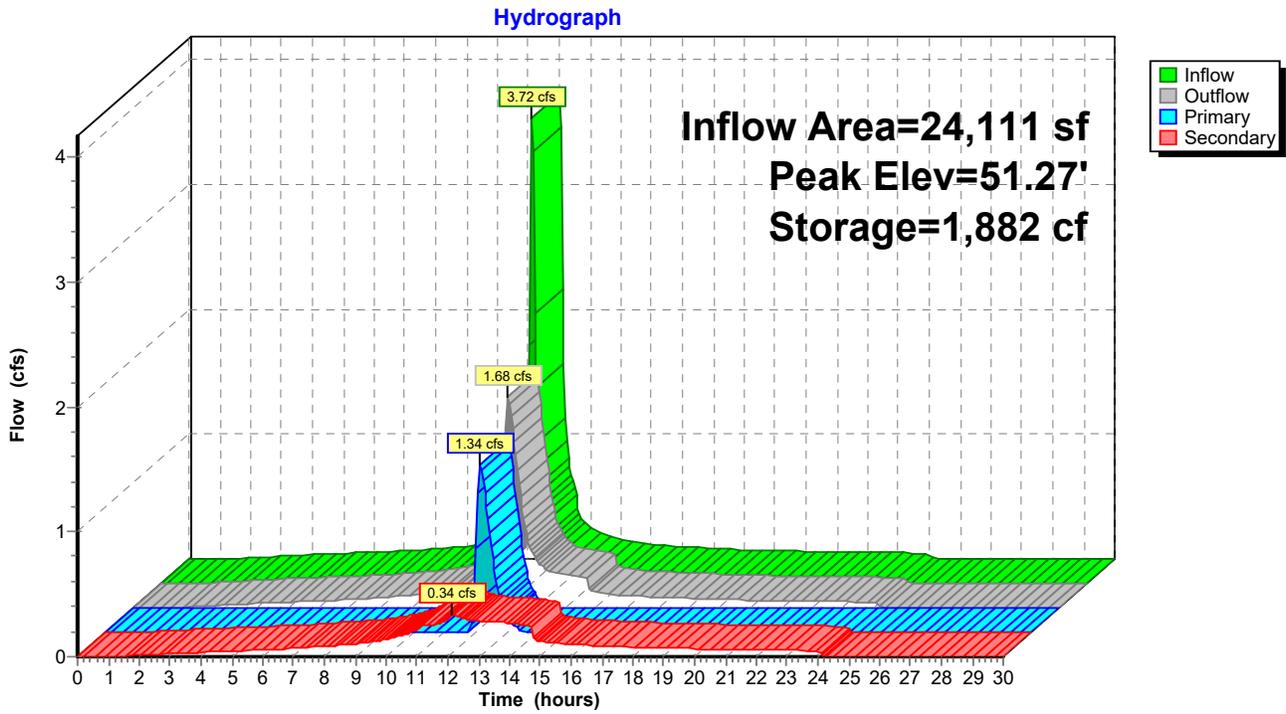
80 Chambers

181.1 cy Field

137.4 cy Stone



Pond P-103: SWMB P-103



Stage-Discharge for Pond P-103: SWMB P-103

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
49.80	0.00	0.00	0.00	52.40	16.45	16.04	0.41
49.85	0.25	0.00	0.25	52.45	17.57	17.16	0.41
49.90	0.25	0.00	0.25	52.50	18.72	18.30	0.41
49.95	0.25	0.00	0.25	52.55	19.89	19.47	0.42
50.00	0.26	0.00	0.26	52.60	21.10	20.68	0.42
50.05	0.26	0.00	0.26	52.65	22.33	21.91	0.42
50.10	0.26	0.00	0.26	52.70	23.59	23.16	0.43
50.15	0.26	0.00	0.26	52.75	24.88	24.45	0.43
50.20	0.27	0.00	0.27	52.80	26.20	25.76	0.43
50.25	0.27	0.00	0.27	52.85	27.54	27.10	0.44
50.30	0.27	0.00	0.27	52.90	28.91	28.47	0.44
50.35	0.29	0.01	0.28	52.95	30.30	29.86	0.44
50.40	0.32	0.04	0.28	53.00	31.72	31.27	0.45
50.45	0.36	0.08	0.28	53.05	33.17	32.72	0.45
50.50	0.42	0.13	0.29	53.10	34.64	34.18	0.45
50.55	0.49	0.20	0.29	53.15	36.13	35.67	0.46
50.60	0.58	0.28	0.29	53.20	37.65	37.19	0.46
50.65	0.67	0.37	0.30	53.25	39.19	38.73	0.46
50.70	0.77	0.47	0.30	53.30	40.76	40.30	0.47
50.75	0.88	0.57	0.30	53.35	42.35	41.89	0.47
50.80	0.98	0.68	0.31	53.40	43.97	43.50	0.47
50.85	1.09	0.78	0.31	53.45	45.61	45.13	0.48
50.90	1.19	0.87	0.31	53.50	47.27	46.79	0.48
50.95	1.27	0.95	0.32	53.55	48.95	48.47	0.48
51.00	1.34	1.02	0.32	53.60	50.66	50.18	0.49
51.05	1.41	1.08	0.32	53.65	52.39	51.90	0.49
51.10	1.47	1.15	0.33	53.70	54.14	53.65	0.49
51.15	1.54	1.21	0.33	53.75	55.91	55.42	0.49
51.20	1.60	1.27	0.33	53.80	57.71	57.21	0.50
51.25	1.65	1.32	0.34	53.85	59.52	59.02	0.50
51.30	1.71	1.37	0.34	53.90	61.36	60.86	0.50
51.35	1.76	1.42	0.34	53.95	63.22	62.71	0.51
51.40	1.82	1.47	0.34	54.00	65.10	64.59	0.51
51.45	2.01	1.67	0.35				
51.50	2.33	1.98	0.35				
51.55	2.73	2.38	0.35				
51.60	3.19	2.84	0.36				
51.65	3.71	3.35	0.36				
51.70	4.29	3.92	0.36				
51.75	4.91	4.54	0.37				
51.80	5.57	5.20	0.37				
51.85	6.28	5.91	0.37				
51.90	7.03	6.65	0.38				
51.95	7.81	7.43	0.38				
52.00	8.64	8.25	0.38				
52.05	9.50	9.11	0.39				
52.10	10.39	10.00	0.39				
52.15	11.32	10.93	0.39				
52.20	12.28	11.89	0.40				
52.25	13.28	12.88	0.40				
52.30	14.30	13.90	0.40				
52.35	15.36	14.96	0.41				

Stage-Area-Storage for Pond P-103: SWMB P-103

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.80	2,096	0	52.40	2,096	2,664
49.85	2,096	42	52.45	2,096	2,664
49.90	2,096	84	52.50	2,096	2,664
49.95	2,096	126	52.55	2,096	2,664
50.00	2,096	168	52.60	2,096	2,664
50.05	2,096	210	52.65	2,096	2,664
50.10	2,096	251	52.70	2,096	2,664
50.15	2,096	293	52.75	2,096	2,664
50.20	2,096	335	52.80	2,096	2,664
50.25	2,096	377	52.85	2,096	2,664
50.30	2,096	419	52.90	2,096	2,664
50.35	2,096	502	52.95	2,096	2,664
50.40	2,096	585	53.00	2,096	2,664
50.45	2,096	667	53.05	2,096	2,664
50.50	2,096	749	53.10	2,096	2,664
50.55	2,096	830	53.15	2,096	2,664
50.60	2,096	910	53.20	2,096	2,664
50.65	2,096	990	53.25	2,096	2,664
50.70	2,096	1,068	53.30	2,096	2,664
50.75	2,096	1,146	53.35	2,096	2,664
50.80	2,096	1,222	53.40	2,096	2,664
50.85	2,096	1,298	53.45	2,096	2,664
50.90	2,096	1,372	53.50	2,096	2,664
50.95	2,096	1,446	53.55	2,096	2,664
51.00	2,096	1,518	53.60	2,096	2,664
51.05	2,096	1,588	53.65	2,096	2,664
51.10	2,096	1,657	53.70	2,096	2,664
51.15	2,096	1,725	53.75	2,096	2,664
51.20	2,096	1,790	53.80	2,096	2,664
51.25	2,096	1,854	53.85	2,096	2,664
51.30	2,096	1,915	53.90	2,096	2,664
51.35	2,096	1,973	53.95	2,096	2,664
51.40	2,096	2,027	54.00	2,096	2,664
51.45	2,096	2,078			
51.50	2,096	2,126			
51.55	2,096	2,172			
51.60	2,096	2,216			
51.65	2,096	2,258			
51.70	2,096	2,300			
51.75	2,096	2,342			
51.80	2,096	2,384			
51.85	2,096	2,426			
51.90	2,096	2,468			
51.95	2,096	2,510			
52.00	2,096	2,552			
52.05	2,096	2,594			
52.10	2,096	2,636			
52.15	2,096	2,664			
52.20	2,096	2,664			
52.25	2,096	2,664			
52.30	2,096	2,664			
52.35	2,096	2,664			

Summary for Pond P-104: P-104

Inflow Area = 17,421 sf, 91.84% Impervious, Inflow Depth = 5.63" for 25-yr event
 Inflow = 2.69 cfs @ 12.02 hrs, Volume= 8,174 cf
 Outflow = 1.02 cfs @ 12.17 hrs, Volume= 8,174 cf, Atten= 62%, Lag= 8.9 min
 Primary = 0.55 cfs @ 12.17 hrs, Volume= 1,015 cf
 Routed to Pond 5R : MH-102 to MH-103
 Secondary = 0.47 cfs @ 12.17 hrs, Volume= 7,159 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 49.76' @ 12.17 hrs Surf.Area= 2,096 sf Storage= 1,351 cf

Plug-Flow detention time= 10.7 min calculated for 8,160 cf (100% of inflow)
 Center-of-Mass det. time= 10.7 min (776.3 - 765.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	48.67'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	49.17'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	49.17'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	50.25'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	48.67'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 47.50'

Primary OutFlow Max=0.54 cfs @ 12.17 hrs HW=49.75' (Free Discharge)

↑1=Low Level Orifice (Orifice Controls 0.54 cfs @ 2.77 fps)

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

Secondary OutFlow Max=0.47 cfs @ 12.17 hrs HW=49.75' (Free Discharge)

↑3=Underdrain (Controls 0.47 cfs)

Pond P-104: P-104 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

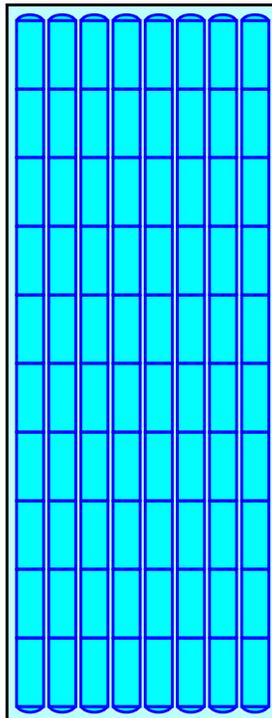
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

80 Chambers

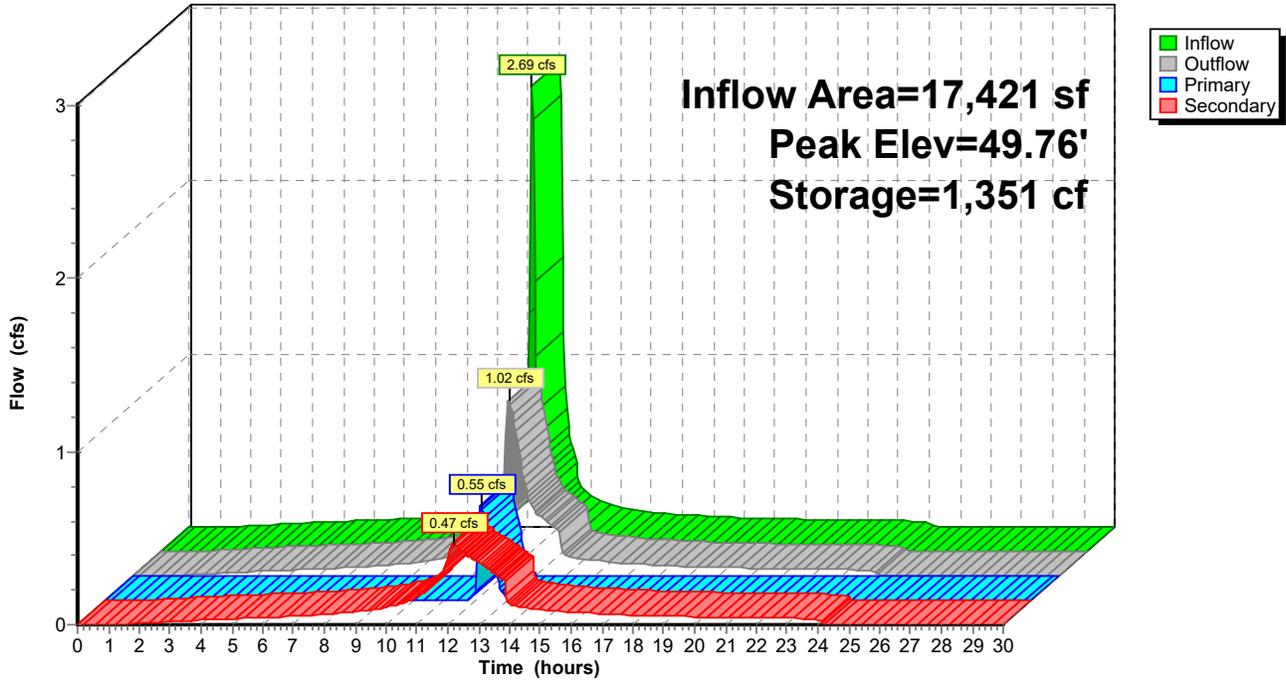
181.1 cy Field

137.4 cy Stone



Pond P-104: P-104

Hydrograph



Stage-Discharge for Pond P-104: P-104

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
48.67	0.00	0.00	0.00	51.27	16.31	15.52	0.78
48.72	0.25	0.00	0.25	51.32	17.43	16.64	0.79
48.77	0.26	0.00	0.26	51.37	18.58	17.78	0.80
48.82	0.27	0.00	0.27	51.42	19.76	18.95	0.81
48.87	0.28	0.00	0.28	51.47	20.97	20.15	0.82
48.92	0.29	0.00	0.29	51.52	22.21	21.38	0.83
48.97	0.30	0.00	0.30	51.57	23.48	22.63	0.84
49.02	0.32	0.00	0.32	51.62	24.77	23.92	0.85
49.07	0.33	0.00	0.33	51.67	26.09	25.23	0.86
49.12	0.34	0.00	0.34	51.72	27.44	26.56	0.87
49.17	0.35	0.00	0.35	51.77	28.81	27.93	0.89
49.22	0.36	0.01	0.36	51.82	30.21	29.32	0.90
49.27	0.40	0.03	0.37	51.87	31.64	30.73	0.91
49.32	0.44	0.07	0.38	51.92	33.09	32.17	0.92
49.37	0.50	0.11	0.39	51.97	34.56	33.64	0.93
49.42	0.57	0.17	0.40	52.02	36.06	35.13	0.94
49.47	0.64	0.23	0.41	52.07	37.59	36.64	0.95
49.52	0.71	0.30	0.42	52.12	39.14	38.18	0.96
49.57	0.79	0.36	0.43	52.17	40.71	39.74	0.97
49.62	0.86	0.43	0.44	52.22	42.31	41.33	0.98
49.67	0.92	0.47	0.45	52.27	43.93	42.94	0.99
49.72	0.98	0.52	0.46	52.32	45.57	44.57	1.00
49.77	1.03	0.56	0.47	52.37	47.24	46.23	1.01
49.82	1.08	0.60	0.48	52.42	48.93	47.91	1.02
49.87	1.13	0.63	0.49	52.47	50.64	49.61	1.03
49.92	1.17	0.67	0.50	52.52	52.37	51.33	1.04
49.97	1.21	0.70	0.51	52.57	54.13	53.08	1.05
50.02	1.25	0.73	0.52	52.62	55.91	54.85	1.06
50.07	1.29	0.76	0.53	52.67	57.71	56.64	1.07
50.12	1.33	0.79	0.54	52.72	59.53	58.45	1.08
50.17	1.37	0.82	0.55	52.77	61.37	60.28	1.09
50.22	1.41	0.85	0.56	52.82	63.23	62.13	1.10
50.27	1.48	0.91	0.57				
50.32	1.72	1.14	0.58				
50.37	2.06	1.47	0.59				
50.42	2.48	1.87	0.61				
50.47	2.95	2.34	0.62				
50.52	3.48	2.86	0.63				
50.57	4.06	3.43	0.64				
50.62	4.69	4.04	0.65				
50.67	5.36	4.71	0.66				
50.72	6.08	5.41	0.67				
50.77	6.83	6.15	0.68				
50.82	7.62	6.93	0.69				
50.87	8.45	7.75	0.70				
50.92	9.32	8.61	0.71				
50.97	10.22	9.50	0.72				
51.02	11.15	10.42	0.73				
51.07	12.12	11.38	0.74				
51.12	13.12	12.37	0.75				
51.17	14.15	13.39	0.76				
51.22	15.21	14.44	0.77				

Stage-Area-Storage for Pond P-104: P-104

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
48.67	2,096	0	51.27	2,096	2,664
48.72	2,096	42	51.32	2,096	2,664
48.77	2,096	84	51.37	2,096	2,664
48.82	2,096	126	51.42	2,096	2,664
48.87	2,096	168	51.47	2,096	2,664
48.92	2,096	210	51.52	2,096	2,664
48.97	2,096	251	51.57	2,096	2,664
49.02	2,096	293	51.62	2,096	2,664
49.07	2,096	335	51.67	2,096	2,664
49.12	2,096	377	51.72	2,096	2,664
49.17	2,096	419	51.77	2,096	2,664
49.22	2,096	502	51.82	2,096	2,664
49.27	2,096	585	51.87	2,096	2,664
49.32	2,096	667	51.92	2,096	2,664
49.37	2,096	749	51.97	2,096	2,664
49.42	2,096	830	52.02	2,096	2,664
49.47	2,096	910	52.07	2,096	2,664
49.52	2,096	990	52.12	2,096	2,664
49.57	2,096	1,068	52.17	2,096	2,664
49.62	2,096	1,146	52.22	2,096	2,664
49.67	2,096	1,222	52.27	2,096	2,664
49.72	2,096	1,298	52.32	2,096	2,664
49.77	2,096	1,372	52.37	2,096	2,664
49.82	2,096	1,446	52.42	2,096	2,664
49.87	2,096	1,518	52.47	2,096	2,664
49.92	2,096	1,588	52.52	2,096	2,664
49.97	2,096	1,657	52.57	2,096	2,664
50.02	2,096	1,725	52.62	2,096	2,664
50.07	2,096	1,790	52.67	2,096	2,664
50.12	2,096	1,854	52.72	2,096	2,664
50.17	2,096	1,915	52.77	2,096	2,664
50.22	2,096	1,973	52.82	2,096	2,664
50.27	2,096	2,027			
50.32	2,096	2,078			
50.37	2,096	2,126			
50.42	2,096	2,172			
50.47	2,096	2,216			
50.52	2,096	2,258			
50.57	2,096	2,300			
50.62	2,096	2,342			
50.67	2,096	2,384			
50.72	2,096	2,426			
50.77	2,096	2,468			
50.82	2,096	2,510			
50.87	2,096	2,552			
50.92	2,096	2,594			
50.97	2,096	2,636			
51.02	2,096	2,664			
51.07	2,096	2,664			
51.12	2,096	2,664			
51.17	2,096	2,664			
51.22	2,096	2,664			

Summary for Pond P-105: SWMB P-105

Inflow Area = 184,140 sf, 100.00% Impervious, Inflow Depth = 5.98" for 25-yr event
 Inflow = 29.00 cfs @ 12.02 hrs, Volume= 91,788 cf
 Outflow = 4.24 cfs @ 12.52 hrs, Volume= 91,788 cf, Atten= 85%, Lag= 29.9 min
 Discarded = 3.20 cfs @ 12.52 hrs, Volume= 89,861 cf
 Primary = 1.05 cfs @ 12.52 hrs, Volume= 1,927 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 51.13' @ 12.52 hrs Surf.Area= 16,134 sf Storage= 24,042 cf

Plug-Flow detention time= 45.8 min calculated for 91,635 cf (100% of inflow)
 Center-of-Mass det. time= 45.7 min (790.0 - 744.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.00'	14,226 cf	167.75'W x 96.18'L x 3.50'H Field A 56,468 cf Overall - 20,903 cf Embedded = 35,565 cf x 40.0% Voids
#2A	49.50'	20,903 cf	ADS_StormTech SC-740 +Cap x 455 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 455 Chambers in 35 Rows
		35,129 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	4.0' long x 2.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 2.5' Crest Height
#2	Primary	50.70'	6.0" Vert. 6" Low Level Orifice C= 0.600 Limited to weir flow at low heads
#3	Discarded	49.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 46.00'

Discarded OutFlow Max=3.19 cfs @ 12.52 hrs HW=51.13' (Free Discharge)
 ↳ **3=Exfiltration** (Controls 3.19 cfs)

Primary OutFlow Max=1.04 cfs @ 12.52 hrs HW=51.13' (Free Discharge)
 ↳ **1=Sharp-Crested Rectangular Weir** (Weir Controls 0.63 cfs @ 1.20 fps)
 ↳ **2=6" Low Level Orifice** (Orifice Controls 0.40 cfs @ 2.24 fps)

Pond P-105: SWMB P-105 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 94.18' Row Length +12.0" End Stone x 2 = 96.18' Base Length

35 Rows x 51.0" Wide + 6.0" Spacing x 34 + 12.0" Side Stone x 2 = 167.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

455 Chambers x 45.9 cf = 20,902.7 cf Chamber Storage

56,467.7 cf Field - 20,902.7 cf Chambers = 35,565.0 cf Stone x 40.0% Voids = 14,226.0 cf Stone Storage

Chamber Storage + Stone Storage = 35,128.7 cf = 0.806 af

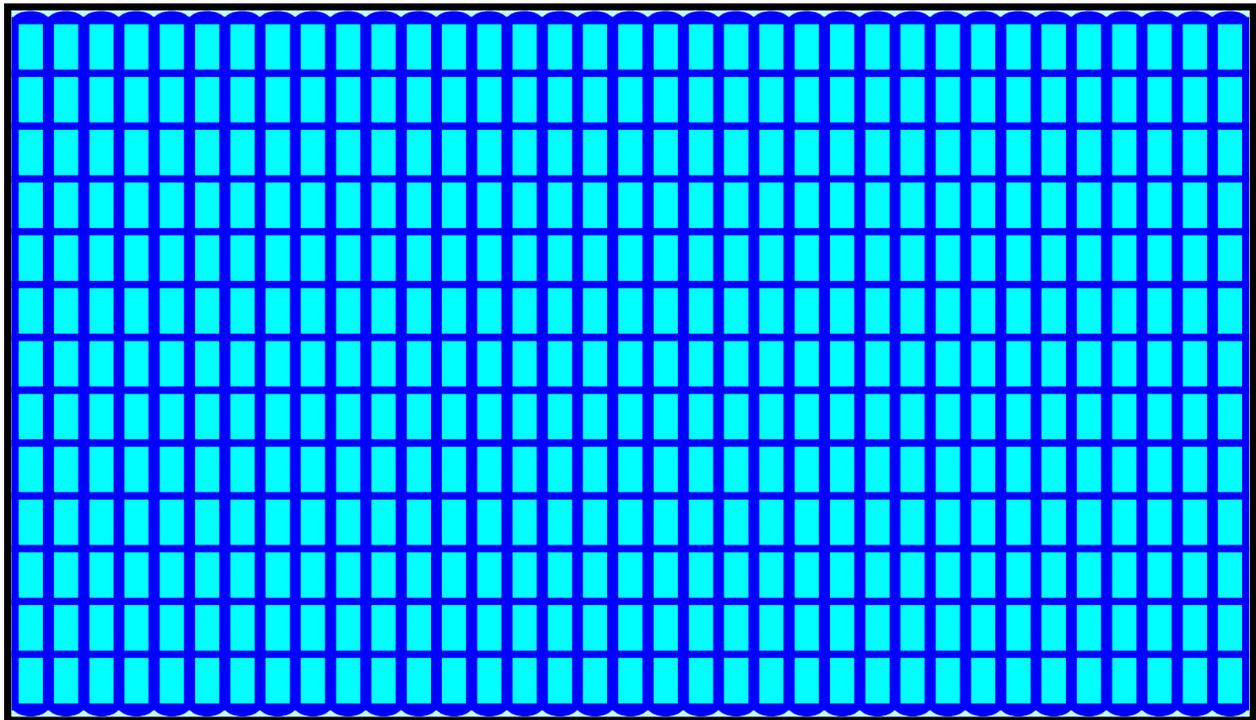
Overall Storage Efficiency = 62.2%

Overall System Size = 96.18' x 167.75' x 3.50'

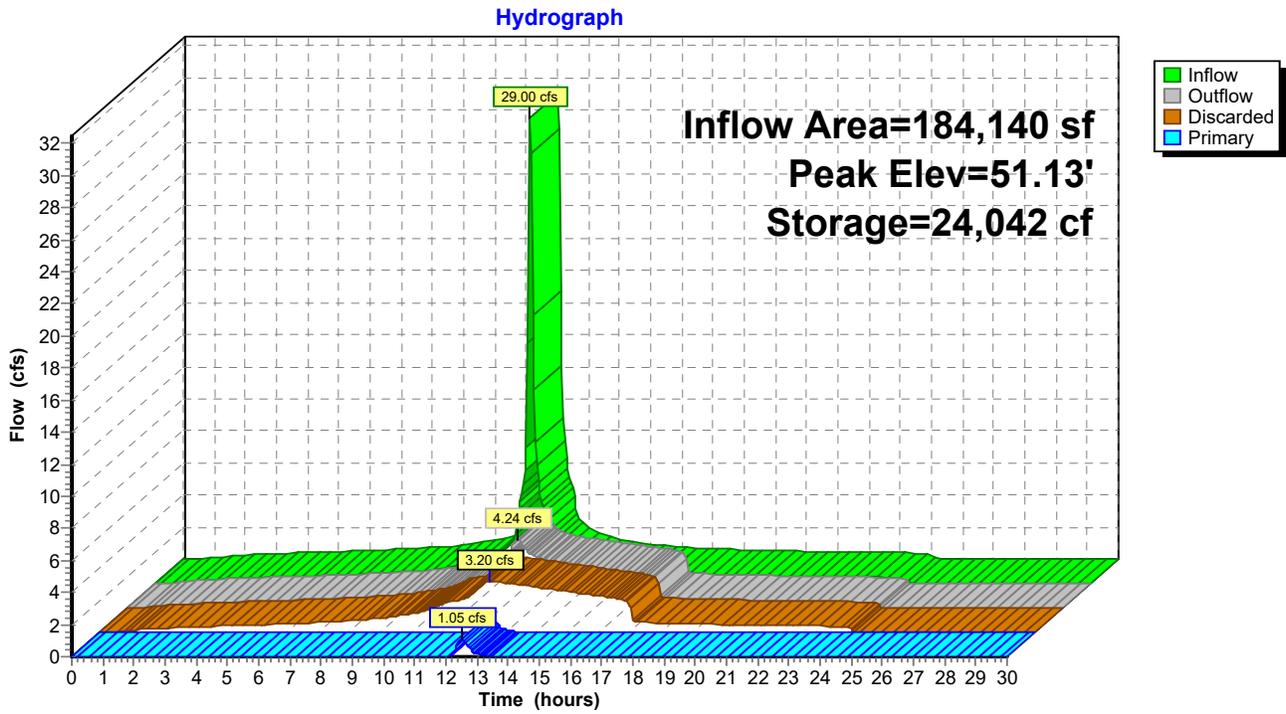
455 Chambers

2,091.4 cy Field

1,317.2 cy Stone



Pond P-105: SWMB P-105



Stage-Discharge for Pond P-105: SWMB P-105

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
49.00	0.00	0.00	0.00	51.60	10.32	3.49	6.83
49.05	1.90	1.90	0.00	51.65	11.15	3.52	7.63
49.10	1.93	1.93	0.00	51.70	12.01	3.55	8.46
49.15	1.96	1.96	0.00	51.75	12.90	3.58	9.32
49.20	1.99	1.99	0.00	51.80	13.82	3.61	10.21
49.25	2.02	2.02	0.00	51.85	14.76	3.64	11.12
49.30	2.05	2.05	0.00	51.90	15.73	3.67	12.06
49.35	2.09	2.09	0.00	51.95	16.72	3.70	13.02
49.40	2.12	2.12	0.00	52.00	17.74	3.73	14.00
49.45	2.15	2.15	0.00	52.05	18.78	3.77	15.01
49.50	2.18	2.18	0.00	52.10	19.84	3.80	16.04
49.55	2.21	2.21	0.00	52.15	20.92	3.83	17.09
49.60	2.24	2.24	0.00	52.20	22.03	3.86	18.17
49.65	2.27	2.27	0.00	52.25	23.15	3.89	19.26
49.70	2.30	2.30	0.00	52.30	24.30	3.92	20.38
49.75	2.33	2.33	0.00	52.35	25.47	3.95	21.51
49.80	2.37	2.37	0.00	52.40	26.65	3.98	22.67
49.85	2.40	2.40	0.00	52.45	27.86	4.01	23.84
49.90	2.43	2.43	0.00	52.50	29.08	4.05	25.04
49.95	2.46	2.46	0.00	52.55	30.32	4.08	26.25
50.00	2.49	2.49	0.00	52.60	31.58	4.11	27.48
50.05	2.52	2.52	0.00	52.65	32.86	4.14	28.72
50.10	2.55	2.55	0.00	52.70	34.16	4.17	29.99
50.15	2.58	2.58	0.00	52.75	35.47	4.20	31.27
50.20	2.61	2.61	0.00	52.80	36.79	4.23	32.56
50.25	2.65	2.65	0.00	52.85	38.14	4.26	33.88
50.30	2.68	2.68	0.00	52.90	39.50	4.29	35.20
50.35	2.71	2.71	0.00	52.95	40.87	4.33	36.55
50.40	2.74	2.74	0.00	53.00	42.27	4.36	37.91
50.45	2.77	2.77	0.00				
50.50	2.80	2.80	0.00				
50.55	2.83	2.83	0.00				
50.60	2.86	2.86	0.00				
50.65	2.89	2.89	0.00				
50.70	2.93	2.93	0.00				
50.75	2.96	2.96	0.01				
50.80	3.02	2.99	0.03				
50.85	3.08	3.02	0.07				
50.90	3.16	3.05	0.11				
50.95	3.25	3.08	0.17				
51.00	3.34	3.11	0.23				
51.05	3.59	3.14	0.44				
51.10	3.95	3.17	0.78				
51.15	4.39	3.21	1.18				
51.20	4.88	3.24	1.64				
51.25	5.42	3.27	2.15				
51.30	6.01	3.30	2.71				
51.35	6.63	3.33	3.30				
51.40	7.30	3.36	3.94				
51.45	8.01	3.39	4.61				
51.50	8.74	3.42	5.32				
51.55	9.51	3.45	6.06				

Stage-Area-Storage for Pond P-105: SWMB P-105

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.00	16,134	0	51.60	16,134	28,842
49.05	16,134	323	51.65	16,134	29,294
49.10	16,134	645	51.70	16,134	29,728
49.15	16,134	968	51.75	16,134	30,136
49.20	16,134	1,291	51.80	16,134	30,521
49.25	16,134	1,613	51.85	16,134	30,884
49.30	16,134	1,936	51.90	16,134	31,234
49.35	16,134	2,259	51.95	16,134	31,573
49.40	16,134	2,581	52.00	16,134	31,902
49.45	16,134	2,904	52.05	16,134	32,225
49.50	16,134	3,227	52.10	16,134	32,547
49.55	16,134	3,911	52.15	16,134	32,870
49.60	16,134	4,594	52.20	16,134	33,193
49.65	16,134	5,277	52.25	16,134	33,515
49.70	16,134	5,958	52.30	16,134	33,838
49.75	16,134	6,637	52.35	16,134	34,161
49.80	16,134	7,313	52.40	16,134	34,483
49.85	16,134	7,987	52.45	16,134	34,806
49.90	16,134	8,659	52.50	16,134	35,129
49.95	16,134	9,328	52.55	16,134	35,129
50.00	16,134	9,994	52.60	16,134	35,129
50.05	16,134	10,658	52.65	16,134	35,129
50.10	16,134	11,318	52.70	16,134	35,129
50.15	16,134	11,975	52.75	16,134	35,129
50.20	16,134	12,629	52.80	16,134	35,129
50.25	16,134	13,279	52.85	16,134	35,129
50.30	16,134	13,926	52.90	16,134	35,129
50.35	16,134	14,570	52.95	16,134	35,129
50.40	16,134	15,209	53.00	16,134	35,129
50.45	16,134	15,845			
50.50	16,134	16,477			
50.55	16,134	17,105			
50.60	16,134	17,728			
50.65	16,134	18,346			
50.70	16,134	18,959			
50.75	16,134	19,567			
50.80	16,134	20,170			
50.85	16,134	20,767			
50.90	16,134	21,359			
50.95	16,134	21,945			
51.00	16,134	22,525			
51.05	16,134	23,098			
51.10	16,134	23,666			
51.15	16,134	24,225			
51.20	16,134	24,776			
51.25	16,134	25,318			
51.30	16,134	25,851			
51.35	16,134	26,376			
51.40	16,134	26,891			
51.45	16,134	27,396			
51.50	16,134	27,891			
51.55	16,134	28,373			

Summary for Pond P-106: SWMB-106

Inflow Area = 60,202 sf, 78.09% Impervious, Inflow Depth = 4.73" for 25-yr event
 Inflow = 8.08 cfs @ 12.03 hrs, Volume= 23,720 cf
 Outflow = 7.65 cfs @ 12.06 hrs, Volume= 23,738 cf, Atten= 5%, Lag= 1.6 min
 Discarded = 0.53 cfs @ 12.06 hrs, Volume= 16,357 cf
 Primary = 7.12 cfs @ 12.06 hrs, Volume= 7,381 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 48.10' @ 12.06 hrs Surf.Area= 2,697 sf Storage= 3,190 cf

Plug-Flow detention time= 23.8 min calculated for 23,698 cf (100% of inflow)
 Center-of-Mass det. time= 24.2 min (828.2 - 804.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.00'	1,904 cf	28.17"W x 95.76"L x 2.33'H Field A 6,294 cf Overall - 1,533 cf Embedded = 4,760 cf x 40.0% Voids
#2A	46.50'	1,533 cf	ADS_StormTech SC-310 +Cap x 104 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 104 Chambers in 8 Rows
		3,437 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	47.50'	4.0' long x 5.00' rise Weir Wall 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.00'

Discarded OutFlow Max=0.53 cfs @ 12.06 hrs HW=48.08' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 0.53 cfs)

Primary OutFlow Max=6.82 cfs @ 12.06 hrs HW=48.09' (Free Discharge)
 ↑ **1=Low Level Orifice** (Orifice Controls 0.86 cfs @ 4.40 fps)
 ↓ **2=Weir Wall** (Weir Controls 5.95 cfs @ 2.62 fps)

Pond P-106: SWMB-106 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

104 Chambers x 14.7 cf = 1,533.2 cf Chamber Storage

6,293.6 cf Field - 1,533.2 cf Chambers = 4,760.4 cf Stone x 40.0% Voids = 1,904.2 cf Stone Storage

Chamber Storage + Stone Storage = 3,437.3 cf = 0.079 af

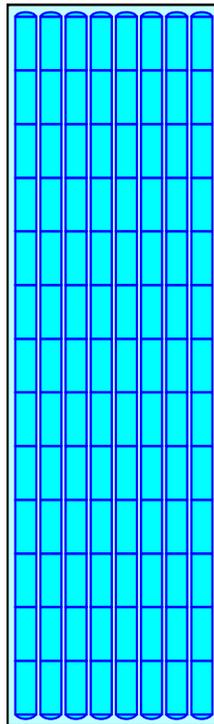
Overall Storage Efficiency = 54.6%

Overall System Size = 95.76' x 28.17' x 2.33'

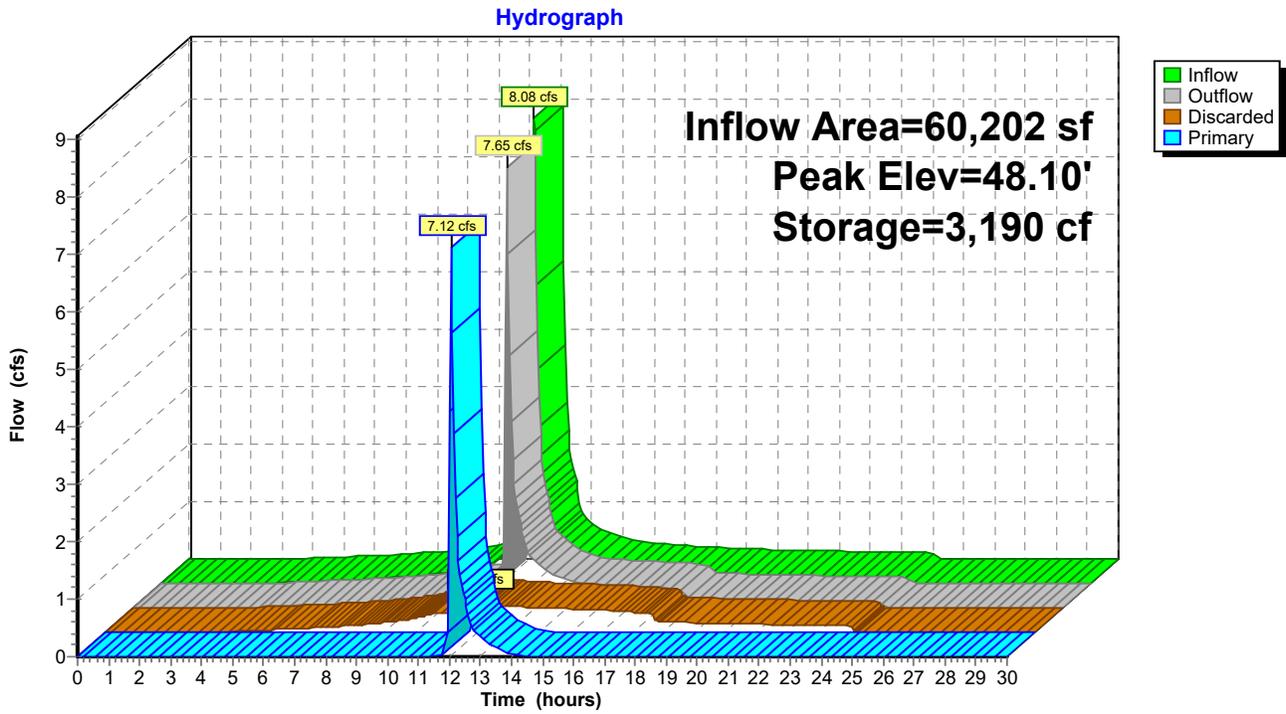
104 Chambers

233.1 cy Field

176.3 cy Stone



Pond P-106: SWMB-106



Stage-Discharge for Pond P-106: SWMB-106

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.00	0.00	0.00	0.00	51.20	101.49	0.85	100.64
46.10	0.32	0.32	0.00	51.30	105.57	0.86	104.70
46.20	0.33	0.33	0.00	51.40	109.69	0.87	108.81
46.30	0.34	0.34	0.00	51.50	113.85	0.88	112.97
46.40	0.35	0.35	0.00	51.60	118.06	0.89	117.16
46.50	0.36	0.36	0.00	51.70	122.31	0.91	121.40
46.60	0.37	0.37	0.00	51.80	126.59	0.92	125.68
46.70	0.39	0.39	0.00	51.90	130.92	0.93	129.99
46.80	0.40	0.40	0.00	52.00	135.28	0.94	134.34
46.90	0.41	0.41	0.00	52.10	139.67	0.95	138.72
47.00	0.42	0.42	0.00	52.20	144.10	0.96	143.14
47.10	0.46	0.43	0.03	52.30	148.55	0.97	147.59
47.20	0.55	0.44	0.11	52.40	153.04	0.98	152.06
47.30	0.68	0.45	0.23	52.50	157.56	0.99	156.57
47.40	0.82	0.46	0.36				
47.50	0.94	0.47	0.47				
47.60	1.45	0.48	0.97				
47.70	2.30	0.49	1.81				
47.80	3.37	0.50	2.87				
47.90	4.62	0.51	4.11				
48.00	6.03	0.52	5.51				
48.10	7.59	0.53	7.06				
48.20	9.28	0.54	8.74				
48.30	11.09	0.55	10.54				
48.40	13.02	0.56	12.46				
48.50	15.07	0.57	14.50				
48.60	17.22	0.58	16.64				
48.70	19.48	0.59	18.88				
48.80	21.83	0.60	21.23				
48.90	24.28	0.61	23.67				
49.00	26.82	0.62	26.20				
49.10	29.45	0.63	28.82				
49.20	32.17	0.65	31.53				
49.30	34.97	0.66	34.32				
49.40	37.86	0.67	37.19				
49.50	40.82	0.68	40.14				
49.60	43.86	0.69	43.18				
49.70	46.98	0.70	46.28				
49.80	50.17	0.71	49.46				
49.90	53.43	0.72	52.71				
50.00	56.76	0.73	56.03				
50.10	60.16	0.74	59.42				
50.20	63.62	0.75	62.87				
50.30	67.15	0.76	66.39				
50.40	70.74	0.77	69.97				
50.50	74.39	0.78	73.61				
50.60	78.10	0.79	77.31				
50.70	81.86	0.80	81.06				
50.80	85.69	0.81	84.87				
50.90	89.56	0.82	88.74				
51.00	93.49	0.83	92.66				
51.10	97.47	0.84	96.62				

Stage-Area-Storage for Pond P-106: SWMB-106

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.00	2,697	0	51.20	2,697	3,437
46.10	2,697	108	51.30	2,697	3,437
46.20	2,697	216	51.40	2,697	3,437
46.30	2,697	324	51.50	2,697	3,437
46.40	2,697	432	51.60	2,697	3,437
46.50	2,697	539	51.70	2,697	3,437
46.60	2,697	754	51.80	2,697	3,437
46.70	2,697	966	51.90	2,697	3,437
46.80	2,697	1,174	52.00	2,697	3,437
46.90	2,697	1,379	52.10	2,697	3,437
47.00	2,697	1,578	52.20	2,697	3,437
47.10	2,697	1,772	52.30	2,697	3,437
47.20	2,697	1,960	52.40	2,697	3,437
47.30	2,697	2,141	52.50	2,697	3,437
47.40	2,697	2,312			
47.50	2,697	2,473			
47.60	2,697	2,618			
47.70	2,697	2,745			
47.80	2,697	2,861			
47.90	2,697	2,970			
48.00	2,697	3,078			
48.10	2,697	3,186			
48.20	2,697	3,293			
48.30	2,697	3,401			
48.40	2,697	3,437			
48.50	2,697	3,437			
48.60	2,697	3,437			
48.70	2,697	3,437			
48.80	2,697	3,437			
48.90	2,697	3,437			
49.00	2,697	3,437			
49.10	2,697	3,437			
49.20	2,697	3,437			
49.30	2,697	3,437			
49.40	2,697	3,437			
49.50	2,697	3,437			
49.60	2,697	3,437			
49.70	2,697	3,437			
49.80	2,697	3,437			
49.90	2,697	3,437			
50.00	2,697	3,437			
50.10	2,697	3,437			
50.20	2,697	3,437			
50.30	2,697	3,437			
50.40	2,697	3,437			
50.50	2,697	3,437			
50.60	2,697	3,437			
50.70	2,697	3,437			
50.80	2,697	3,437			
50.90	2,697	3,437			
51.00	2,697	3,437			
51.10	2,697	3,437			

Summary for Pond P-107: SWMB P-107

Inflow Area = 90,871 sf, 92.92% Impervious, Inflow Depth = 5.51" for 25-yr event
 Inflow = 13.89 cfs @ 12.02 hrs, Volume= 41,760 cf
 Outflow = 18.82 cfs @ 12.02 hrs, Volume= 43,949 cf, Atten= 0%, Lag= 0.1 min
 Discarded = 0.98 cfs @ 12.02 hrs, Volume= 28,460 cf
 Primary = 17.84 cfs @ 12.02 hrs, Volume= 15,489 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 49.18' @ 12.02 hrs Surf.Area= 3,974 sf Storage= 5,089 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 20.1 min (791.5 - 771.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.10'	2,789 cf	41.50'W x 95.76'L x 2.33'H Field A 9,273 cf Overall - 2,300 cf Embedded = 6,973 cf x 40.0% Voids
#2A	46.60'	2,300 cf	ADS_StormTech SC-310 +Cap x 156 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 156 Chambers in 12 Rows
		5,089 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	48.00'	4.0' long x 5.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.10'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.40'

Discarded OutFlow Max=0.96 cfs @ 12.02 hrs HW=49.06' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 0.96 cfs)

Primary OutFlow Max=15.97 cfs @ 12.02 hrs HW=49.06' (Free Discharge)
 ↑ **1=Low Level Orifice** (Orifice Controls 1.27 cfs @ 6.48 fps)
 ↓ **2=Sharp-Crested Rectangular Weir** (Weir Controls 14.70 cfs @ 3.66 fps)

Pond P-107: SWMB P-107 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

12 Rows x 34.0" Wide + 6.0" Spacing x 11 + 12.0" Side Stone x 2 = 41.50' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

156 Chambers x 14.7 cf = 2,299.7 cf Chamber Storage

9,272.8 cf Field - 2,299.7 cf Chambers = 6,973.0 cf Stone x 40.0% Voids = 2,789.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,089.0 cf = 0.117 af

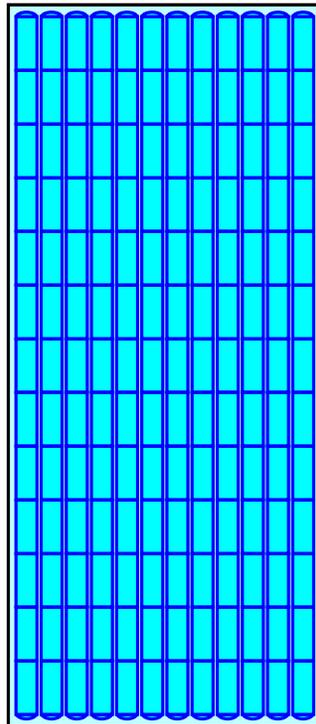
Overall Storage Efficiency = 54.9%

Overall System Size = 95.76' x 41.50' x 2.33'

156 Chambers

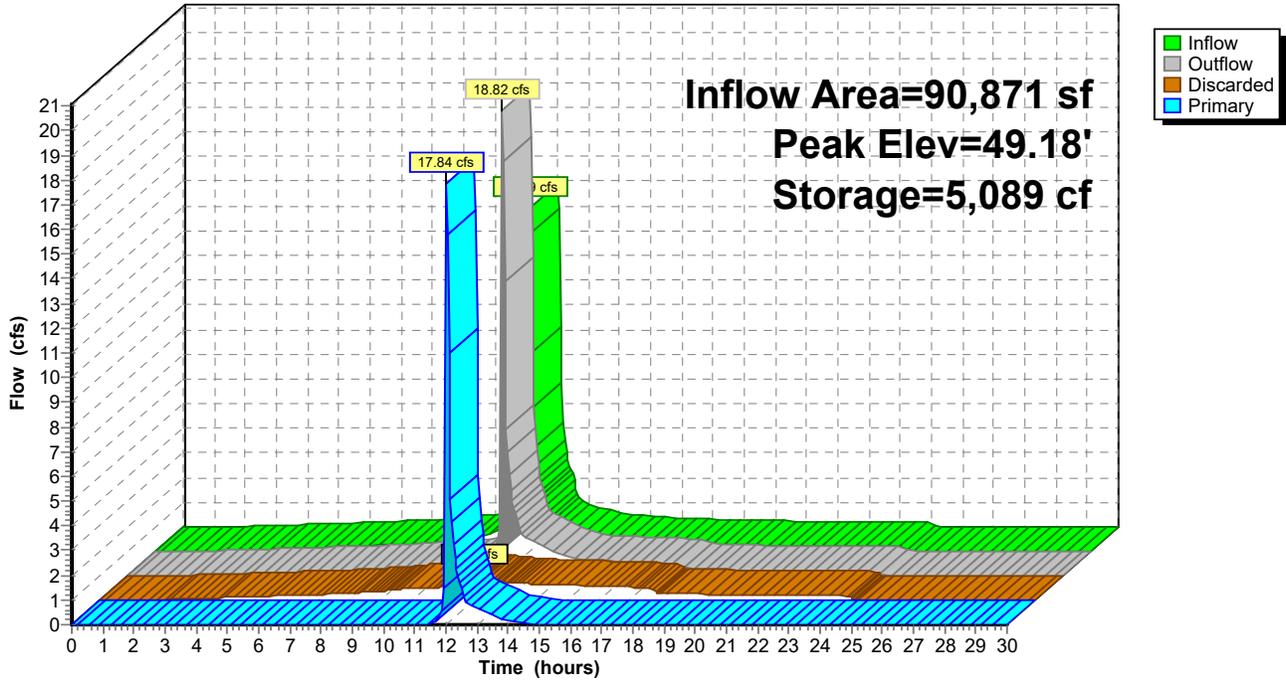
343.4 cy Field

258.3 cy Stone



Pond P-107: SWMB P-107

Hydrograph



Stage-Discharge for Pond P-107: SWMB P-107

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.10	0.00	0.00	0.00	51.30	86.34	1.35	85.00
46.20	0.48	0.48	0.00	51.40	90.22	1.36	88.86
46.30	0.49	0.49	0.00	51.50	94.15	1.38	92.77
46.40	0.51	0.51	0.00	51.60	98.14	1.40	96.74
46.50	0.53	0.53	0.00	51.70	102.17	1.41	100.76
46.60	0.55	0.55	0.00	51.80	106.25	1.43	104.82
46.70	0.56	0.56	0.00	51.90	110.37	1.45	108.93
46.80	0.58	0.58	0.00	52.00	114.54	1.47	113.08
46.90	0.60	0.60	0.00	52.10	118.76	1.48	117.27
47.00	0.61	0.61	0.00	52.20	123.01	1.50	121.51
47.10	0.66	0.63	0.03	52.30	127.30	1.52	125.78
47.20	0.76	0.65	0.11	52.40	131.63	1.53	130.10
47.30	0.89	0.66	0.23	52.50	135.99	1.55	134.44
47.40	1.04	0.68	0.36	52.60	140.39	1.57	138.83
47.50	1.17	0.70	0.47	52.70	144.83	1.58	143.24
47.60	1.27	0.72	0.56	52.80	149.29	1.60	147.69
47.70	1.37	0.73	0.63	52.90	153.78	1.62	152.16
47.80	1.45	0.75	0.70	53.00	158.30	1.64	156.67
47.90	1.53	0.77	0.76				
48.00	1.60	0.78	0.82				
48.10	2.09	0.80	1.29				
48.20	2.92	0.82	2.10				
48.30	3.97	0.83	3.14				
48.40	5.21	0.85	4.36				
48.50	6.62	0.87	5.75				
48.60	8.17	0.89	7.28				
48.70	9.86	0.90	8.95				
48.80	11.67	0.92	10.75				
48.90	13.60	0.94	12.66				
49.00	15.64	0.95	14.69				
49.10	17.80	0.97	16.83				
49.20	20.05	0.99	19.06				
49.30	22.41	1.01	21.40				
49.40	24.86	1.02	23.84				
49.50	27.40	1.04	26.36				
49.60	30.04	1.06	28.98				
49.70	32.76	1.07	31.69				
49.80	35.56	1.09	34.47				
49.90	38.45	1.11	37.34				
50.00	41.42	1.12	40.29				
50.10	44.46	1.14	43.32				
50.20	47.58	1.16	46.43				
50.30	50.78	1.18	49.60				
50.40	54.04	1.19	52.85				
50.50	57.38	1.21	56.17				
50.60	60.78	1.23	59.55				
50.70	64.25	1.24	63.00				
50.80	67.78	1.26	66.52				
50.90	71.37	1.28	70.10				
51.00	75.03	1.29	73.74				
51.10	78.74	1.31	77.43				
51.20	82.51	1.33	81.19				

Stage-Area-Storage for Pond P-107: SWMB P-107

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.10	3,974	0	51.30	3,974	5,089
46.20	3,974	159	51.40	3,974	5,089
46.30	3,974	318	51.50	3,974	5,089
46.40	3,974	477	51.60	3,974	5,089
46.50	3,974	636	51.70	3,974	5,089
46.60	3,974	795	51.80	3,974	5,089
46.70	3,974	1,114	51.90	3,974	5,089
46.80	3,974	1,429	52.00	3,974	5,089
46.90	3,974	1,739	52.10	3,974	5,089
47.00	3,974	2,042	52.20	3,974	5,089
47.10	3,974	2,339	52.30	3,974	5,089
47.20	3,974	2,627	52.40	3,974	5,089
47.30	3,974	2,906	52.50	3,974	5,089
47.40	3,974	3,174	52.60	3,974	5,089
47.50	3,974	3,428	52.70	3,974	5,089
47.60	3,974	3,667	52.80	3,974	5,089
47.70	3,974	3,881	52.90	3,974	5,089
47.80	3,974	4,069	53.00	3,974	5,089
47.90	3,974	4,240			
48.00	3,974	4,400			
48.10	3,974	4,559			
48.20	3,974	4,718			
48.30	3,974	4,877			
48.40	3,974	5,036			
48.50	3,974	5,089			
48.60	3,974	5,089			
48.70	3,974	5,089			
48.80	3,974	5,089			
48.90	3,974	5,089			
49.00	3,974	5,089			
49.10	3,974	5,089			
49.20	3,974	5,089			
49.30	3,974	5,089			
49.40	3,974	5,089			
49.50	3,974	5,089			
49.60	3,974	5,089			
49.70	3,974	5,089			
49.80	3,974	5,089			
49.90	3,974	5,089			
50.00	3,974	5,089			
50.10	3,974	5,089			
50.20	3,974	5,089			
50.30	3,974	5,089			
50.40	3,974	5,089			
50.50	3,974	5,089			
50.60	3,974	5,089			
50.70	3,974	5,089			
50.80	3,974	5,089			
50.90	3,974	5,089			
51.00	3,974	5,089			
51.10	3,974	5,089			
51.20	3,974	5,089			

Summary for Pond P-108: SWMB P-108

Inflow Area = 370,807 sf, 93.15% Impervious, Inflow Depth = 1.31" for 25-yr event
 Inflow = 24.63 cfs @ 12.04 hrs, Volume= 40,528 cf
 Outflow = 0.14 cfs @ 16.20 hrs, Volume= 11,151 cf, Atten= 99%, Lag= 249.2 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12
 Secondary = 0.14 cfs @ 16.20 hrs, Volume= 11,151 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 46.57' @ 16.20 hrs Surf.Area= 22,829 sf Storage= 33,692 cf

Plug-Flow detention time= 476.9 min calculated for 11,151 cf (28% of inflow)
 Center-of-Mass det. time= 374.6 min (1,136.5 - 761.8)

Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	153,555 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	20,005	0	0
46.00	21,777	20,891	20,891
47.00	23,610	22,694	43,585
48.00	25,502	24,556	68,141
49.00	27,451	26,477	94,617
50.00	29,456	28,454	123,071
51.00	31,513	30,485	153,555

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	49.00'	24.0" x 36.0" Horiz. OCS-203 Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	48.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#4	Secondary	45.00'	0.270 in/hr Underdrain over Surface area

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)

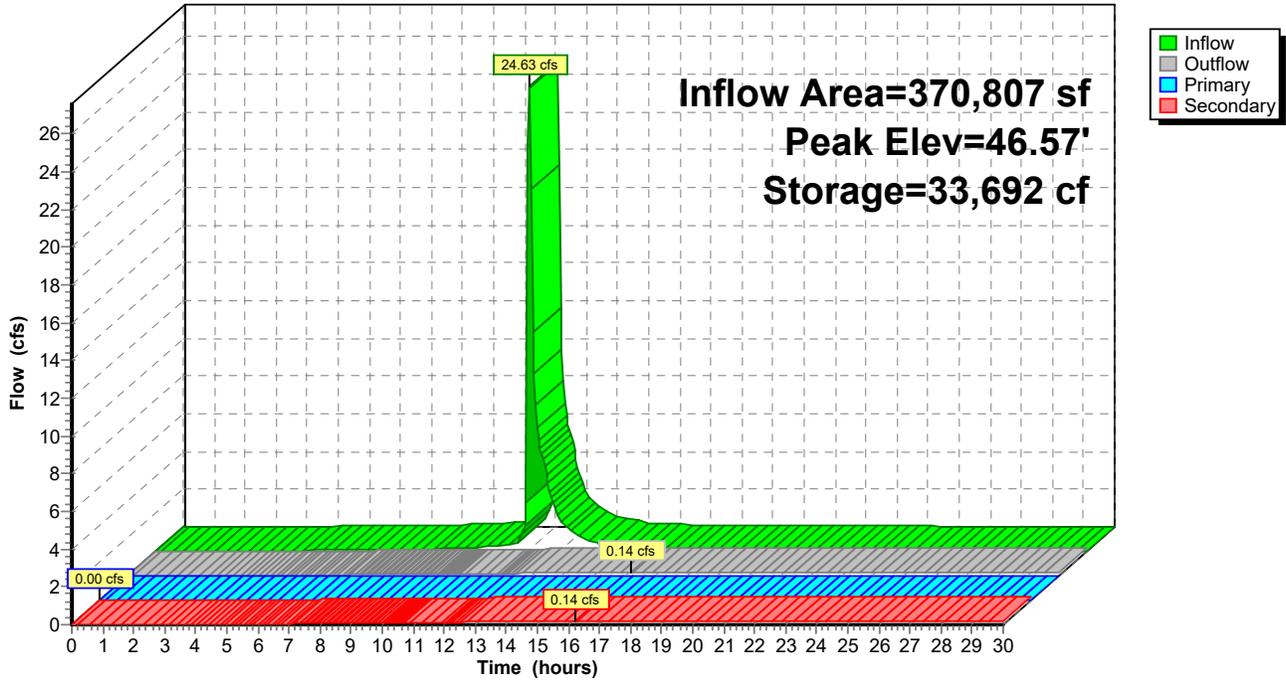
- 1=Overflow Spillway (Controls 0.00 cfs)
- 2=OCS-203 Grate (Controls 0.00 cfs)
- 3=Low Level Orifice (Controls 0.00 cfs)

Secondary OutFlow Max=0.14 cfs @ 16.20 hrs HW=46.57' (Free Discharge)

- 4=Underdrain (Exfiltration Controls 0.14 cfs)

Pond P-108: SWMB P-108

Hydrograph



Stage-Discharge for Pond P-108: SWMB P-108

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
45.00	0.00	0.00	0.00	50.20	35.43	35.25	0.19
45.10	0.13	0.00	0.13	50.30	38.86	38.67	0.19
45.20	0.13	0.00	0.13	50.40	42.80	42.61	0.19
45.30	0.13	0.00	0.13	50.50	47.37	47.18	0.19
45.40	0.13	0.00	0.13	50.60	52.54	52.35	0.19
45.50	0.13	0.00	0.13	50.70	57.78	57.58	0.19
45.60	0.13	0.00	0.13	50.80	63.41	63.21	0.19
45.70	0.13	0.00	0.13	50.90	69.43	69.24	0.20
45.80	0.13	0.00	0.13	51.00	75.85	75.66	0.20
45.90	0.13	0.00	0.13				
46.00	0.14	0.00	0.14				
46.10	0.14	0.00	0.14				
46.20	0.14	0.00	0.14				
46.30	0.14	0.00	0.14				
46.40	0.14	0.00	0.14				
46.50	0.14	0.00	0.14				
46.60	0.14	0.00	0.14				
46.70	0.14	0.00	0.14				
46.80	0.15	0.00	0.15				
46.90	0.15	0.00	0.15				
47.00	0.15	0.00	0.15				
47.10	0.15	0.00	0.15				
47.20	0.15	0.00	0.15				
47.30	0.15	0.00	0.15				
47.40	0.15	0.00	0.15				
47.50	0.15	0.00	0.15				
47.60	0.15	0.00	0.15				
47.70	0.16	0.00	0.16				
47.80	0.16	0.00	0.16				
47.90	0.16	0.00	0.16				
48.00	0.16	0.00	0.16				
48.10	0.19	0.03	0.16				
48.20	0.27	0.11	0.16				
48.30	0.39	0.23	0.16				
48.40	0.53	0.36	0.16				
48.50	0.64	0.47	0.17				
48.60	0.73	0.56	0.17				
48.70	0.80	0.63	0.17				
48.80	0.87	0.70	0.17				
48.90	0.93	0.76	0.17				
49.00	0.99	0.82	0.17				
49.10	2.08	1.91	0.17				
49.20	4.02	3.85	0.17				
49.30	6.52	6.34	0.18				
49.40	9.46	9.29	0.18				
49.50	12.80	12.62	0.18				
49.60	16.48	16.30	0.18				
49.70	20.47	20.29	0.18				
49.80	24.76	24.58	0.18				
49.90	28.80	28.62	0.18				
50.00	30.32	30.14	0.18				
50.10	32.56	32.37	0.19				

Stage-Area-Storage for Pond P-108: SWMB P-108

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
45.00	20,005	0	50.20	29,867	129,003
45.10	20,182	2,009	50.30	30,073	132,000
45.20	20,359	4,036	50.40	30,279	135,017
45.30	20,537	6,081	50.50	30,485	138,056
45.40	20,714	8,144	50.60	30,690	141,114
45.50	20,891	10,224	50.70	30,896	144,194
45.60	21,068	12,322	50.80	31,102	147,294
45.70	21,245	14,438	50.90	31,307	150,414
45.80	21,423	16,571	51.00	31,513	153,555
45.90	21,600	18,722			
46.00	21,777	20,891			
46.10	21,960	23,078			
46.20	22,144	25,283			
46.30	22,327	27,507			
46.40	22,510	29,748			
46.50	22,694	32,009			
46.60	22,877	34,287			
46.70	23,060	36,584			
46.80	23,243	38,899			
46.90	23,427	41,233			
47.00	23,610	43,585			
47.10	23,799	45,955			
47.20	23,988	48,344			
47.30	24,178	50,753			
47.40	24,367	53,180			
47.50	24,556	55,626			
47.60	24,745	58,091			
47.70	24,934	60,575			
47.80	25,124	63,078			
47.90	25,313	65,600			
48.00	25,502	68,141			
48.10	25,697	70,700			
48.20	25,892	73,280			
48.30	26,087	75,879			
48.40	26,282	78,497			
48.50	26,477	81,135			
48.60	26,671	83,793			
48.70	26,866	86,469			
48.80	27,061	89,166			
48.90	27,256	91,882			
49.00	27,451	94,617			
49.10	27,652	97,372			
49.20	27,852	100,147			
49.30	28,052	102,943			
49.40	28,253	105,758			
49.50	28,454	108,593			
49.60	28,654	111,449			
49.70	28,855	114,324			
49.80	29,055	117,219			
49.90	29,255	120,135			
50.00	29,456	123,071			
50.10	29,662	126,026			

Summary for Pond P-109: SWMB P-109

Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 4.35" for 25-yr event
 Inflow = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf
 Outflow = 4.10 cfs @ 13.27 hrs, Volume= 73,625 cf, Atten= 21%, Lag= 53.9 min
 Discarded = 1.42 cfs @ 13.27 hrs, Volume= 58,103 cf
 Primary = 2.69 cfs @ 13.27 hrs, Volume= 15,522 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 44.32' @ 13.27 hrs Surf.Area= 8,246 sf Storage= 16,428 cf

Plug-Flow detention time= 83.4 min calculated for 73,625 cf (100% of inflow)
 Center-of-Mass det. time= 83.4 min (910.1 - 826.7)

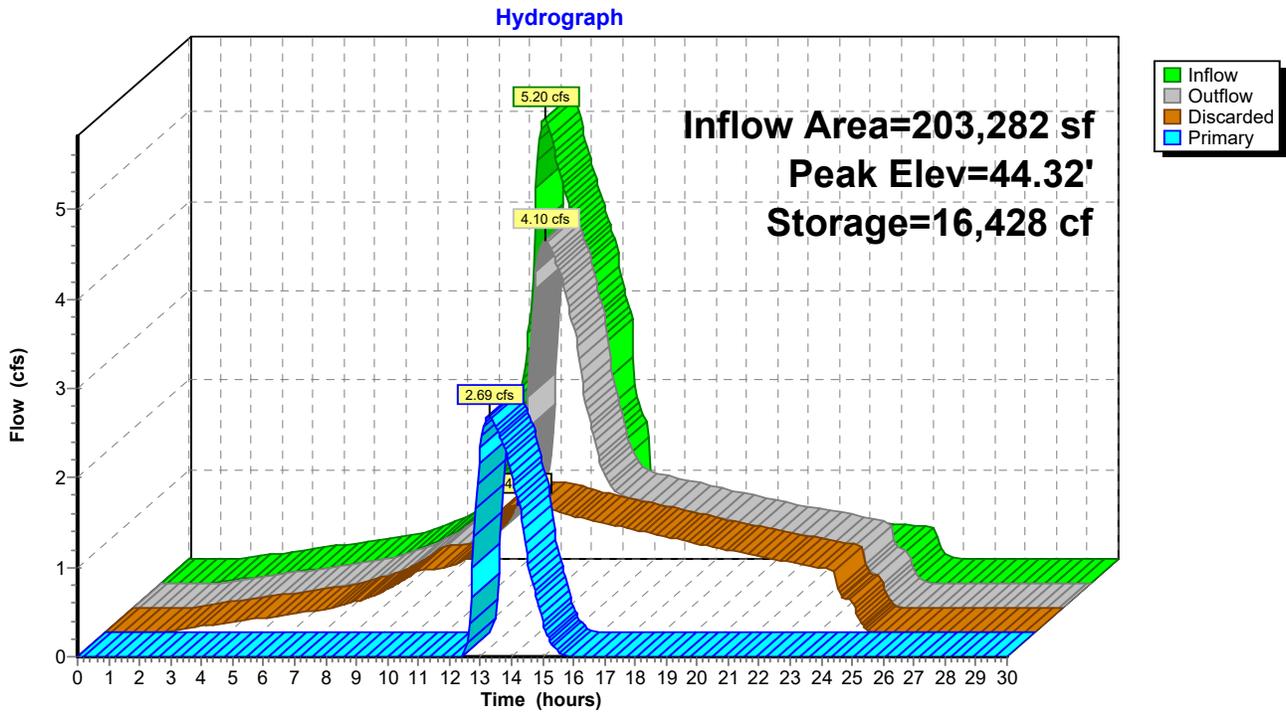
Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	26,865 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	5,939	0	0
43.00	6,891	6,415	6,415
44.00	7,900	7,396	13,811
45.00	8,966	8,433	22,244
45.50	9,519	4,621	26,865

Device	Routing	Invert	Outlet Devices
#1	Primary	44.50'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	43.80'	1.0' long + 4.0 ' SideZ x 8.0' breadth Outlet Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Discarded	42.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 38.00'

Discarded OutFlow Max=1.42 cfs @ 13.27 hrs HW=44.32' (Free Discharge)
 ↑3=Exfiltration (Controls 1.42 cfs)

Primary OutFlow Max=2.68 cfs @ 13.27 hrs HW=44.32' (Free Discharge)
 ↑1=Overflow Spillway (Controls 0.00 cfs)
 ↑2=Outlet Spillway (Weir Controls 2.68 cfs @ 1.65 fps)

Pond P-109: SWMB P-109



Stage-Discharge for Pond P-109: SWMB P-109

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
42.00	0.00	0.00	0.00	44.60	9.15	1.51	7.64
42.05	0.70	0.70	0.00	44.65	10.83	1.53	9.30
42.10	0.72	0.72	0.00	44.70	12.72	1.55	11.17
42.15	0.73	0.73	0.00	44.75	14.86	1.57	13.29
42.20	0.74	0.74	0.00	44.80	17.22	1.58	15.63
42.25	0.76	0.76	0.00	44.85	19.81	1.60	18.21
42.30	0.77	0.77	0.00	44.90	22.64	1.62	21.02
42.35	0.79	0.79	0.00	44.95	25.73	1.64	24.10
42.40	0.80	0.80	0.00	45.00	29.08	1.66	27.43
42.45	0.82	0.82	0.00	45.05	32.65	1.67	30.97
42.50	0.83	0.83	0.00	45.10	36.47	1.69	34.78
42.55	0.85	0.85	0.00	45.15	40.29	1.71	38.58
42.60	0.86	0.86	0.00	45.20	44.31	1.73	42.58
42.65	0.88	0.88	0.00	45.25	48.53	1.75	46.78
42.70	0.89	0.89	0.00	45.30	52.95	1.77	51.18
42.75	0.91	0.91	0.00	45.35	57.56	1.78	55.78
42.80	0.92	0.92	0.00	45.40	62.38	1.80	60.58
42.85	0.94	0.94	0.00	45.45	67.46	1.82	65.64
42.90	0.95	0.95	0.00	45.50	72.76	1.84	70.92
42.95	0.97	0.97	0.00				
43.00	0.98	0.98	0.00				
43.05	1.00	1.00	0.00				
43.10	1.01	1.01	0.00				
43.15	1.03	1.03	0.00				
43.20	1.04	1.04	0.00				
43.25	1.06	1.06	0.00				
43.30	1.08	1.08	0.00				
43.35	1.09	1.09	0.00				
43.40	1.11	1.11	0.00				
43.45	1.12	1.12	0.00				
43.50	1.14	1.14	0.00				
43.55	1.16	1.16	0.00				
43.60	1.17	1.17	0.00				
43.65	1.19	1.19	0.00				
43.70	1.21	1.21	0.00				
43.75	1.22	1.22	0.00				
43.80	1.24	1.24	0.00				
43.85	1.29	1.26	0.03				
43.90	1.37	1.27	0.10				
43.95	1.50	1.29	0.21				
44.00	1.66	1.31	0.36				
44.05	1.88	1.32	0.55				
44.10	2.14	1.34	0.80				
44.15	2.46	1.36	1.10				
44.20	2.84	1.37	1.47				
44.25	3.29	1.39	1.90				
44.30	3.82	1.41	2.41				
44.35	4.42	1.43	2.99				
44.40	5.11	1.44	3.66				
44.45	5.81	1.46	4.35				
44.50	6.59	1.48	5.11				
44.55	7.72	1.50	6.22				

Stage-Area-Storage for Pond P-109: SWMB P-109

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
42.00	5,939	0	44.60	8,540	18,742
42.05	5,987	298	44.65	8,593	19,171
42.10	6,034	599	44.70	8,646	19,602
42.15	6,082	902	44.75	8,700	20,035
42.20	6,129	1,207	44.80	8,753	20,472
42.25	6,177	1,515	44.85	8,806	20,911
42.30	6,225	1,825	44.90	8,859	21,352
42.35	6,272	2,137	44.95	8,913	21,797
42.40	6,320	2,452	45.00	8,966	22,244
42.45	6,367	2,769	45.05	9,021	22,693
42.50	6,415	3,089	45.10	9,077	23,146
42.55	6,463	3,410	45.15	9,132	23,601
42.60	6,510	3,735	45.20	9,187	24,059
42.65	6,558	4,061	45.25	9,243	24,520
42.70	6,605	4,391	45.30	9,298	24,983
42.75	6,653	4,722	45.35	9,353	25,449
42.80	6,701	5,056	45.40	9,408	25,918
42.85	6,748	5,392	45.45	9,464	26,390
42.90	6,796	5,731	45.50	9,519	26,865
42.95	6,843	6,072			
43.00	6,891	6,415			
43.05	6,941	6,761			
43.10	6,992	7,109			
43.15	7,042	7,460			
43.20	7,093	7,813			
43.25	7,143	8,169			
43.30	7,194	8,528			
43.35	7,244	8,889			
43.40	7,295	9,252			
43.45	7,345	9,618			
43.50	7,396	9,987			
43.55	7,446	10,358			
43.60	7,496	10,731			
43.65	7,547	11,107			
43.70	7,597	11,486			
43.75	7,648	11,867			
43.80	7,698	12,251			
43.85	7,749	12,637			
43.90	7,799	13,026			
43.95	7,850	13,417			
44.00	7,900	13,811			
44.05	7,953	14,207			
44.10	8,007	14,606			
44.15	8,060	15,007			
44.20	8,113	15,412			
44.25	8,167	15,819			
44.30	8,220	16,228			
44.35	8,273	16,641			
44.40	8,326	17,056			
44.45	8,380	17,473			
44.50	8,433	17,894			
44.55	8,486	18,317			

Summary for Pond SB-LS: SB-LS

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 1.03" for 25-yr event
 Inflow = 0.37 cfs @ 12.94 hrs, Volume= 4,290 cf
 Outflow = 0.07 cfs @ 17.25 hrs, Volume= 1,611 cf, Atten= 80%, Lag= 258.2 min
 Primary = 0.07 cfs @ 17.25 hrs, Volume= 1,611 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 43.51' @ 17.25 hrs Surf.Area= 1,750 sf Storage= 2,690 cf

Plug-Flow detention time= 450.9 min calculated for 1,611 cf (38% of inflow)
 Center-of-Mass det. time= 249.3 min (1,243.1 - 993.8)

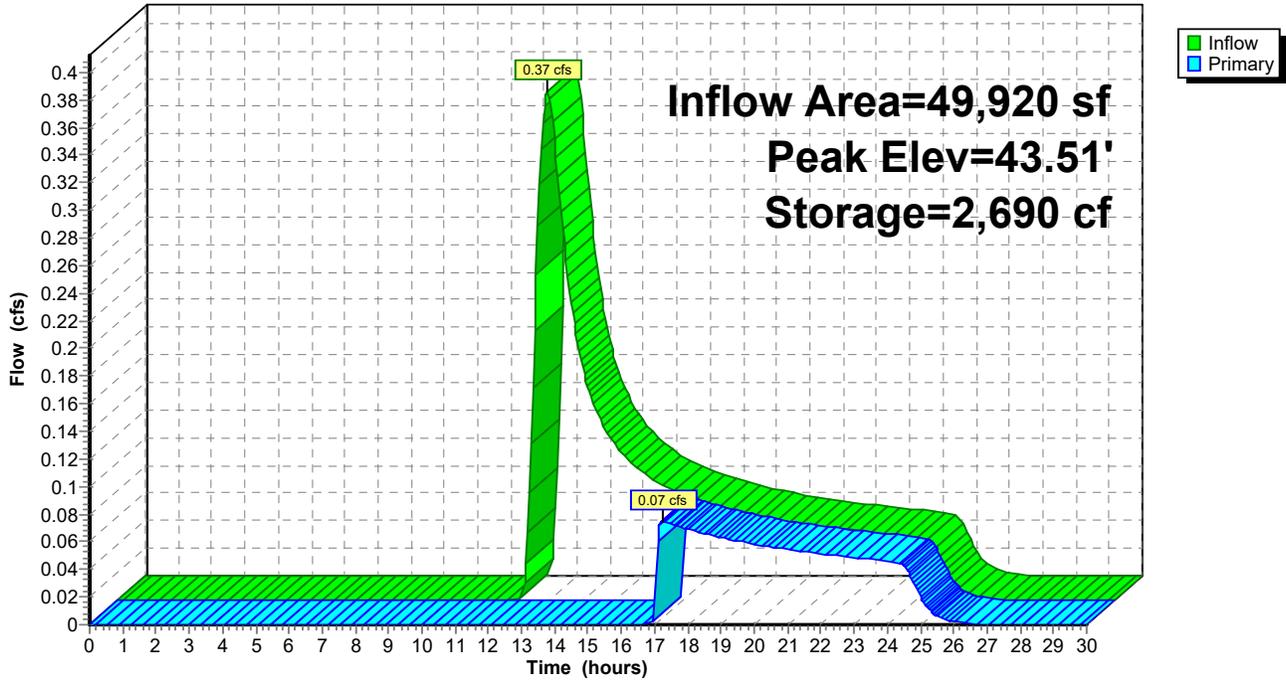
Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	3,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
40.50	290	0	0
41.00	416	177	177
42.00	741	579	755
43.00	1,489	1,115	1,870
43.50	1,747	809	2,679
44.00	2,020	942	3,621

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	50.0' long + 3.0 ' SideZ x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.06 cfs @ 17.25 hrs HW=43.51' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 0.06 cfs @ 0.19 fps)

Pond SB-LS: SB-LS

Hydrograph



Stage-Discharge for Pond SB-LS: SB-LS

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
40.50	0.00	41.54	0.00	42.58	0.00	43.62	4.95
40.52	0.00	41.56	0.00	42.60	0.00	43.64	6.25
40.54	0.00	41.58	0.00	42.62	0.00	43.66	7.64
40.56	0.00	41.60	0.00	42.64	0.00	43.68	9.13
40.58	0.00	41.62	0.00	42.66	0.00	43.70	10.70
40.60	0.00	41.64	0.00	42.68	0.00	43.72	12.43
40.62	0.00	41.66	0.00	42.70	0.00	43.74	14.26
40.64	0.00	41.68	0.00	42.72	0.00	43.76	16.19
40.66	0.00	41.70	0.00	42.74	0.00	43.78	18.21
40.68	0.00	41.72	0.00	42.76	0.00	43.80	20.34
40.70	0.00	41.74	0.00	42.78	0.00	43.82	22.55
40.72	0.00	41.76	0.00	42.80	0.00	43.84	24.86
40.74	0.00	41.78	0.00	42.82	0.00	43.86	27.27
40.76	0.00	41.80	0.00	42.84	0.00	43.88	29.77
40.78	0.00	41.82	0.00	42.86	0.00	43.90	32.36
40.80	0.00	41.84	0.00	42.88	0.00	43.92	35.11
40.82	0.00	41.86	0.00	42.90	0.00	43.94	37.97
40.84	0.00	41.88	0.00	42.92	0.00	43.96	40.93
40.86	0.00	41.90	0.00	42.94	0.00	43.98	43.99
40.88	0.00	41.92	0.00	42.96	0.00	44.00	47.16
40.90	0.00	41.94	0.00	42.98	0.00		
40.92	0.00	41.96	0.00	43.00	0.00		
40.94	0.00	41.98	0.00	43.02	0.00		
40.96	0.00	42.00	0.00	43.04	0.00		
40.98	0.00	42.02	0.00	43.06	0.00		
41.00	0.00	42.04	0.00	43.08	0.00		
41.02	0.00	42.06	0.00	43.10	0.00		
41.04	0.00	42.08	0.00	43.12	0.00		
41.06	0.00	42.10	0.00	43.14	0.00		
41.08	0.00	42.12	0.00	43.16	0.00		
41.10	0.00	42.14	0.00	43.18	0.00		
41.12	0.00	42.16	0.00	43.20	0.00		
41.14	0.00	42.18	0.00	43.22	0.00		
41.16	0.00	42.20	0.00	43.24	0.00		
41.18	0.00	42.22	0.00	43.26	0.00		
41.20	0.00	42.24	0.00	43.28	0.00		
41.22	0.00	42.26	0.00	43.30	0.00		
41.24	0.00	42.28	0.00	43.32	0.00		
41.26	0.00	42.30	0.00	43.34	0.00		
41.28	0.00	42.32	0.00	43.36	0.00		
41.30	0.00	42.34	0.00	43.38	0.00		
41.32	0.00	42.36	0.00	43.40	0.00		
41.34	0.00	42.38	0.00	43.42	0.00		
41.36	0.00	42.40	0.00	43.44	0.00		
41.38	0.00	42.42	0.00	43.46	0.00		
41.40	0.00	42.44	0.00	43.48	0.00		
41.42	0.00	42.46	0.00	43.50	0.00		
41.44	0.00	42.48	0.00	43.52	0.34		
41.46	0.00	42.50	0.00	43.54	0.95		
41.48	0.00	42.52	0.00	43.56	1.75		
41.50	0.00	42.54	0.00	43.58	2.69		
41.52	0.00	42.56	0.00	43.60	3.77		

Stage-Area-Storage for Pond SB-LS: SB-LS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
40.50	290	0	43.10	1,541	2,021
40.55	303	15	43.15	1,566	2,099
40.60	315	30	43.20	1,592	2,178
40.65	328	46	43.25	1,618	2,258
40.70	340	63	43.30	1,644	2,340
40.75	353	80	43.35	1,670	2,423
40.80	366	98	43.40	1,695	2,507
40.85	378	117	43.45	1,721	2,592
40.90	391	136	43.50	1,747	2,679
40.95	403	156	43.55	1,774	2,767
41.00	416	177	43.60	1,802	2,856
41.05	432	198	43.65	1,829	2,947
41.10	449	220	43.70	1,856	3,039
41.15	465	243	43.75	1,884	3,133
41.20	481	266	43.80	1,911	3,228
41.25	497	291	43.85	1,938	3,324
41.30	513	316	43.90	1,965	3,421
41.35	530	342	43.95	1,993	3,520
41.40	546	369	44.00	2,020	3,621
41.45	562	397			
41.50	579	425			
41.55	595	454			
41.60	611	485			
41.65	627	516			
41.70	644	547			
41.75	660	580			
41.80	676	613			
41.85	692	648			
41.90	708	683			
41.95	725	718			
42.00	741	755			
42.05	778	793			
42.10	816	833			
42.15	853	875			
42.20	891	918			
42.25	928	964			
42.30	965	1,011			
42.35	1,003	1,060			
42.40	1,040	1,111			
42.45	1,078	1,164			
42.50	1,115	1,219			
42.55	1,152	1,276			
42.60	1,190	1,334			
42.65	1,227	1,395			
42.70	1,265	1,457			
42.75	1,302	1,521			
42.80	1,339	1,587			
42.85	1,377	1,655			
42.90	1,414	1,725			
42.95	1,452	1,796			
43.00	1,489	1,870			
43.05	1,515	1,945			

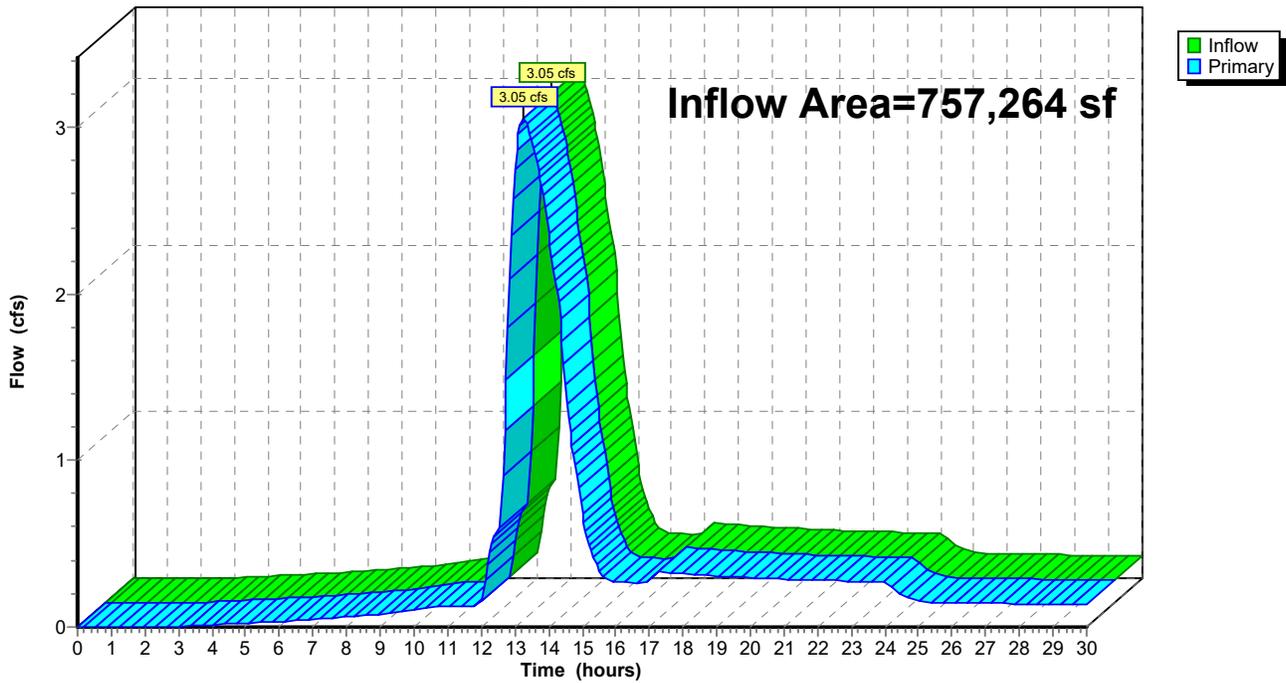
Summary for Link DP-1: Wetlands WA2 - WA12

Inflow Area = 757,264 sf, 63.15% Impervious, Inflow Depth > 0.54" for 25-yr event
Inflow = 3.05 cfs @ 13.25 hrs, Volume= 34,156 cf
Primary = 3.05 cfs @ 13.25 hrs, Volume= 34,156 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA12

Hydrograph



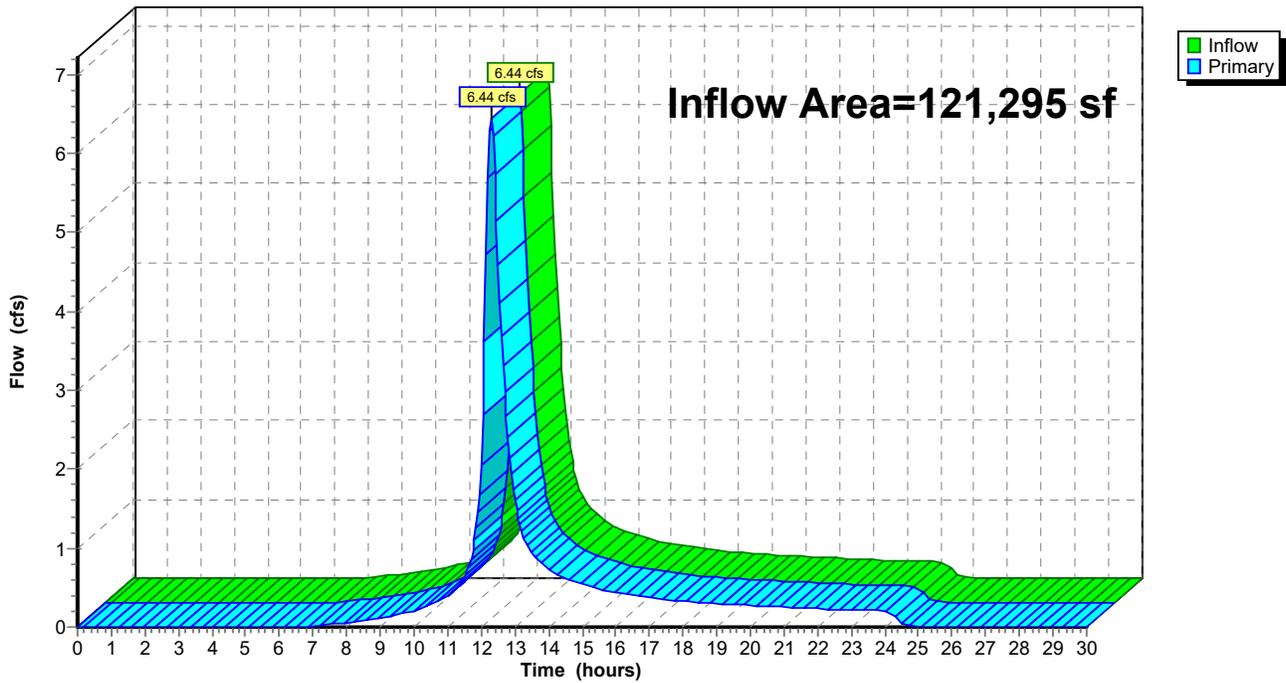
Summary for Link DP-2: Frontage Road

Inflow Area = 121,295 sf, 29.98% Impervious, Inflow Depth = 3.47" for 25-yr event
Inflow = 6.44 cfs @ 12.30 hrs, Volume= 35,078 cf
Primary = 6.44 cfs @ 12.30 hrs, Volume= 35,078 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-2: Frontage Road

Hydrograph



Summary for Subcatchment PDA-101: PDA-101

Runoff = 7.56 cfs @ 12.24 hrs, Volume= 37,343 cf, Depth= 4.57"
 Routed to Pond P-101 : SWMB P-101

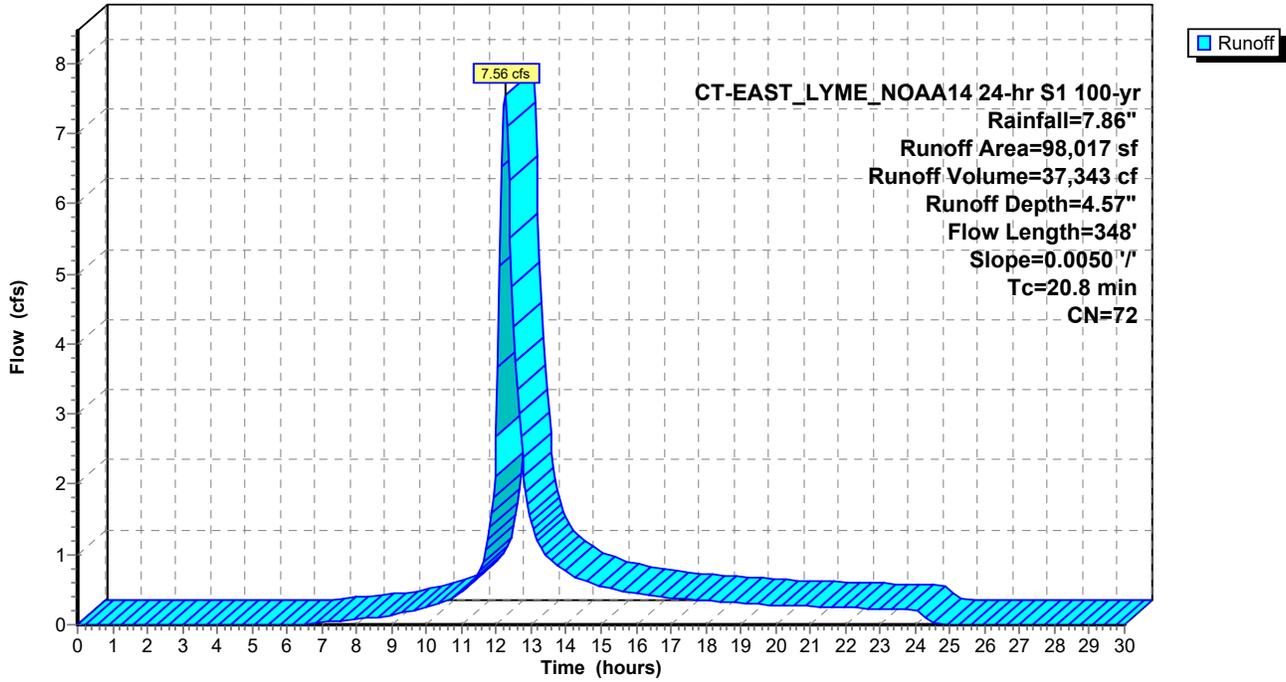
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
15,098	55	Woods, Good, HSG B
28,559	48	Brush, Good, HSG B
12,892	61	>75% Grass cover, Good, HSG B
41,468	98	Paved parking, HSG B
98,017	72	Weighted Average
56,549		57.69% Pervious Area
41,468		42.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0050	0.06		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.40"
6.4	190	0.0050	0.49		Shallow Concentrated Flow, Brush Short Grass Pasture Kv= 7.0 fps
0.6	108	0.0050	3.21	2.52	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
20.8	348	Total			

Subcatchment PDA-101: PDA-101

Hydrograph



Summary for Subcatchment PDA-102: PDA-102

Runoff = 15.63 cfs @ 12.05 hrs, Volume= 51,416 cf, Depth= 7.02"
 Routed to Pond P-102 : SWMB P-102

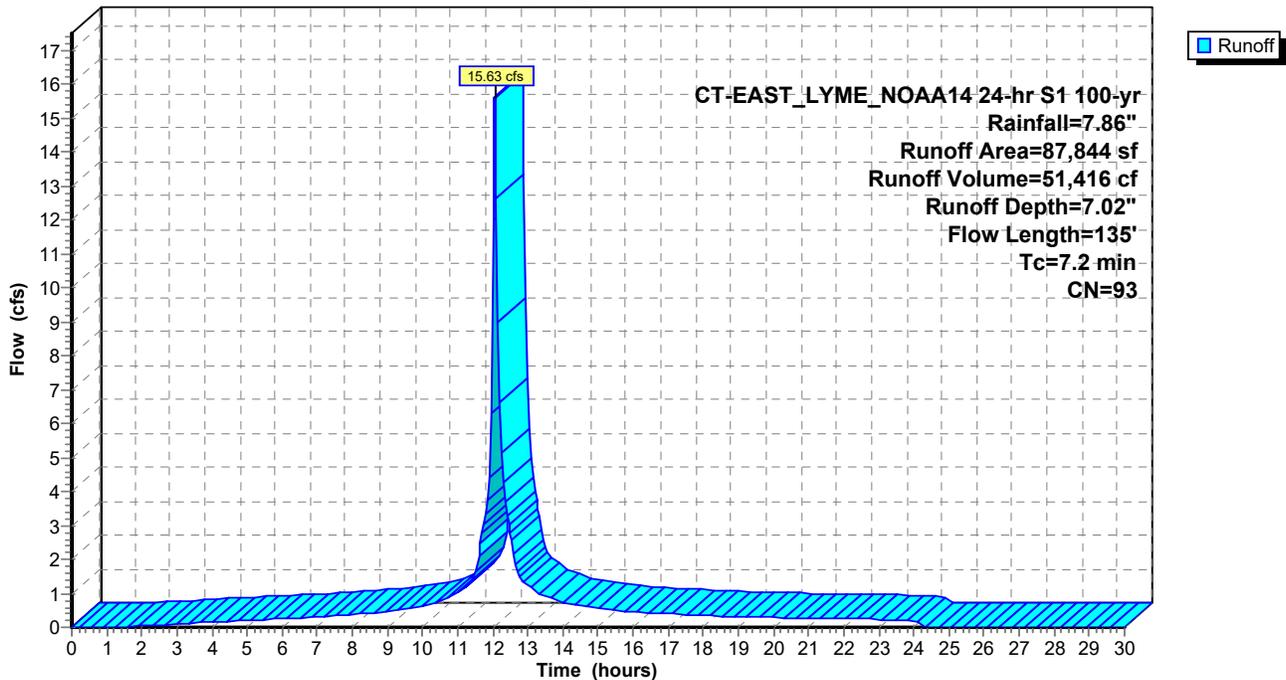
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
12,499	61	>75% Grass cover, Good, HSG B
75,345	98	Paved parking, HSG B
87,844	93	Weighted Average
12,499		14.23% Pervious Area
75,345		85.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	45	0.0100	0.11		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 3.40"
0.6	90	0.0150	2.49		Shallow Concentrated Flow, Paved Paved Kv= 20.3 fps
7.2	135	Total			

Subcatchment PDA-102: PDA-102

Hydrograph



Summary for Subcatchment PDA-103: PDA-103

Runoff = 4.74 cfs @ 12.02 hrs, Volume= 14,591 cf, Depth= 7.26"
 Routed to Pond P-103 : SWMB P-103

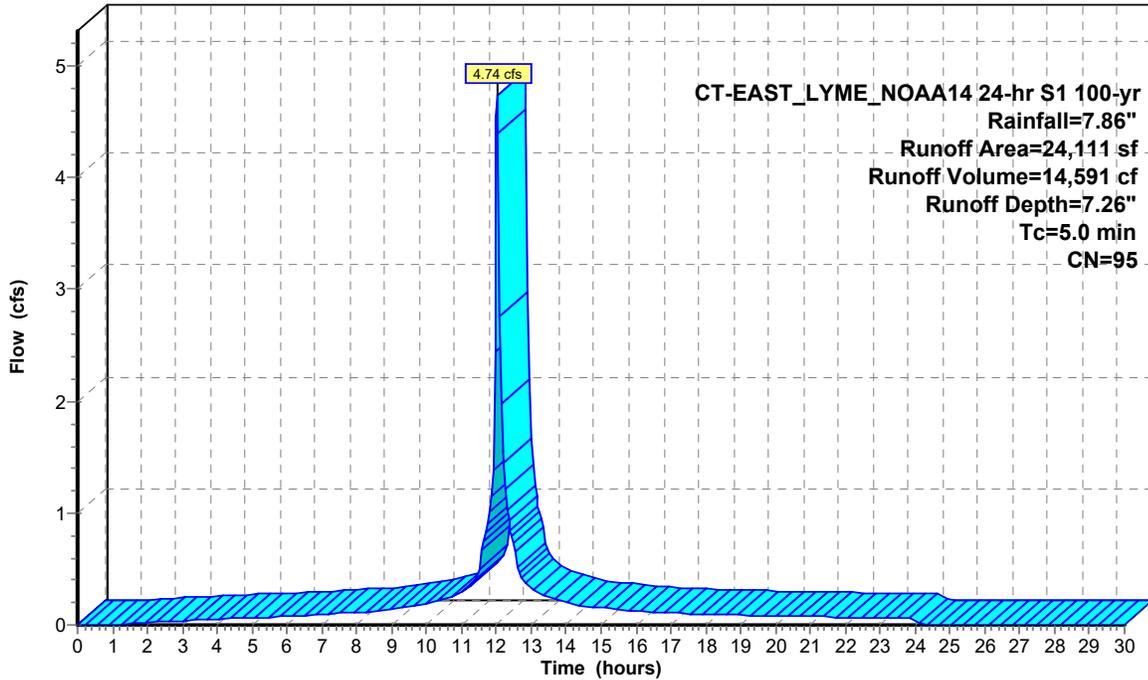
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
2,159	61	>75% Grass cover, Good, HSG B
21,952	98	Paved parking, HSG B
24,111	95	Weighted Average
2,159		8.95% Pervious Area
21,952		91.05% Impervious Area

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

Subcatchment PDA-103: PDA-103

Hydrograph



Runoff

CT-EAST_LYME_NOAA14 24-hr S1 100-yr
 Rainfall=7.86"
 Runoff Area=24,111 sf
 Runoff Volume=14,591 cf
 Runoff Depth=7.26"
 Tc=5.0 min
 CN=95

Summary for Subcatchment PDA-104: PDA-104

Runoff = 0.79 cfs @ 12.77 hrs, Volume= 7,741 cf, Depth= 1.86"
 Routed to Reach 1R : Grass Swale

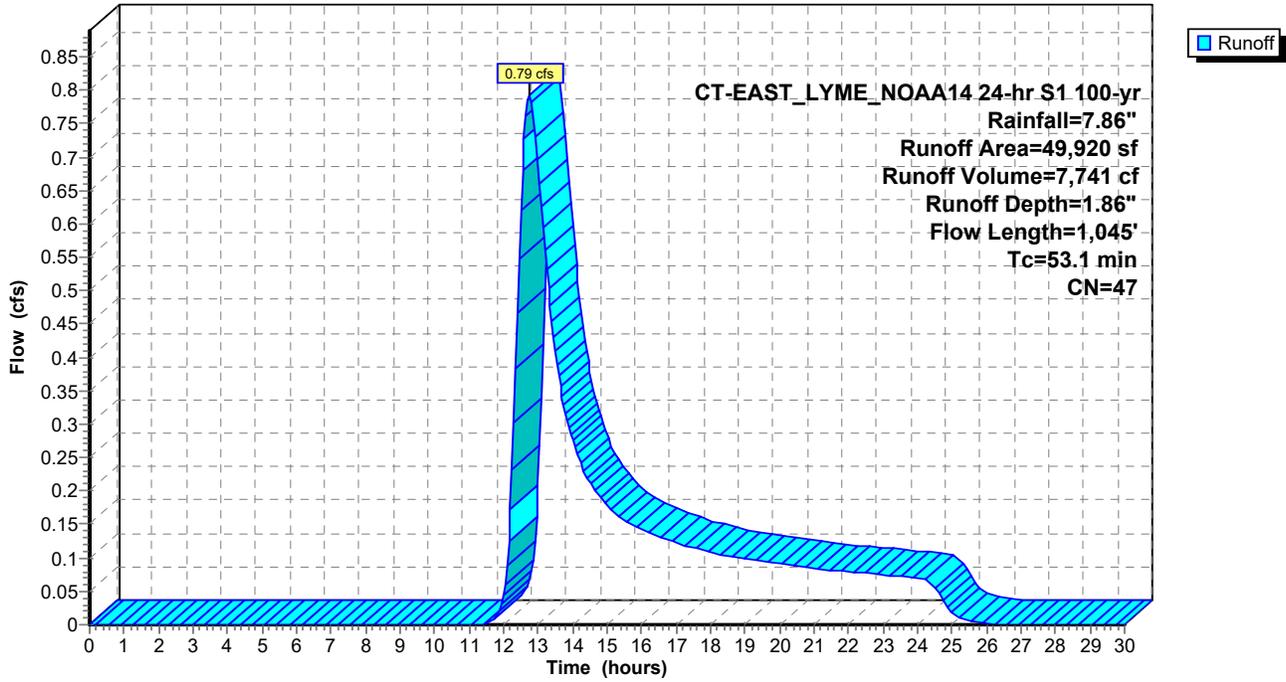
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
10,624	30	Woods, Good, HSG A
29,321	55	Woods, Good, HSG B
7,850	39	>75% Grass cover, Good, HSG A
2,125	61	>75% Grass cover, Good, HSG B
49,920	47	Weighted Average
49,920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	75	0.0050	0.04		Sheet Flow, Sheet Woods: Light underbrush n= 0.400 P2= 3.40"
9.0	190	0.0050	0.35		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
13.1	480	0.0150	0.61		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
2.2	300	0.0050	2.25	8.99	Channel Flow, Grass Swale Area= 4.0 sf Perim= 12.4' r= 0.32' n= 0.022 Earth, clean & straight
53.1	1,045	Total			

Subcatchment PDA-104: PDA-104

Hydrograph



Summary for Subcatchment PDA-105: PDA-105

Runoff = 3.42 cfs @ 12.02 hrs, Volume= 10,542 cf, Depth= 7.26"
 Routed to Pond P-104 : P-104

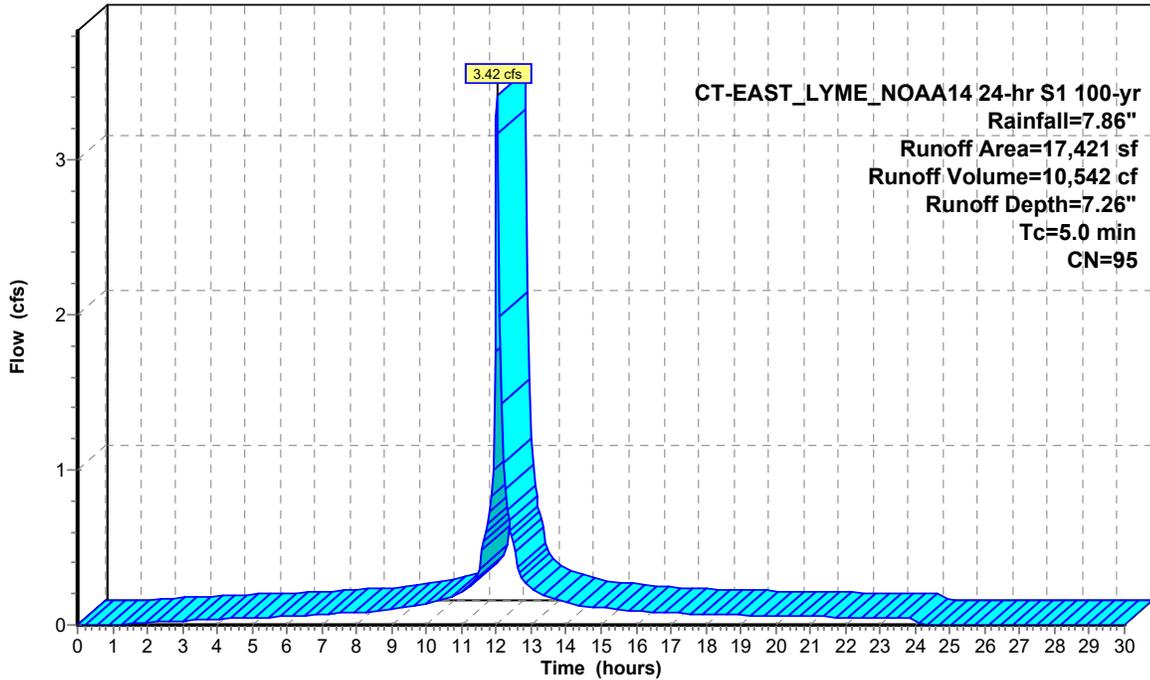
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
15,999	98	Paved parking, HSG B
1,422	61	>75% Grass cover, Good, HSG B
17,421	95	Weighted Average
1,422		8.16% Pervious Area
15,999		91.84% Impervious Area

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

Subcatchment PDA-105: PDA-105

Hydrograph



Runoff

Summary for Subcatchment PDA-106: PDA-106

Runoff = 2.06 cfs @ 12.02 hrs, Volume= 5,929 cf, Depth= 6.20"
 Routed to Reach 2R : 18" HDPE

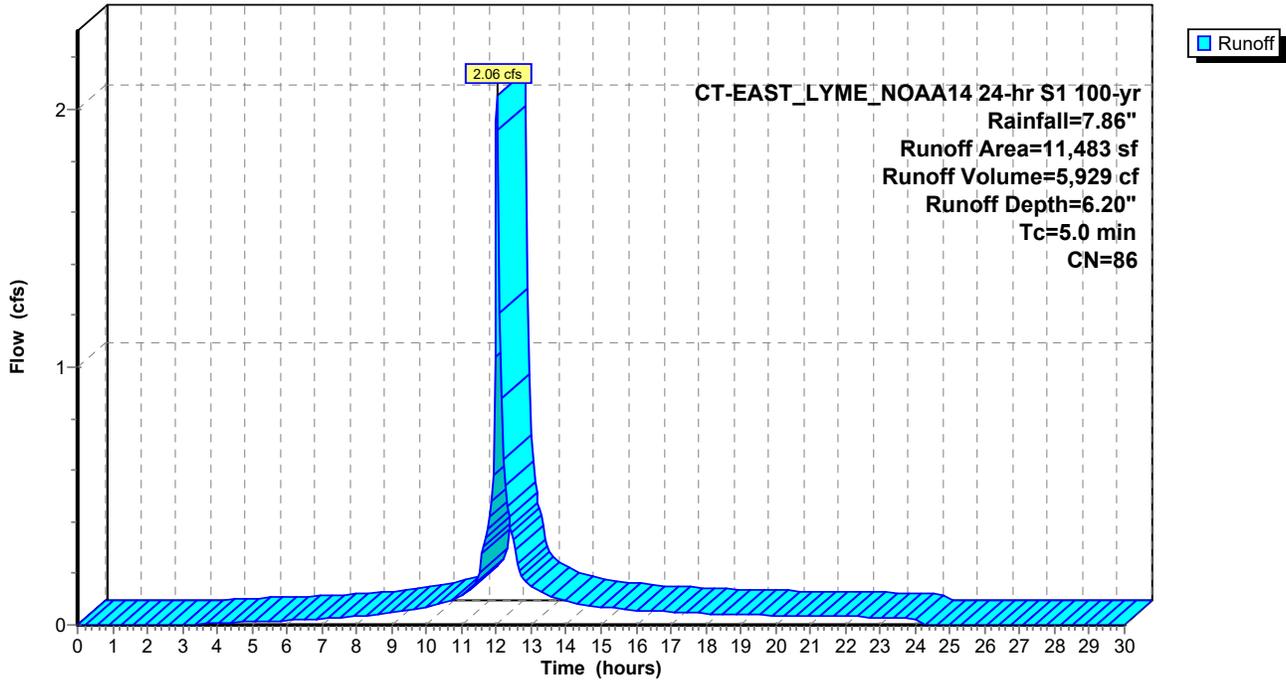
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
3,625	61	>75% Grass cover, Good, HSG B
7,858	98	Paved parking, HSG B
11,483	86	Weighted Average
3,625		31.57% Pervious Area
7,858		68.43% Impervious Area

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

Subcatchment PDA-106: PDA-106

Hydrograph



Summary for Subcatchment PDA-107: PDA-107

Runoff = 0.29 cfs @ 12.40 hrs, Volume= 3,335 cf, Depth= 0.84"
 Routed to Link DP-1 : Wetlands WA2 - WA12

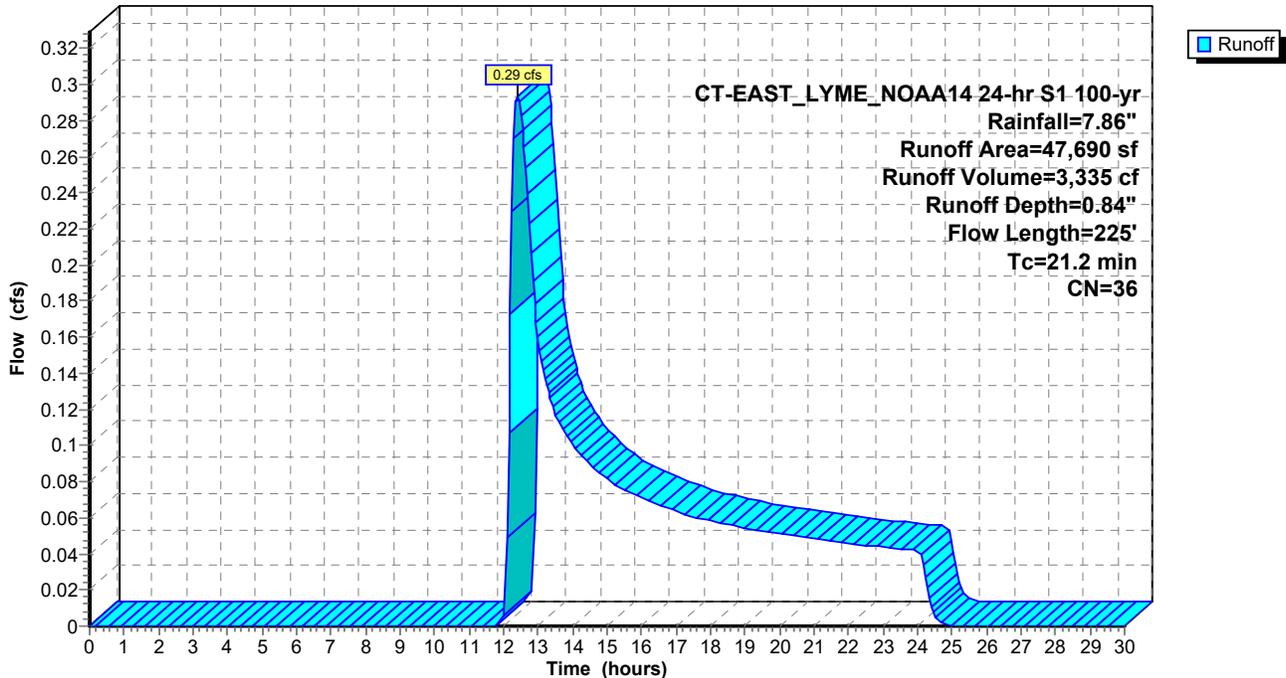
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
20,022	30	Woods, Good, HSG A
5,821	39	>75% Grass cover, Good, HSG A
2,302	61	>75% Grass cover, Good, HSG B
19,545	39	Pasture/grassland/range, Good, HSG A
47,690	36	Weighted Average
47,690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
5.1	150	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.1	15	0.1300	1.80		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
21.2	225	Total			

Subcatchment PDA-107: PDA-107

Hydrograph



Summary for Subcatchment PDA-108: PDA-108 - ROOF

Runoff = 36.69 cfs @ 12.02 hrs, Volume= 116,933 cf, Depth= 7.62"

Routed to Pond P-105 : SWMB P-105

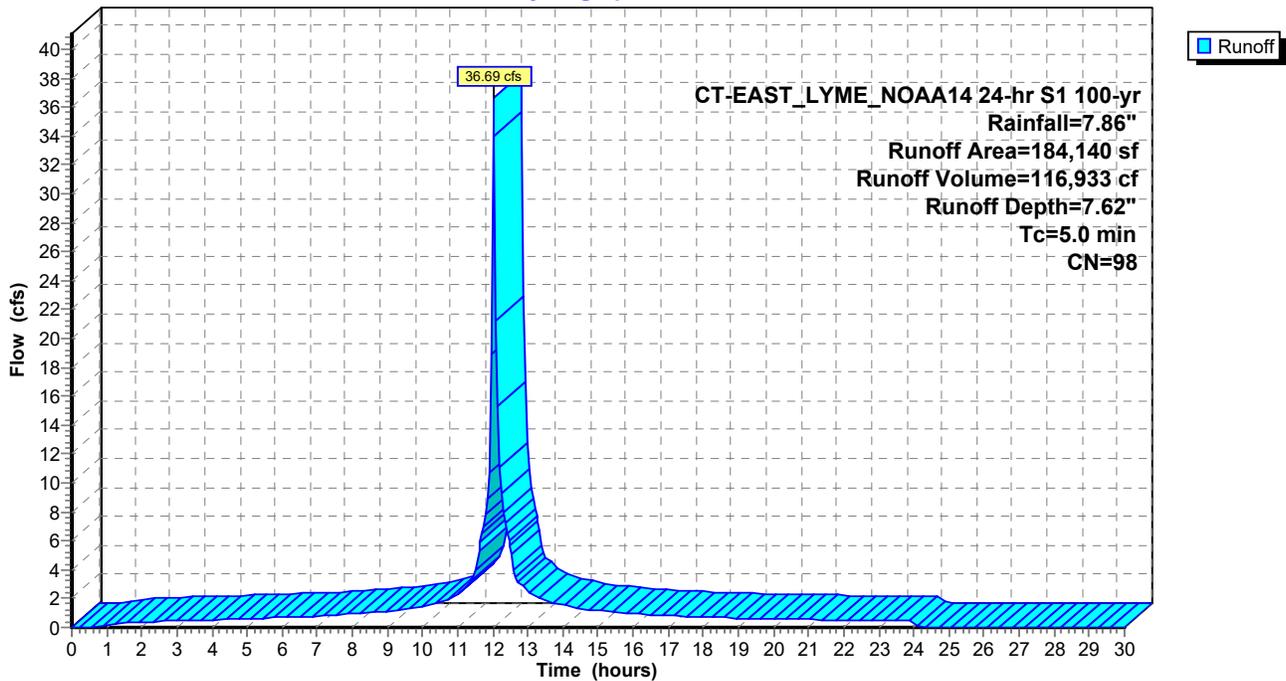
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
20,237	98	Roofs, HSG B
163,903	98	Roofs, HSG A
184,140	98	Weighted Average
184,140		100.00% Impervious Area

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

Subcatchment PDA-108: PDA-108 - ROOF

Hydrograph



Summary for Subcatchment PDA-109: PDA-109

Runoff = 10.63 cfs @ 12.03 hrs, Volume= 31,674 cf, Depth= 6.31"
 Routed to Pond P-106 : SWMB-106

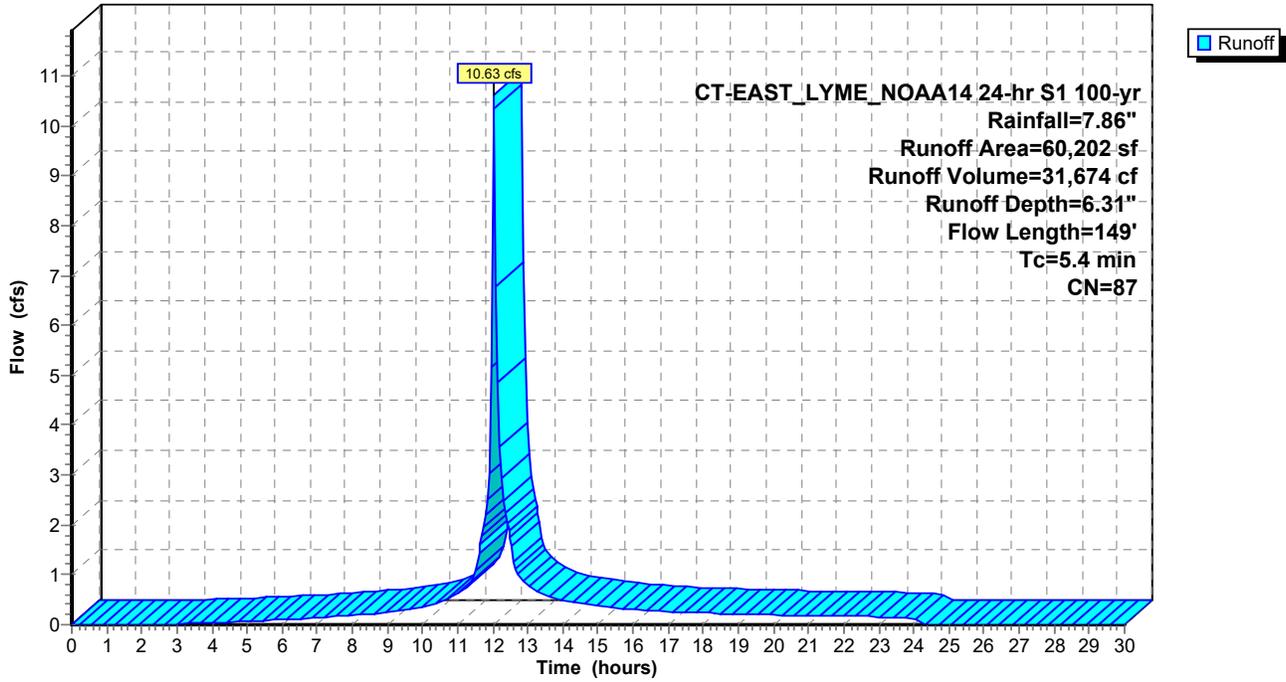
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
35,618	98	Paved parking, HSG A
11,394	98	Paved parking, HSG B
8,291	39	>75% Grass cover, Good, HSG A
4,899	61	>75% Grass cover, Good, HSG B
60,202	87	Weighted Average
13,190		21.91% Pervious Area
47,012		78.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	45	0.0200	0.15		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.1	20	0.0150	2.49		Shallow Concentrated Flow, gutter flow Paved Kv= 20.3 fps
0.3	84	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
5.4	149	Total			

Subcatchment PDA-109: PDA-109

Hydrograph



Summary for Subcatchment PDA-110: PDA-110

Runoff = 17.75 cfs @ 12.02 hrs, Volume= 54,089 cf, Depth= 7.14"
 Routed to Pond P-107 : SWMB P-107

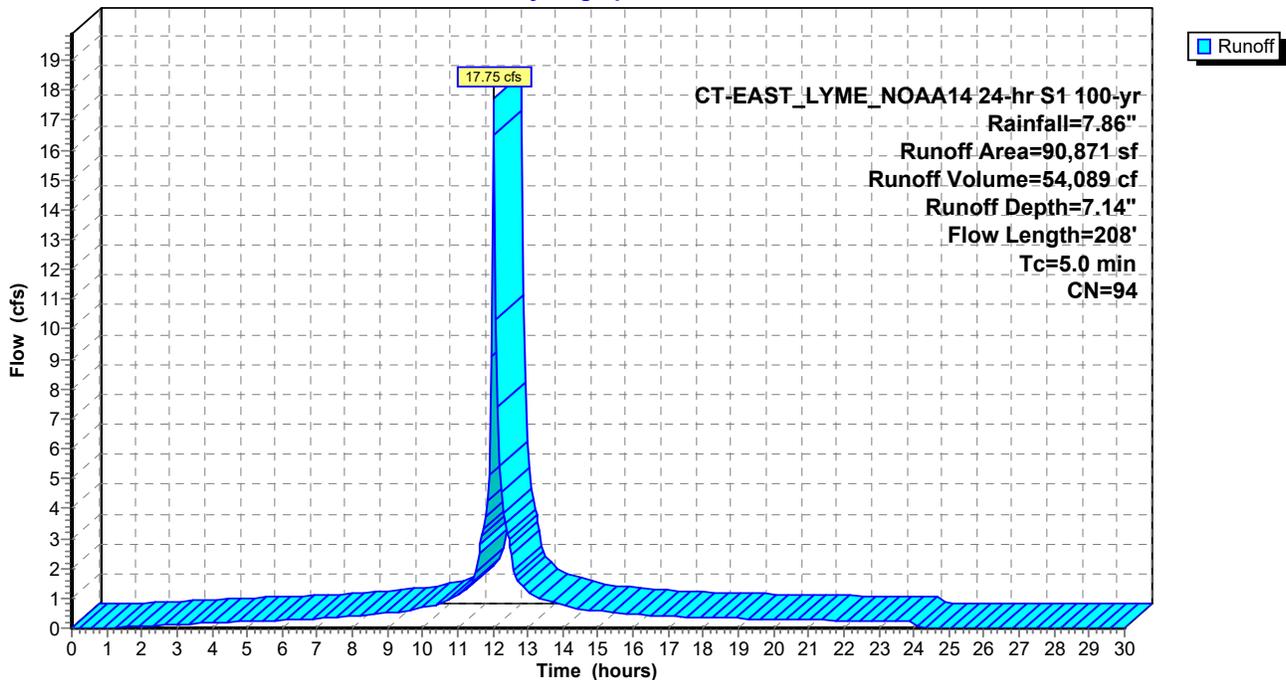
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
84,435	98	Paved parking, HSG A
6,436	39	>75% Grass cover, Good, HSG A
90,871	94	Weighted Average
6,436		7.08% Pervious Area
84,435		92.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	20	0.0200	0.13		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.5	70	0.0150	2.49		Shallow Concentrated Flow, Gutter Flow Paved Kv= 20.3 fps
0.4	118	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
3.5	208	Total, Increased to minimum Tc = 5.0 min			

Subcatchment PDA-110: PDA-110

Hydrograph



Summary for Subcatchment PDA-111: PDA-111

Runoff = 1.26 cfs @ 12.28 hrs, Volume= 9,136 cf, Depth= 1.28"
 Routed to Link DP-1 : Wetlands WA2 - WA12

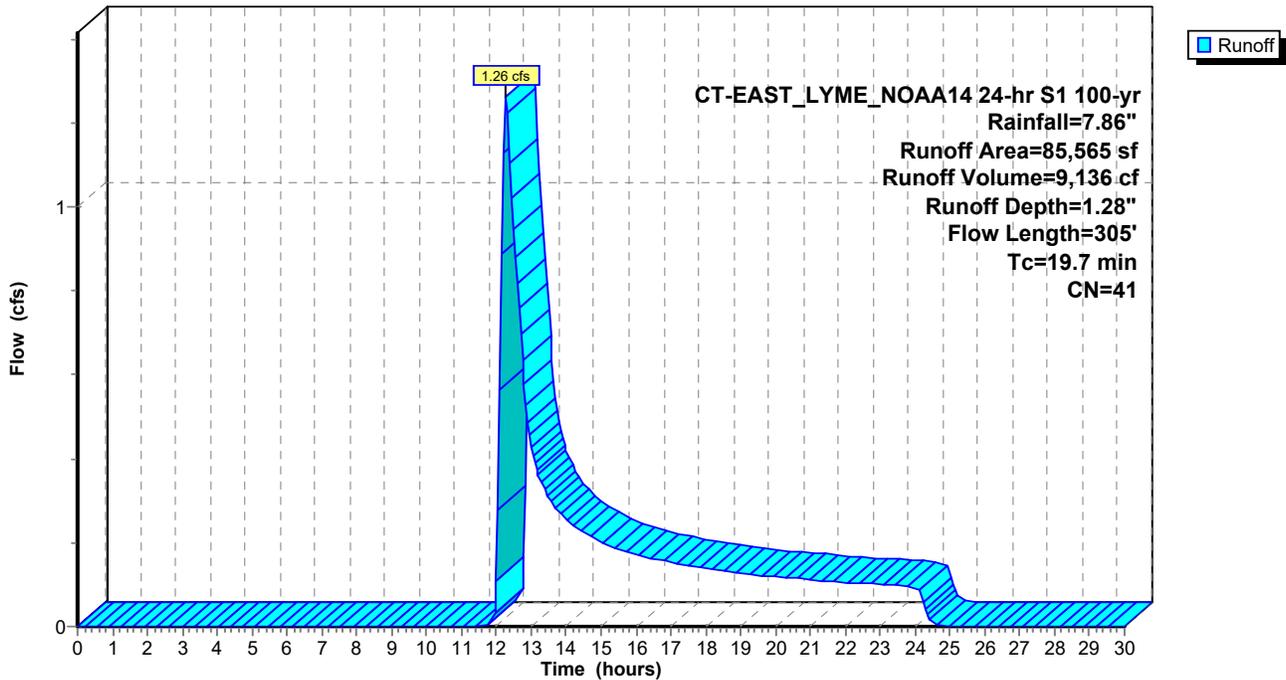
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
36,238	30	Woods, Good, HSG A
27,610	39	>75% Grass cover, Good, HSG A
3,052	55	Woods, Good, HSG B
18,665	61	Pasture/grassland/range, Good, HSG B
85,565	41	Weighted Average
85,565		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		Sheet Flow, Wooded Woods: Light underbrush n= 0.400 P2= 3.40"
3.9	255	0.0470	1.08		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
19.7	305	Total			

Subcatchment PDA-111: PDA-111

Hydrograph



Summary for Subcatchment PDA-200: PDA-200

Runoff = 9.12 cfs @ 12.29 hrs, Volume= 49,686 cf, Depth= 4.92"

Routed to Link DP-2 : Frontage Road

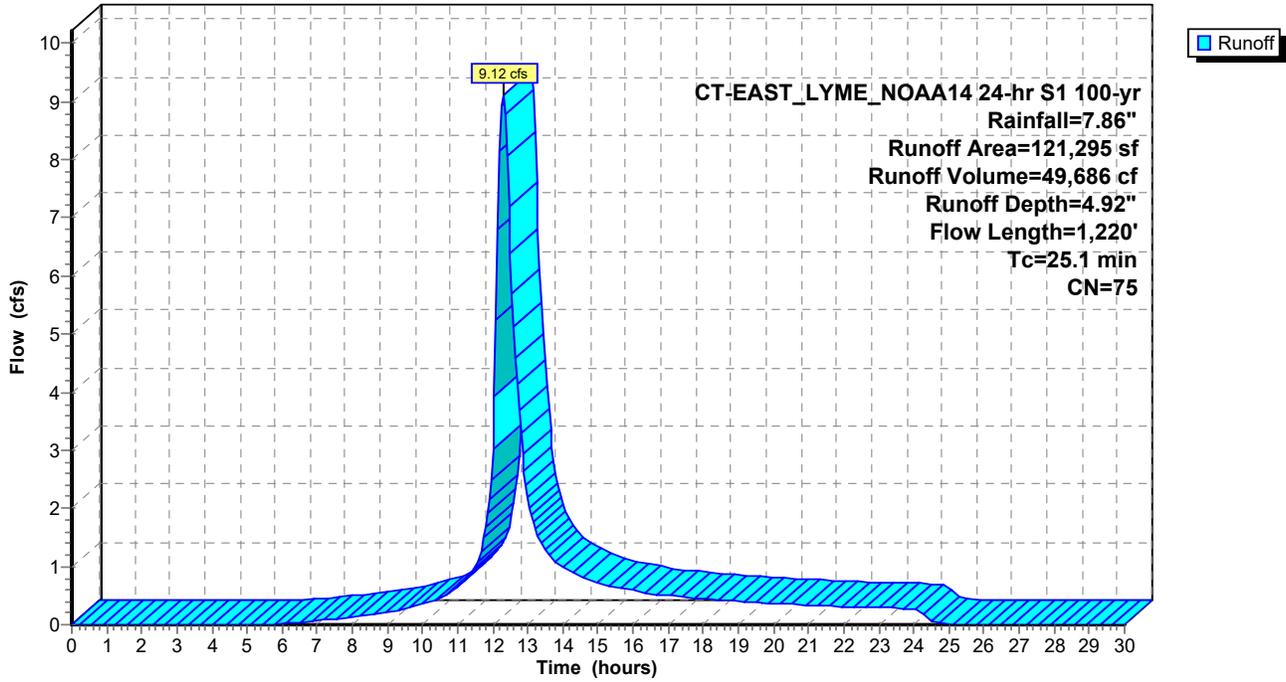
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 100-yr Rainfall=7.86"

Area (sf)	CN	Description
23,430	61	Pasture/grassland/range, Good, HSG B
52,449	61	>75% Grass cover, Good, HSG B
35,803	98	Paved parking, HSG B
567	98	Paved parking, HSG A
8,668	96	Gravel surface, HSG B
378	39	>75% Grass cover, Good, HSG A
121,295	75	Weighted Average
84,925		70.02% Pervious Area
36,370		29.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
3.2	60	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.9	160	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
2.9	930	0.0100	5.26	6.46	Pipe Channel, Piping 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
25.1	1,220	Total			

Subcatchment PDA-200: PDA-200

Hydrograph



Summary for Reach 1R: Grass Swale

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 1.86" for 100-yr event
 Inflow = 0.79 cfs @ 12.77 hrs, Volume= 7,741 cf
 Outflow = 0.79 cfs @ 12.86 hrs, Volume= 7,741 cf, Atten= 0%, Lag= 5.1 min
 Routed to Pond SB-LS : SB-LS

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.70 fps, Min. Travel Time= 3.0 min
 Avg. Velocity = 0.86 fps, Avg. Travel Time= 6.0 min

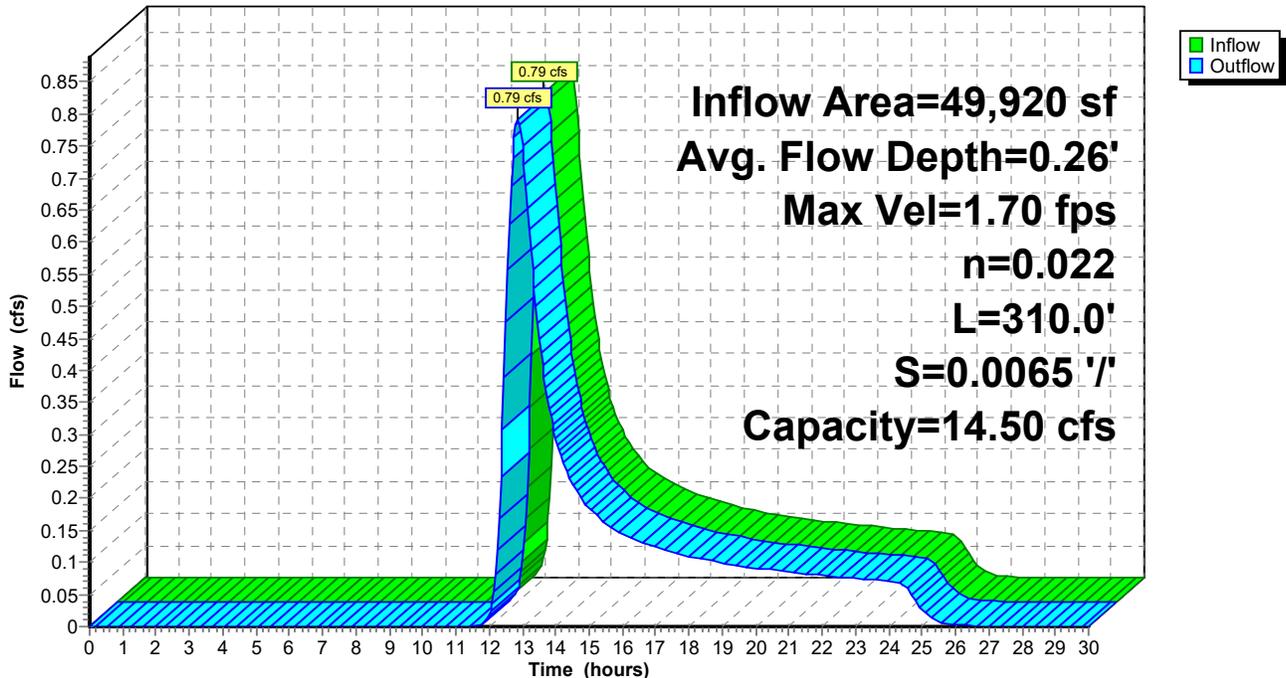
Peak Storage= 144 cf @ 12.81 hrs
 Average Depth at Peak Storage= 0.26' , Surface Width= 2.57'
 Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 14.50 cfs

1.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight
 Side Slope Z-value= 3.0 ' / ' Top Width= 7.00'
 Length= 310.0' Slope= 0.0065 ' / '
 Inlet Invert= 47.00', Outlet Invert= 45.00'



Reach 1R: Grass Swale

Hydrograph



Stage-Discharge for Reach 1R: Grass Swale

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
47.00	0.00	0.00	47.52	2.49	3.31
47.01	0.25	0.00	47.53	2.51	3.45
47.02	0.38	0.01	47.54	2.54	3.59
47.03	0.49	0.02	47.55	2.57	3.74
47.04	0.59	0.03	47.56	2.59	3.89
47.05	0.67	0.04	47.57	2.62	4.05
47.06	0.75	0.05	47.58	2.65	4.20
47.07	0.82	0.07	47.59	2.67	4.37
47.08	0.88	0.09	47.60	2.70	4.53
47.09	0.95	0.11	47.61	2.72	4.70
47.10	1.00	0.13	47.62	2.75	4.87
47.11	1.06	0.15	47.63	2.77	5.05
47.12	1.11	0.18	47.64	2.80	5.23
47.13	1.16	0.21	47.65	2.82	5.41
47.14	1.21	0.24	47.66	2.85	5.60
47.15	1.26	0.27	47.67	2.87	5.79
47.16	1.30	0.31	47.68	2.90	5.99
47.17	1.35	0.35	47.69	2.92	6.19
47.18	1.39	0.39	47.70	2.94	6.39
47.19	1.43	0.43	47.71	2.97	6.60
47.20	1.47	0.47	47.72	2.99	6.81
47.21	1.51	0.52	47.73	3.02	7.02
47.22	1.55	0.57	47.74	3.04	7.24
47.23	1.59	0.62	47.75	3.06	7.47
47.24	1.63	0.67	47.76	3.09	7.70
47.25	1.66	0.73	47.77	3.11	7.93
47.26	1.70	0.79	47.78	3.13	8.17
47.27	1.73	0.85	47.79	3.16	8.41
47.28	1.77	0.91	47.80	3.18	8.65
47.29	1.80	0.98	47.81	3.20	8.90
47.30	1.84	1.05	47.82	3.23	9.15
47.31	1.87	1.12	47.83	3.25	9.41
47.32	1.90	1.19	47.84	3.27	9.68
47.33	1.93	1.27	47.85	3.29	9.94
47.34	1.97	1.35	47.86	3.32	10.21
47.35	2.00	1.43	47.87	3.34	10.49
47.36	2.03	1.52	47.88	3.36	10.77
47.37	2.06	1.61	47.89	3.38	11.06
47.38	2.09	1.70	47.90	3.41	11.34
47.39	2.12	1.79	47.91	3.43	11.64
47.40	2.15	1.89	47.92	3.45	11.94
47.41	2.18	1.99	47.93	3.47	12.24
47.42	2.21	2.10	47.94	3.49	12.55
47.43	2.24	2.20	47.95	3.52	12.86
47.44	2.27	2.31	47.96	3.54	13.18
47.45	2.29	2.43	47.97	3.56	13.50
47.46	2.32	2.54	47.98	3.58	13.83
47.47	2.35	2.66	47.99	3.60	14.16
47.48	2.38	2.79	48.00	3.62	14.50
47.49	2.41	2.91			
47.50	2.43	3.04			
47.51	2.46	3.17			

Stage-Area-Storage for Reach 1R: Grass Swale

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
47.00	0.0	0	47.52	1.3	413
47.01	0.0	3	47.53	1.4	426
47.02	0.0	7	47.54	1.4	439
47.03	0.0	10	47.55	1.5	452
47.04	0.0	14	47.56	1.5	465
47.05	0.1	18	47.57	1.5	479
47.06	0.1	22	47.58	1.6	493
47.07	0.1	26	47.59	1.6	507
47.08	0.1	31	47.60	1.7	521
47.09	0.1	35	47.61	1.7	535
47.10	0.1	40	47.62	1.8	550
47.11	0.1	45	47.63	1.8	564
47.12	0.2	51	47.64	1.9	579
47.13	0.2	56	47.65	1.9	594
47.14	0.2	62	47.66	2.0	610
47.15	0.2	67	47.67	2.0	625
47.16	0.2	73	47.68	2.1	641
47.17	0.3	80	47.69	2.1	657
47.18	0.3	86	47.70	2.2	673
47.19	0.3	92	47.71	2.2	689
47.20	0.3	99	47.72	2.3	705
47.21	0.3	106	47.73	2.3	722
47.22	0.4	113	47.74	2.4	739
47.23	0.4	120	47.75	2.4	756
47.24	0.4	128	47.76	2.5	773
47.25	0.4	136	47.77	2.5	790
47.26	0.5	143	47.78	2.6	808
47.27	0.5	151	47.79	2.7	825
47.28	0.5	160	47.80	2.7	843
47.29	0.5	168	47.81	2.8	861
47.30	0.6	177	47.82	2.8	880
47.31	0.6	185	47.83	2.9	898
47.32	0.6	194	47.84	3.0	917
47.33	0.7	204	47.85	3.0	935
47.34	0.7	213	47.86	3.1	954
47.35	0.7	222	47.87	3.1	974
47.36	0.7	232	47.88	3.2	993
47.37	0.8	242	47.89	3.3	1,013
47.38	0.8	252	47.90	3.3	1,032
47.39	0.8	262	47.91	3.4	1,052
47.40	0.9	273	47.92	3.5	1,072
47.41	0.9	283	47.93	3.5	1,093
47.42	0.9	294	47.94	3.6	1,113
47.43	1.0	305	47.95	3.7	1,134
47.44	1.0	316	47.96	3.7	1,155
47.45	1.1	328	47.97	3.8	1,176
47.46	1.1	339	47.98	3.9	1,197
47.47	1.1	351	47.99	3.9	1,218
47.48	1.2	363	48.00	4.0	1,240
47.49	1.2	375			
47.50	1.3	388			
47.51	1.3	400			

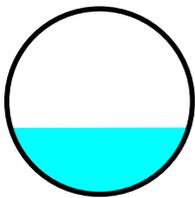
Summary for Reach 2R: 18" HDPE

Inflow Area = 219,734 sf, 97.37% Impervious, Inflow Depth = 1.74" for 100-yr event
 Inflow = 8.10 cfs @ 12.23 hrs, Volume= 31,860 cf
 Outflow = 8.01 cfs @ 12.30 hrs, Volume= 31,860 cf, Atten= 1%, Lag= 3.8 min
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 5.06 fps, Min. Travel Time= 2.0 min
 Avg. Velocity = 1.56 fps, Avg. Travel Time= 6.6 min

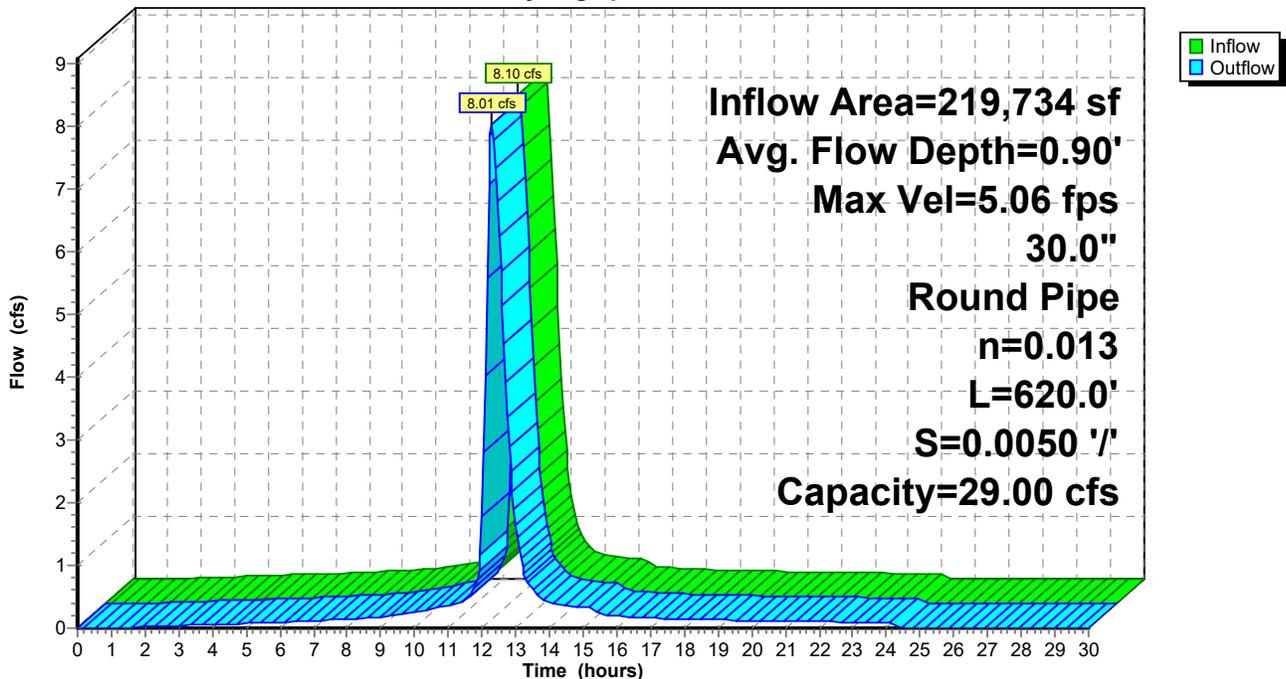
Peak Storage= 988 cf @ 12.26 hrs
 Average Depth at Peak Storage= 0.90' , Surface Width= 2.40'
 Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.00 cfs

30.0" Round Pipe
 n= 0.013
 Length= 620.0' Slope= 0.0050 '/'
 Inlet Invert= 48.10', Outlet Invert= 45.00'



Reach 2R: 18" HDPE

Hydrograph



Stage-Discharge for Reach 2R: 18" HDPE

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
48.10	0.00	0.00	49.14	5.43	10.50	50.18	6.73	29.38
48.12	0.42	0.00	49.16	5.48	10.86	50.20	6.73	29.61
48.14	0.71	0.01	49.18	5.53	11.24	50.22	6.72	29.83
48.16	0.93	0.03	49.20	5.58	11.61	50.24	6.71	30.04
48.18	1.13	0.05	49.22	5.63	11.99	50.26	6.71	30.23
48.20	1.31	0.09	49.24	5.67	12.37	50.28	6.70	30.41
48.22	1.48	0.13	49.26	5.72	12.75	50.30	6.68	30.58
48.24	1.63	0.18	49.28	5.76	13.14	50.32	6.67	30.72
48.26	1.78	0.24	49.30	5.81	13.52	50.34	6.65	30.85
48.28	1.92	0.30	49.32	5.85	13.91	50.36	6.63	30.96
48.30	2.06	0.38	49.34	5.89	14.31	50.38	6.61	31.06
48.32	2.18	0.46	49.36	5.93	14.70	50.40	6.59	31.13
48.34	2.31	0.56	49.38	5.97	15.09	50.42	6.56	31.17
48.36	2.43	0.66	49.40	6.01	15.49	50.44	6.53	31.19
48.38	2.55	0.77	49.42	6.04	15.89	50.46	6.50	31.18
48.40	2.66	0.89	49.44	6.08	16.29	50.48	6.46	31.15
48.42	2.77	1.02	49.46	6.11	16.69	50.50	6.42	31.07
48.44	2.87	1.15	49.48	6.15	17.09	50.52	6.37	30.94
48.46	2.98	1.30	49.50	6.18	17.49	50.54	6.31	30.75
48.48	3.08	1.45	49.52	6.22	17.89	50.56	6.23	30.48
48.50	3.18	1.61	49.54	6.25	18.29	50.58	6.12	29.98
48.52	3.27	1.78	49.56	6.28	18.69	50.60	5.91	29.00
48.54	3.37	1.96	49.58	6.31	19.09			
48.56	3.46	2.15	49.60	6.34	19.49			
48.58	3.55	2.34	49.62	6.36	19.88			
48.60	3.63	2.54	49.64	6.39	20.28			
48.62	3.72	2.75	49.66	6.42	20.67			
48.64	3.80	2.97	49.68	6.44	21.06			
48.66	3.88	3.19	49.70	6.47	21.45			
48.68	3.97	3.42	49.72	6.49	21.84			
48.70	4.04	3.66	49.74	6.51	22.23			
48.72	4.12	3.91	49.76	6.53	22.61			
48.74	4.20	4.17	49.78	6.55	22.99			
48.76	4.27	4.43	49.80	6.57	23.36			
48.78	4.34	4.69	49.82	6.59	23.73			
48.80	4.41	4.97	49.84	6.61	24.10			
48.82	4.48	5.25	49.86	6.62	24.46			
48.84	4.55	5.54	49.88	6.64	24.82			
48.86	4.62	5.83	49.90	6.65	25.17			
48.88	4.68	6.13	49.92	6.67	25.52			
48.90	4.75	6.43	49.94	6.68	25.86			
48.92	4.81	6.74	49.96	6.69	26.20			
48.94	4.87	7.06	49.98	6.70	26.53			
48.96	4.94	7.38	50.00	6.71	26.85			
48.98	5.00	7.71	50.02	6.72	27.17			
49.00	5.05	8.04	50.04	6.72	27.47			
49.02	5.11	8.38	50.06	6.73	27.77			
49.04	5.17	8.72	50.08	6.73	28.07			
49.06	5.22	9.07	50.10	6.73	28.35			
49.08	5.28	9.42	50.12	6.74	28.62			
49.10	5.33	9.77	50.14	6.74	28.89			
49.12	5.38	10.13	50.16	6.73	29.14			

Stage-Area-Storage for Reach 2R: 18" HDPE

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
48.10	0.0	0
48.15	0.0	15
48.20	0.1	41
48.25	0.1	75
48.30	0.2	114
48.35	0.3	158
48.40	0.3	207
48.45	0.4	259
48.50	0.5	314
48.55	0.6	373
48.60	0.7	433
48.65	0.8	496
48.70	0.9	562
48.75	1.0	629
48.80	1.1	698
48.85	1.2	768
48.90	1.4	840
48.95	1.5	912
49.00	1.6	986
49.05	1.7	1,061
49.10	1.8	1,137
49.15	2.0	1,213
49.20	2.1	1,290
49.25	2.2	1,367
49.30	2.3	1,444
49.35	2.5	1,522
49.40	2.6	1,599
49.45	2.7	1,677
49.50	2.8	1,754
49.55	3.0	1,830
49.60	3.1	1,907
49.65	3.2	1,982
49.70	3.3	2,057
49.75	3.4	2,131
49.80	3.6	2,204
49.85	3.7	2,276
49.90	3.8	2,346
49.95	3.9	2,415
50.00	4.0	2,482
50.05	4.1	2,547
50.10	4.2	2,610
50.15	4.3	2,671
50.20	4.4	2,729
50.25	4.5	2,784
50.30	4.6	2,837
50.35	4.7	2,885
50.40	4.7	2,929
50.45	4.8	2,969
50.50	4.8	3,003
50.55	4.9	3,029
50.60	4.9	3,043

Summary for Pond 3R: OCS-102 to MH-101

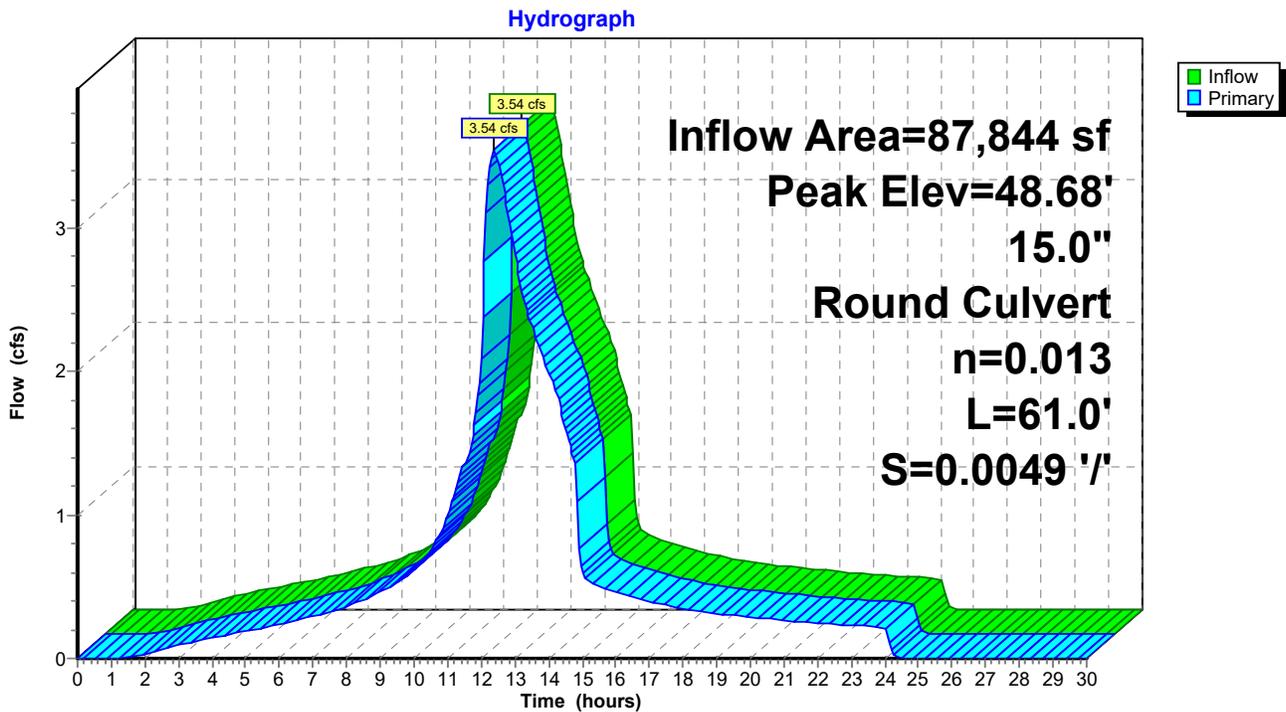
Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 7.02" for 100-yr event
 Inflow = 3.54 cfs @ 12.37 hrs, Volume= 51,412 cf
 Outflow = 3.54 cfs @ 12.37 hrs, Volume= 51,412 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.54 cfs @ 12.37 hrs, Volume= 51,412 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.68' @ 12.37 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	47.50'	15.0" Round Culvert L= 61.0' Ke= 0.500 Inlet / Outlet Invert= 47.50' / 47.20' S= 0.0049 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.53 cfs @ 12.37 hrs HW=48.68' (Free Discharge)
 ↳1=Culvert (Barrel Controls 3.53 cfs @ 3.81 fps)

Pond 3R: OCS-102 to MH-101



Stage-Discharge for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.50	0.00	48.02	0.89	48.54	2.94
47.51	0.00	48.03	0.92	48.55	2.98
47.52	0.00	48.04	0.95	48.56	3.03
47.53	0.00	48.05	0.98	48.57	3.07
47.54	0.00	48.06	1.02	48.58	3.11
47.55	0.01	48.07	1.05	48.59	3.16
47.56	0.01	48.08	1.08	48.60	3.20
47.57	0.01	48.09	1.12	48.61	3.25
47.58	0.02	48.10	1.15	48.62	3.29
47.59	0.03	48.11	1.19	48.63	3.33
47.60	0.03	48.12	1.22	48.64	3.37
47.61	0.04	48.13	1.26	48.65	3.42
47.62	0.05	48.14	1.30	48.66	3.46
47.63	0.06	48.15	1.33	48.67	3.50
47.64	0.06	48.16	1.37	48.68	3.55
47.65	0.07	48.17	1.41	48.69	3.59
47.66	0.09	48.18	1.44	48.70	3.63
47.67	0.10	48.19	1.48	48.71	3.67
47.68	0.11	48.20	1.52	48.72	3.72
47.69	0.12	48.21	1.56	48.73	3.76
47.70	0.14	48.22	1.60	48.74	3.80
47.71	0.15	48.23	1.64	48.75	3.84
47.72	0.16	48.24	1.68		
47.73	0.18	48.25	1.72		
47.74	0.20	48.26	1.75		
47.75	0.21	48.27	1.79		
47.76	0.23	48.28	1.84		
47.77	0.25	48.29	1.88		
47.78	0.27	48.30	1.92		
47.79	0.29	48.31	1.96		
47.80	0.31	48.32	2.00		
47.81	0.33	48.33	2.04		
47.82	0.35	48.34	2.08		
47.83	0.37	48.35	2.12		
47.84	0.39	48.36	2.16		
47.85	0.42	48.37	2.21		
47.86	0.44	48.38	2.25		
47.87	0.46	48.39	2.29		
47.88	0.49	48.40	2.33		
47.89	0.51	48.41	2.38		
47.90	0.54	48.42	2.42		
47.91	0.57	48.43	2.46		
47.92	0.59	48.44	2.51		
47.93	0.62	48.45	2.55		
47.94	0.65	48.46	2.59		
47.95	0.68	48.47	2.64		
47.96	0.70	48.48	2.68		
47.97	0.73	48.49	2.72		
47.98	0.76	48.50	2.77		
47.99	0.79	48.51	2.81		
48.00	0.82	48.52	2.85		
48.01	0.86	48.53	2.90		

Stage-Area-Storage for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0	48.71	0
47.68	0	48.20	0	48.72	0
47.69	0	48.21	0	48.73	0
47.70	0	48.22	0	48.74	0
47.71	0	48.23	0	48.75	0
47.72	0	48.24	0		
47.73	0	48.25	0		
47.74	0	48.26	0		
47.75	0	48.27	0		
47.76	0	48.28	0		
47.77	0	48.29	0		
47.78	0	48.30	0		
47.79	0	48.31	0		
47.80	0	48.32	0		
47.81	0	48.33	0		
47.82	0	48.34	0		
47.83	0	48.35	0		
47.84	0	48.36	0		
47.85	0	48.37	0		
47.86	0	48.38	0		
47.87	0	48.39	0		
47.88	0	48.40	0		
47.89	0	48.41	0		
47.90	0	48.42	0		
47.91	0	48.43	0		
47.92	0	48.44	0		
47.93	0	48.45	0		
47.94	0	48.46	0		
47.95	0	48.47	0		
47.96	0	48.48	0		
47.97	0	48.49	0		
47.98	0	48.50	0		
47.99	0	48.51	0		
48.00	0	48.52	0		
48.01	0	48.53	0		

Summary for Pond 4R: MH-101 to MH-102

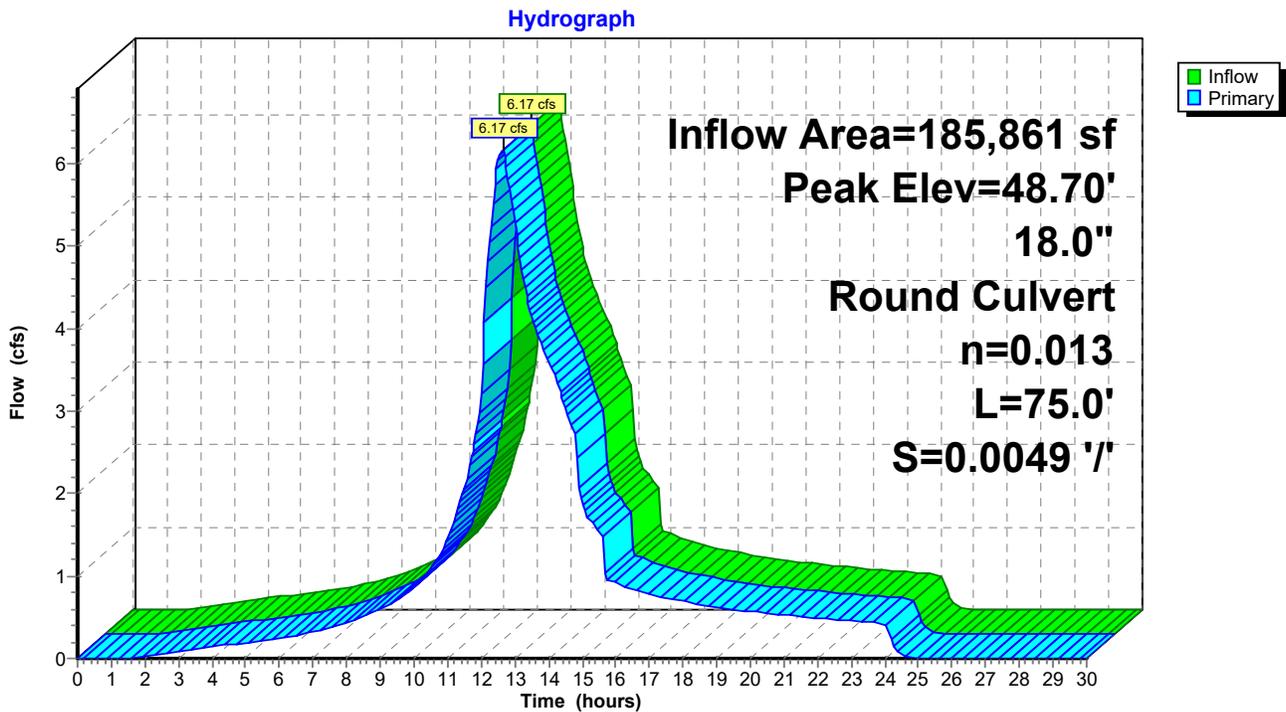
Inflow Area = 185,861 sf, 62.85% Impervious, Inflow Depth = 5.73" for 100-yr event
 Inflow = 6.17 cfs @ 12.64 hrs, Volume= 88,755 cf
 Outflow = 6.17 cfs @ 12.64 hrs, Volume= 88,755 cf, Atten= 0%, Lag= 0.0 min
 Primary = 6.17 cfs @ 12.64 hrs, Volume= 88,755 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.70' @ 12.64 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	47.20'	18.0" Round Culvert L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.83' S= 0.0049 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=6.16 cfs @ 12.64 hrs HW=48.70' (Free Discharge)
 ↑1=Culvert (Barrel Controls 6.16 cfs @ 4.33 fps)

Pond 4R: MH-101 to MH-102



Stage-Discharge for Pond 4R: MH-101 to MH-102

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.20	0.00	47.72	1.01	48.24	3.52
47.21	0.00	47.73	1.05	48.25	3.57
47.22	0.00	47.74	1.09	48.26	3.63
47.23	0.00	47.75	1.13	48.27	3.69
47.24	0.00	47.76	1.17	48.28	3.74
47.25	0.01	47.77	1.21	48.29	3.80
47.26	0.01	47.78	1.25	48.30	3.86
47.27	0.02	47.79	1.29	48.31	3.91
47.28	0.02	47.80	1.33	48.32	3.97
47.29	0.03	47.81	1.37	48.33	4.03
47.30	0.04	47.82	1.41	48.34	4.09
47.31	0.04	47.83	1.45	48.35	4.14
47.32	0.05	47.84	1.50	48.36	4.20
47.33	0.06	47.85	1.54	48.37	4.26
47.34	0.07	47.86	1.58	48.38	4.32
47.35	0.08	47.87	1.63	48.39	4.37
47.36	0.10	47.88	1.67	48.40	4.43
47.37	0.11	47.89	1.72	48.41	4.49
47.38	0.12	47.90	1.76	48.42	4.55
47.39	0.14	47.91	1.81	48.43	4.61
47.40	0.15	47.92	1.86	48.44	4.66
47.41	0.17	47.93	1.90	48.45	4.72
47.42	0.18	47.94	1.95	48.46	4.78
47.43	0.20	47.95	2.00	48.47	4.84
47.44	0.22	47.96	2.05	48.48	4.90
47.45	0.24	47.97	2.09	48.49	4.95
47.46	0.26	47.98	2.14	48.50	5.01
47.47	0.28	47.99	2.19	48.51	5.07
47.48	0.30	48.00	2.24	48.52	5.13
47.49	0.32	48.01	2.29	48.53	5.18
47.50	0.35	48.02	2.34	48.54	5.24
47.51	0.37	48.03	2.39	48.55	5.30
47.52	0.39	48.04	2.44	48.56	5.36
47.53	0.42	48.05	2.49	48.57	5.41
47.54	0.44	48.06	2.54	48.58	5.47
47.55	0.47	48.07	2.60	48.59	5.53
47.56	0.50	48.08	2.65	48.60	5.59
47.57	0.52	48.09	2.70	48.61	5.64
47.58	0.55	48.10	2.75	48.62	5.70
47.59	0.58	48.11	2.81	48.63	5.76
47.60	0.61	48.12	2.86	48.64	5.81
47.61	0.64	48.13	2.91	48.65	5.87
47.62	0.67	48.14	2.97	48.66	5.92
47.63	0.70	48.15	3.02	48.67	5.98
47.64	0.74	48.16	3.08	48.68	6.04
47.65	0.77	48.17	3.13	48.69	6.09
47.66	0.80	48.18	3.18	48.70	6.15
47.67	0.84	48.19	3.24	48.71	6.20
47.68	0.87	48.20	3.29	48.72	6.25
47.69	0.91	48.21	3.35		
47.70	0.94	48.22	3.41		
47.71	0.98	48.23	3.46		

Stage-Area-Storage for Pond 4R: MH-101 to MH-102

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0	48.34	0
47.31	0	47.83	0	48.35	0
47.32	0	47.84	0	48.36	0
47.33	0	47.85	0	48.37	0
47.34	0	47.86	0	48.38	0
47.35	0	47.87	0	48.39	0
47.36	0	47.88	0	48.40	0
47.37	0	47.89	0	48.41	0
47.38	0	47.90	0	48.42	0
47.39	0	47.91	0	48.43	0
47.40	0	47.92	0	48.44	0
47.41	0	47.93	0	48.45	0
47.42	0	47.94	0	48.46	0
47.43	0	47.95	0	48.47	0
47.44	0	47.96	0	48.48	0
47.45	0	47.97	0	48.49	0
47.46	0	47.98	0	48.50	0
47.47	0	47.99	0	48.51	0
47.48	0	48.00	0	48.52	0
47.49	0	48.01	0	48.53	0
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0	48.71	0
47.68	0	48.20	0	48.72	0
47.69	0	48.21	0		
47.70	0	48.22	0		
47.71	0	48.23	0		

Summary for Pond 5R: MH-102 to MH-103

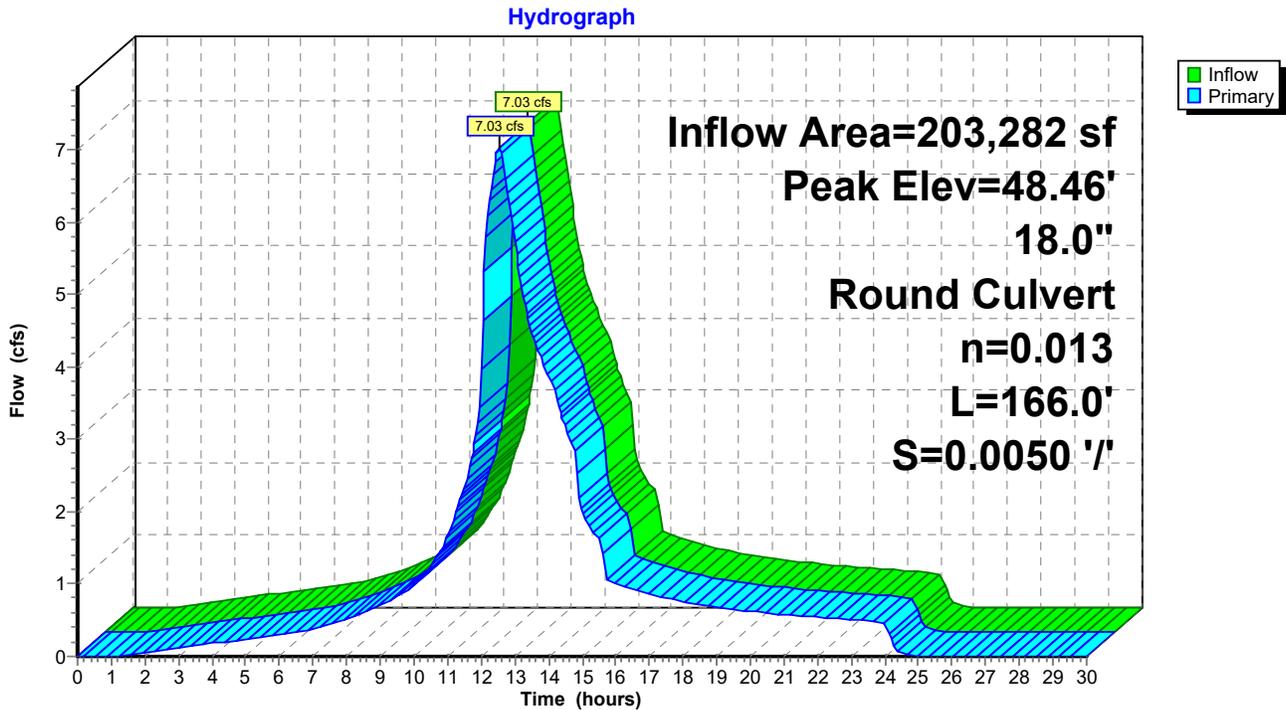
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 5.86" for 100-yr event
 Inflow = 7.03 cfs @ 12.53 hrs, Volume= 99,297 cf
 Outflow = 7.03 cfs @ 12.53 hrs, Volume= 99,297 cf, Atten= 0%, Lag= 0.0 min
 Primary = 7.03 cfs @ 12.53 hrs, Volume= 99,297 cf
 Routed to Pond 6R : MH-103 to FES-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.46' @ 12.53 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.83'	18.0" Round Culvert L= 166.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 46.83' / 46.00' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=7.02 cfs @ 12.53 hrs HW=48.46' (Free Discharge)
 ↳ **1=Culvert** (Barrel Controls 7.02 cfs @ 4.56 fps)

Pond 5R: MH-102 to MH-103



Stage-Discharge for Pond 5R: MH-102 to MH-103

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.83	0.00	47.35	1.05	47.87	3.69	48.39	6.69
46.84	0.00	47.36	1.09	47.88	3.75	48.40	6.74
46.85	0.00	47.37	1.13	47.89	3.81	48.41	6.79
46.86	0.00	47.38	1.17	47.90	3.87	48.42	6.84
46.87	0.00	47.39	1.22	47.91	3.93	48.43	6.89
46.88	0.01	47.40	1.26	47.92	3.99	48.44	6.93
46.89	0.01	47.41	1.30	47.93	4.05	48.45	6.98
46.90	0.02	47.42	1.34	47.94	4.11	48.46	7.03
46.91	0.02	47.43	1.39	47.95	4.17	48.47	7.08
46.92	0.03	47.44	1.43	47.96	4.22		
46.93	0.04	47.45	1.47	47.97	4.28		
46.94	0.04	47.46	1.52	47.98	4.34		
46.95	0.05	47.47	1.56	47.99	4.40		
46.96	0.06	47.48	1.61	48.00	4.46		
46.97	0.07	47.49	1.66	48.01	4.52		
46.98	0.08	47.50	1.70	48.02	4.58		
46.99	0.10	47.51	1.75	48.03	4.64		
47.00	0.11	47.52	1.80	48.04	4.70		
47.01	0.12	47.53	1.85	48.05	4.76		
47.02	0.14	47.54	1.89	48.06	4.82		
47.03	0.15	47.55	1.94	48.07	4.88		
47.04	0.17	47.56	1.99	48.08	4.94		
47.05	0.19	47.57	2.04	48.09	5.00		
47.06	0.21	47.58	2.09	48.10	5.06		
47.07	0.22	47.59	2.14	48.11	5.12		
47.08	0.24	47.60	2.20	48.12	5.18		
47.09	0.26	47.61	2.25	48.13	5.24		
47.10	0.29	47.62	2.30	48.14	5.29		
47.11	0.31	47.63	2.35	48.15	5.35		
47.12	0.33	47.64	2.40	48.16	5.41		
47.13	0.35	47.65	2.46	48.17	5.47		
47.14	0.38	47.66	2.51	48.18	5.53		
47.15	0.40	47.67	2.56	48.19	5.59		
47.16	0.43	47.68	2.62	48.20	5.64		
47.17	0.46	47.69	2.67	48.21	5.70		
47.18	0.48	47.70	2.73	48.22	5.76		
47.19	0.51	47.71	2.78	48.23	5.82		
47.20	0.54	47.72	2.84	48.24	5.87		
47.21	0.57	47.73	2.89	48.25	5.93		
47.22	0.60	47.74	2.95	48.26	5.99		
47.23	0.63	47.75	3.00	48.27	6.04		
47.24	0.66	47.76	3.06	48.28	6.10		
47.25	0.69	47.77	3.12	48.29	6.15		
47.26	0.73	47.78	3.17	48.30	6.21		
47.27	0.76	47.79	3.23	48.31	6.26		
47.28	0.80	47.80	3.29	48.32	6.32		
47.29	0.83	47.81	3.34	48.33	6.37		
47.30	0.87	47.82	3.40	48.34	6.43		
47.31	0.90	47.83	3.46	48.35	6.48		
47.32	0.94	47.84	3.52	48.36	6.53		
47.33	0.98	47.85	3.58	48.37	6.58		
47.34	1.02	47.86	3.63	48.38	6.64		

Stage-Area-Storage for Pond 5R: MH-102 to MH-103

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.83	0	47.87	0
46.85	0	47.89	0
46.87	0	47.91	0
46.89	0	47.93	0
46.91	0	47.95	0
46.93	0	47.97	0
46.95	0	47.99	0
46.97	0	48.01	0
46.99	0	48.03	0
47.01	0	48.05	0
47.03	0	48.07	0
47.05	0	48.09	0
47.07	0	48.11	0
47.09	0	48.13	0
47.11	0	48.15	0
47.13	0	48.17	0
47.15	0	48.19	0
47.17	0	48.21	0
47.19	0	48.23	0
47.21	0	48.25	0
47.23	0	48.27	0
47.25	0	48.29	0
47.27	0	48.31	0
47.29	0	48.33	0
47.31	0	48.35	0
47.33	0	48.37	0
47.35	0	48.39	0
47.37	0	48.41	0
47.39	0	48.43	0
47.41	0	48.45	0
47.43	0	48.47	0
47.45	0		
47.47	0		
47.49	0		
47.51	0		
47.53	0		
47.55	0		
47.57	0		
47.59	0		
47.61	0		
47.63	0		
47.65	0		
47.67	0		
47.69	0		
47.71	0		
47.73	0		
47.75	0		
47.77	0		
47.79	0		
47.81	0		
47.83	0		
47.85	0		

Summary for Pond 6R: MH-103 to FES-101

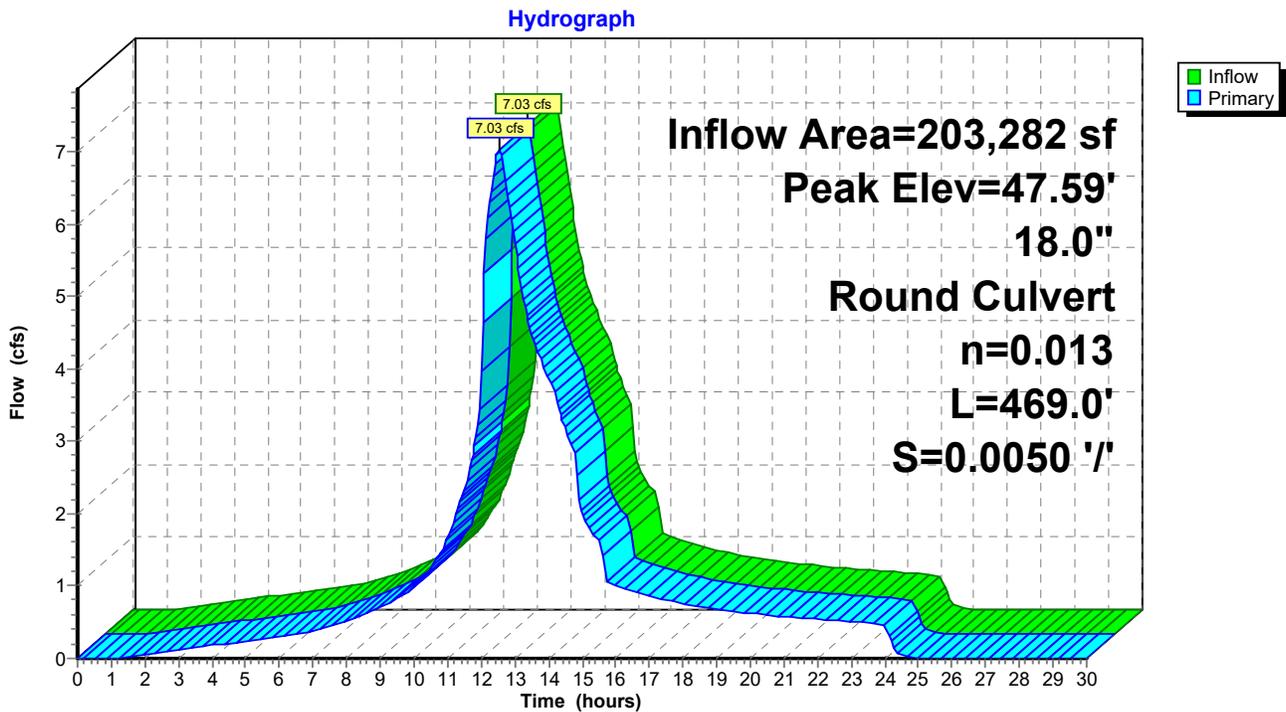
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 5.86" for 100-yr event
 Inflow = 7.03 cfs @ 12.53 hrs, Volume= 99,297 cf
 Outflow = 7.03 cfs @ 12.53 hrs, Volume= 99,297 cf, Atten= 0%, Lag= 0.0 min
 Primary = 7.03 cfs @ 12.53 hrs, Volume= 99,297 cf
 Routed to Pond P-109 : SWMB P-109

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.59' @ 12.53 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.00'	18.0" Round Culvert L= 469.0' Ke= 0.500 Inlet / Outlet Invert= 46.00' / 43.65' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=7.02 cfs @ 12.53 hrs HW=47.59' (Free Discharge)
 ↳1=Culvert (Barrel Controls 7.02 cfs @ 4.67 fps)

Pond 6R: MH-103 to FES-101



Stage-Discharge for Pond 6R: MH-103 to FES-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.00	0.00	46.52	1.08	47.04	3.85	47.56	6.89
46.01	0.00	46.53	1.12	47.05	3.91	47.57	6.94
46.02	0.00	46.54	1.16	47.06	3.97	47.58	6.99
46.03	0.00	46.55	1.21	47.07	4.03	47.59	7.04
46.04	0.00	46.56	1.25	47.08	4.09		
46.05	0.01	46.57	1.29	47.09	4.15		
46.06	0.01	46.58	1.34	47.10	4.21		
46.07	0.02	46.59	1.38	47.11	4.28		
46.08	0.02	46.60	1.43	47.12	4.34		
46.09	0.03	46.61	1.47	47.13	4.40		
46.10	0.04	46.62	1.52	47.14	4.46		
46.11	0.04	46.63	1.57	47.15	4.52		
46.12	0.05	46.64	1.61	47.16	4.59		
46.13	0.06	46.65	1.66	47.17	4.65		
46.14	0.07	46.66	1.71	47.18	4.71		
46.15	0.08	46.67	1.76	47.19	4.77		
46.16	0.10	46.68	1.81	47.20	4.83		
46.17	0.11	46.69	1.86	47.21	4.89		
46.18	0.12	46.70	1.91	47.22	4.96		
46.19	0.14	46.71	1.96	47.23	5.02		
46.20	0.15	46.72	2.01	47.24	5.08		
46.21	0.17	46.73	2.06	47.25	5.14		
46.22	0.19	46.74	2.11	47.26	5.20		
46.23	0.21	46.75	2.17	47.27	5.26		
46.24	0.23	46.76	2.22	47.28	5.32		
46.25	0.25	46.77	2.27	47.29	5.38		
46.26	0.27	46.78	2.33	47.30	5.44		
46.27	0.29	46.79	2.38	47.31	5.50		
46.28	0.31	46.80	2.44	47.32	5.56		
46.29	0.33	46.81	2.49	47.33	5.62		
46.30	0.36	46.82	2.55	47.34	5.68		
46.31	0.38	46.83	2.60	47.35	5.74		
46.32	0.41	46.84	2.66	47.36	5.80		
46.33	0.44	46.85	2.72	47.37	5.86		
46.34	0.46	46.86	2.77	47.38	5.92		
46.35	0.49	46.87	2.83	47.39	5.98		
46.36	0.52	46.88	2.89	47.40	6.03		
46.37	0.55	46.89	2.95	47.41	6.09		
46.38	0.58	46.90	3.01	47.42	6.15		
46.39	0.61	46.91	3.06	47.43	6.20		
46.40	0.64	46.92	3.12	47.44	6.26		
46.41	0.68	46.93	3.18	47.45	6.32		
46.42	0.71	46.94	3.24	47.46	6.37		
46.43	0.74	46.95	3.30	47.47	6.43		
46.44	0.78	46.96	3.36	47.48	6.48		
46.45	0.81	46.97	3.42	47.49	6.53		
46.46	0.85	46.98	3.48	47.50	6.59		
46.47	0.89	46.99	3.54	47.51	6.64		
46.48	0.92	47.00	3.60	47.52	6.69		
46.49	0.96	47.01	3.66	47.53	6.74		
46.50	1.00	47.02	3.72	47.54	6.79		
46.51	1.04	47.03	3.78	47.55	6.84		

Stage-Area-Storage for Pond 6R: MH-103 to FES-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.00	0	47.04	0
46.02	0	47.06	0
46.04	0	47.08	0
46.06	0	47.10	0
46.08	0	47.12	0
46.10	0	47.14	0
46.12	0	47.16	0
46.14	0	47.18	0
46.16	0	47.20	0
46.18	0	47.22	0
46.20	0	47.24	0
46.22	0	47.26	0
46.24	0	47.28	0
46.26	0	47.30	0
46.28	0	47.32	0
46.30	0	47.34	0
46.32	0	47.36	0
46.34	0	47.38	0
46.36	0	47.40	0
46.38	0	47.42	0
46.40	0	47.44	0
46.42	0	47.46	0
46.44	0	47.48	0
46.46	0	47.50	0
46.48	0	47.52	0
46.50	0	47.54	0
46.52	0	47.56	0
46.54	0	47.58	0
46.56	0		
46.58	0		
46.60	0		
46.62	0		
46.64	0		
46.66	0		
46.68	0		
46.70	0		
46.72	0		
46.74	0		
46.76	0		
46.78	0		
46.80	0		
46.82	0		
46.84	0		
46.86	0		
46.88	0		
46.90	0		
46.92	0		
46.94	0		
46.96	0		
46.98	0		
47.00	0		
47.02	0		

Summary for Pond P-101: SWMB P-101

Inflow Area = 98,017 sf, 42.31% Impervious, Inflow Depth = 4.57" for 100-yr event
 Inflow = 7.56 cfs @ 12.24 hrs, Volume= 37,343 cf
 Outflow = 2.87 cfs @ 12.67 hrs, Volume= 37,343 cf, Atten= 62%, Lag= 26.0 min
 Primary = 0.67 cfs @ 12.67 hrs, Volume= 1,527 cf
 Routed to Pond 4R : MH-101 to MH-102
 Secondary = 2.20 cfs @ 12.67 hrs, Volume= 35,816 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 49.14' @ 12.67 hrs Surf.Area= 8,124 sf Storage= 8,498 cf

Plug-Flow detention time= 26.0 min calculated for 37,281 cf (100% of inflow)
 Center-of-Mass det. time= 25.9 min (879.8 - 853.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.40'	5,666 cf	84.83'W x 95.76'L x 2.33'H Field A 18,955 cf Overall - 4,791 cf Embedded = 14,164 cf x 40.0% Voids
#2A	47.90'	4,791 cf	ADS_StormTech SC-310 +Cap x 325 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 325 Chambers in 25 Rows
		10,457 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.10'	4.0' long x 0.73' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.40'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.10'

Primary OutFlow Max=0.66 cfs @ 12.67 hrs HW=49.13' (Free Discharge)

- ↑1=Low Level Orifice (Orifice Controls 0.58 cfs @ 2.98 fps)
- ↑2=Sharp-Crested Rectangular Weir (Weir Controls 0.08 cfs @ 0.59 fps)

Secondary OutFlow Max=2.19 cfs @ 12.67 hrs HW=49.13' (Free Discharge)

- ↑3=Underdrain (Controls 2.19 cfs)

Pond P-101: SWMB P-101 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

25 Rows x 34.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 84.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

325 Chambers x 14.7 cf = 4,791.1 cf Chamber Storage

18,955.2 cf Field - 4,791.1 cf Chambers = 14,164.0 cf Stone x 40.0% Voids = 5,665.6 cf Stone Storage

Chamber Storage + Stone Storage = 10,456.7 cf = 0.240 af

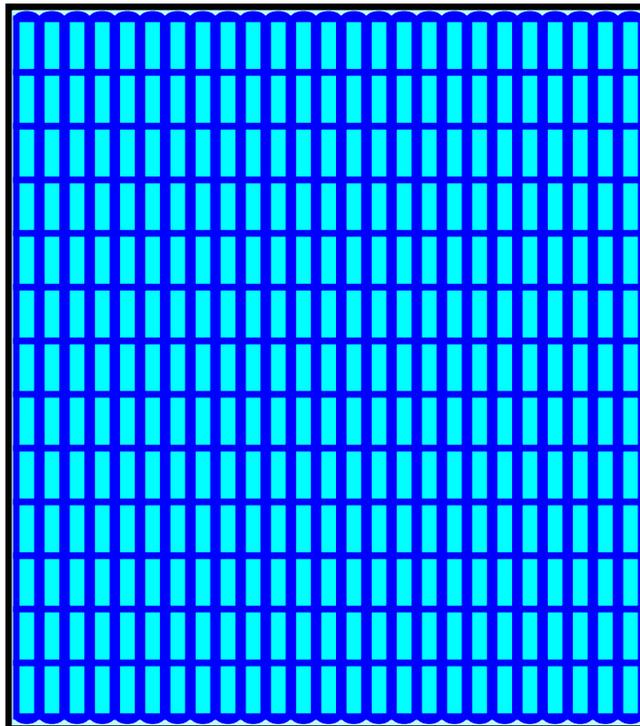
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 84.83' x 2.33'

325 Chambers

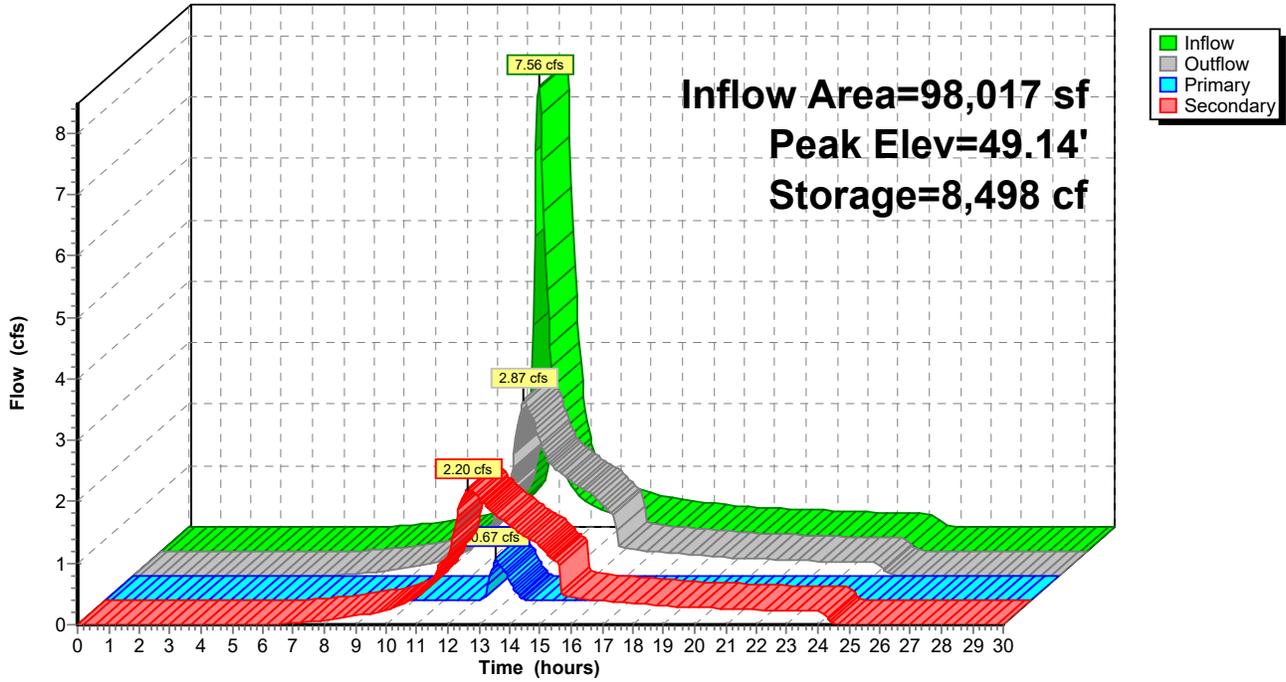
702.0 cy Field

524.6 cy Stone



Pond P-101: SWMB P-101

Hydrograph



Stage-Discharge for Pond P-101: SWMB P-101

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.40	0.00	0.00	0.00
47.45	0.98	0.00	0.98
47.50	1.01	0.00	1.01
47.55	1.05	0.00	1.05
47.60	1.08	0.00	1.08
47.65	1.12	0.00	1.12
47.70	1.16	0.00	1.16
47.75	1.19	0.00	1.19
47.80	1.23	0.00	1.23
47.85	1.27	0.00	1.27
47.90	1.30	0.00	1.30
47.95	1.34	0.00	1.34
48.00	1.37	0.00	1.37
48.05	1.41	0.00	1.41
48.10	1.45	0.00	1.45
48.15	1.48	0.00	1.48
48.20	1.52	0.00	1.52
48.25	1.56	0.00	1.56
48.30	1.59	0.00	1.59
48.35	1.63	0.00	1.63
48.40	1.66	0.00	1.66
48.45	1.70	0.00	1.70
48.50	1.74	0.00	1.74
48.55	1.78	0.01	1.77
48.60	1.84	0.03	1.81
48.65	1.91	0.07	1.84
48.70	1.99	0.11	1.88
48.75	2.08	0.17	1.92
48.80	2.18	0.23	1.95
48.85	2.28	0.30	1.99
48.90	2.39	0.36	2.03
48.95	2.49	0.43	2.06
49.00	2.57	0.47	2.10
49.05	2.65	0.52	2.13
49.10	2.73	0.56	2.17
49.15	2.95	0.74	2.21
49.20	3.29	1.05	2.24
49.25	3.71	1.44	2.28
49.30	4.20	1.89	2.31
49.35	4.74	2.39	2.35
49.40	5.34	2.95	2.39
49.45	5.98	3.56	2.42
49.50	6.66	4.21	2.46
49.55	7.39	4.90	2.50
49.60	8.16	5.63	2.53
49.65	8.97	6.40	2.57
49.70	9.82	7.21	2.60
49.75	10.70	8.06	2.64
49.80	11.61	8.94	2.68

Stage-Area-Storage for Pond P-101: SWMB P-101

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.40	8,124	0
47.45	8,124	162
47.50	8,124	325
47.55	8,124	487
47.60	8,124	650
47.65	8,124	812
47.70	8,124	975
47.75	8,124	1,137
47.80	8,124	1,300
47.85	8,124	1,462
47.90	8,124	1,625
47.95	8,124	1,954
48.00	8,124	2,282
48.05	8,124	2,609
48.10	8,124	2,933
48.15	8,124	3,254
48.20	8,124	3,572
48.25	8,124	3,887
48.30	8,124	4,199
48.35	8,124	4,506
48.40	8,124	4,810
48.45	8,124	5,109
48.50	8,124	5,403
48.55	8,124	5,694
48.60	8,124	5,979
48.65	8,124	6,258
48.70	8,124	6,531
48.75	8,124	6,797
48.80	8,124	7,055
48.85	8,124	7,306
48.90	8,124	7,546
48.95	8,124	7,774
49.00	8,124	7,987
49.05	8,124	8,185
49.10	8,124	8,372
49.15	8,124	8,550
49.20	8,124	8,722
49.25	8,124	8,886
49.30	8,124	9,049
49.35	8,124	9,211
49.40	8,124	9,374
49.45	8,124	9,536
49.50	8,124	9,699
49.55	8,124	9,861
49.60	8,124	10,023
49.65	8,124	10,186
49.70	8,124	10,348
49.75	8,124	10,457
49.80	8,124	10,457

Summary for Pond P-102: SWMB P-102

Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 7.02" for 100-yr event
 Inflow = 15.63 cfs @ 12.05 hrs, Volume= 51,416 cf
 Outflow = 3.54 cfs @ 12.37 hrs, Volume= 51,412 cf, Atten= 77%, Lag= 18.9 min
 Primary = 0.34 cfs @ 12.37 hrs, Volume= 840 cf
 Routed to Pond 3R : OCS-102 to MH-101
 Secondary = 3.21 cfs @ 12.37 hrs, Volume= 50,572 cf
 Routed to Pond 3R : OCS-102 to MH-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 49.17' @ 12.37 hrs Surf.Area= 10,996 sf Storage= 11,201 cf

Plug-Flow detention time= 22.0 min calculated for 51,326 cf (100% of inflow)
 Center-of-Mass det. time= 21.9 min (793.2 - 771.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.50'	7,657 cf	114.83'W x 95.76'L x 2.33'H Field A 25,658 cf Overall - 6,516 cf Embedded = 19,142 cf x 40.0% Voids
#2A	48.00'	6,516 cf	ADS_StormTech SC-310 +Cap x 442 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 442 Chambers in 34 Rows
		14,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	4.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.15'	4.0' long x 3.90' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.50'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.40'

Primary OutFlow Max=0.33 cfs @ 12.37 hrs HW=49.17' (Free Discharge)
 ↑1=Low Level Orifice (Orifice Controls 0.30 cfs @ 3.41 fps)
 ↓2=Sharp-Crested Rectangular Weir (Weir Controls 0.03 cfs @ 0.44 fps)

Secondary OutFlow Max=3.20 cfs @ 12.37 hrs HW=49.17' (Free Discharge)
 ↑3=Underdrain (Controls 3.20 cfs)

Pond P-102: SWMB P-102 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

34 Rows x 34.0" Wide + 6.0" Spacing x 33 + 12.0" Side Stone x 2 = 114.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

442 Chambers x 14.7 cf = 6,515.9 cf Chamber Storage

25,658.4 cf Field - 6,515.9 cf Chambers = 19,142.4 cf Stone x 40.0% Voids = 7,657.0 cf Stone Storage

Chamber Storage + Stone Storage = 14,172.9 cf = 0.325 af

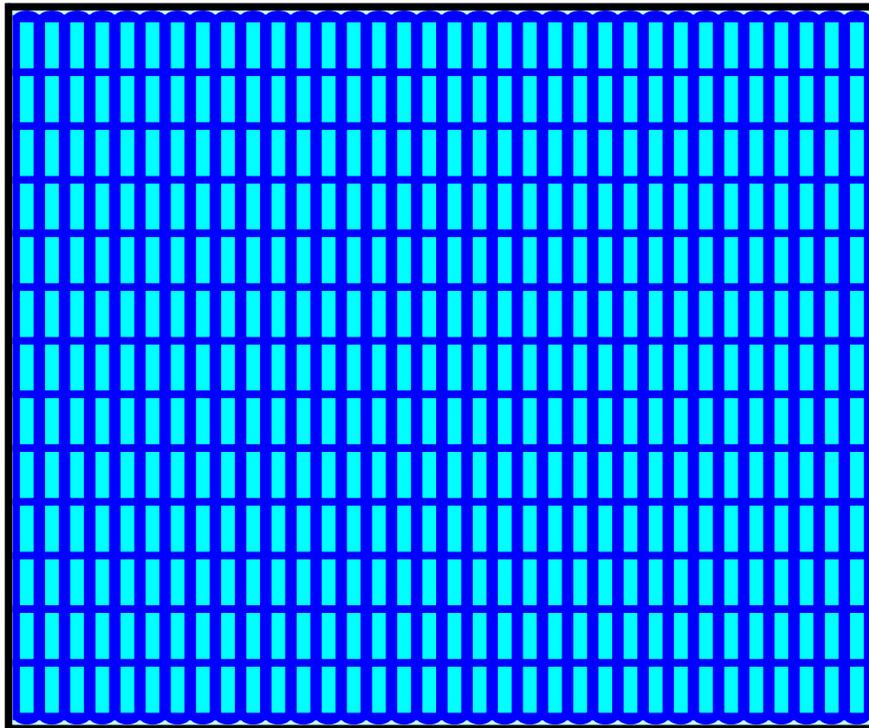
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 114.83' x 2.33'

442 Chambers

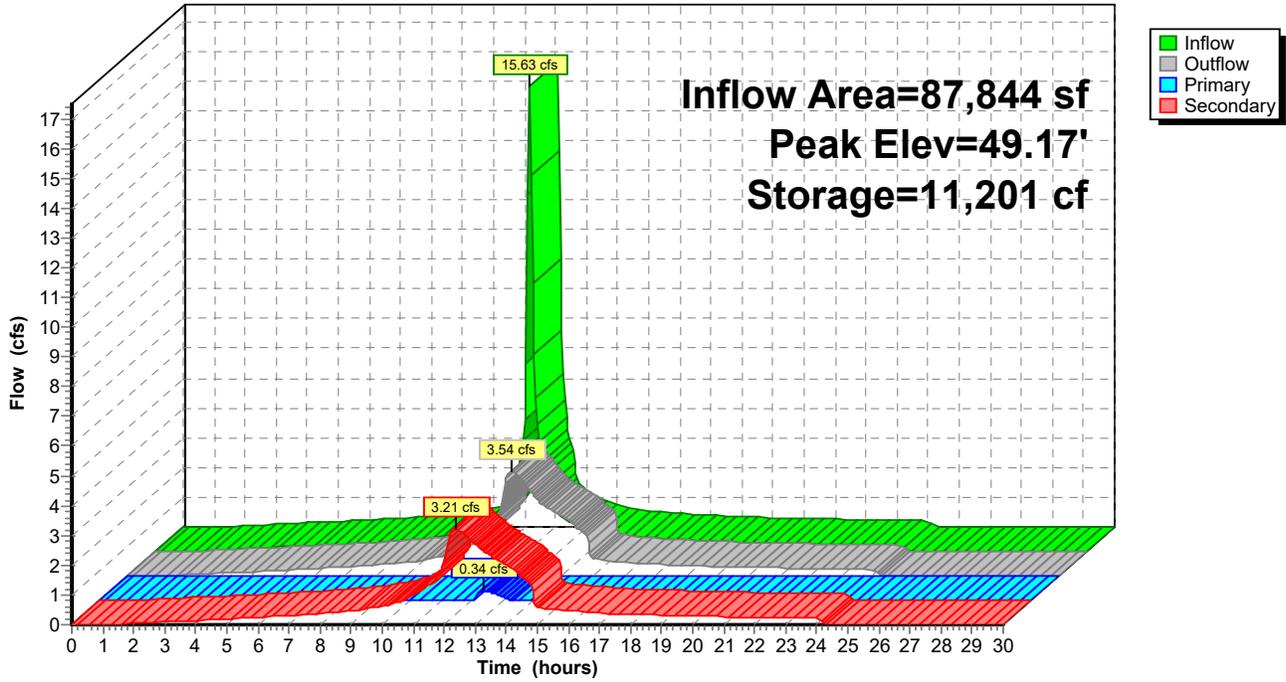
950.3 cy Field

709.0 cy Stone



Pond P-102: SWMB P-102

Hydrograph



Stage-Discharge for Pond P-102: SWMB P-102

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.50	0.00	0.00	0.00	52.70	108.50	101.21	7.29
47.60	1.39	0.00	1.39	52.80	113.09	105.68	7.41
47.70	1.50	0.00	1.50	52.90	117.74	110.22	7.52
47.80	1.62	0.00	1.62	53.00	122.46	114.82	7.64
47.90	1.74	0.00	1.74				
48.00	1.85	0.00	1.85				
48.10	1.97	0.00	1.97				
48.20	2.08	0.00	2.08				
48.30	2.20	0.00	2.20				
48.40	2.31	0.00	2.31				
48.50	2.43	0.00	2.43				
48.60	2.57	0.02	2.55				
48.70	2.74	0.08	2.66				
48.80	2.93	0.15	2.78				
48.90	3.10	0.20	2.89				
49.00	3.25	0.24	3.01				
49.10	3.40	0.28	3.12				
49.20	3.69	0.45	3.24				
49.30	4.46	1.10	3.36				
49.40	5.49	2.02	3.47				
49.50	6.73	3.15	3.59				
49.60	8.16	4.46	3.70				
49.70	9.75	5.93	3.82				
49.80	11.49	7.56	3.93				
49.90	13.38	9.33	4.05				
50.00	15.39	11.23	4.17				
50.10	17.54	13.26	4.28				
50.20	19.81	15.41	4.40				
50.30	22.20	17.68	4.51				
50.40	24.70	20.07	4.63				
50.50	27.32	22.57	4.74				
50.60	30.04	25.18	4.86				
50.70	32.87	27.90	4.98				
50.80	35.81	30.72	5.09				
50.90	38.84	33.64	5.21				
51.00	41.98	36.65	5.32				
51.10	45.21	39.77	5.44				
51.20	48.53	42.98	5.55				
51.30	51.95	46.28	5.67				
51.40	55.46	49.68	5.79				
51.50	59.06	53.16	5.90				
51.60	62.74	56.73	6.02				
51.70	66.51	60.38	6.13				
51.80	70.37	64.12	6.25				
51.90	74.30	67.94	6.36				
52.00	78.31	71.83	6.48				
52.10	82.41	75.81	6.60				
52.20	86.57	79.86	6.71				
52.30	90.82	83.99	6.83				
52.40	95.13	88.19	6.94				
52.50	99.52	92.46	7.06				
52.60	103.98	96.80	7.17				

Stage-Area-Storage for Pond P-102: SWMB P-102

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.50	10,996	0	52.70	10,996	14,173
47.60	10,996	440	52.80	10,996	14,173
47.70	10,996	880	52.90	10,996	14,173
47.80	10,996	1,320	53.00	10,996	14,173
47.90	10,996	1,759			
48.00	10,996	2,199			
48.10	10,996	3,092			
48.20	10,996	3,974			
48.30	10,996	4,842			
48.40	10,996	5,692			
48.50	10,996	6,520			
48.60	10,996	7,326			
48.70	10,996	8,106			
48.80	10,996	8,855			
48.90	10,996	9,566			
49.00	10,996	10,232			
49.10	10,996	10,829			
49.20	10,996	11,350			
49.30	10,996	11,824			
49.40	10,996	12,267			
49.50	10,996	12,707			
49.60	10,996	13,147			
49.70	10,996	13,586			
49.80	10,996	14,026			
49.90	10,996	14,173			
50.00	10,996	14,173			
50.10	10,996	14,173			
50.20	10,996	14,173			
50.30	10,996	14,173			
50.40	10,996	14,173			
50.50	10,996	14,173			
50.60	10,996	14,173			
50.70	10,996	14,173			
50.80	10,996	14,173			
50.90	10,996	14,173			
51.00	10,996	14,173			
51.10	10,996	14,173			
51.20	10,996	14,173			
51.30	10,996	14,173			
51.40	10,996	14,173			
51.50	10,996	14,173			
51.60	10,996	14,173			
51.70	10,996	14,173			
51.80	10,996	14,173			
51.90	10,996	14,173			
52.00	10,996	14,173			
52.10	10,996	14,173			
52.20	10,996	14,173			
52.30	10,996	14,173			
52.40	10,996	14,173			
52.50	10,996	14,173			
52.60	10,996	14,173			

Summary for Pond P-103: SWMB P-103

Inflow Area = 24,111 sf, 91.05% Impervious, Inflow Depth = 7.26" for 100-yr event
 Inflow = 4.74 cfs @ 12.02 hrs, Volume= 14,591 cf
 Outflow = 3.17 cfs @ 12.10 hrs, Volume= 14,567 cf, Atten= 33%, Lag= 5.0 min
 Primary = 2.81 cfs @ 12.10 hrs, Volume= 4,218 cf
 Routed to Reach 2R : 18" HDPE
 Secondary = 0.36 cfs @ 12.11 hrs, Volume= 10,349 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 51.60' @ 12.11 hrs Surf.Area= 2,096 sf Storage= 2,214 cf

Plug-Flow detention time= 14.0 min calculated for 14,567 cf (100% of inflow)
 Center-of-Mass det. time= 12.8 min (772.1 - 759.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.80'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	50.30'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	50.30'	8.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	51.40'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	49.80'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.00'

Primary OutFlow Max=2.72 cfs @ 12.10 hrs HW=51.59' (Free Discharge)

- ↑1=Low Level Orifice (Orifice Controls 1.64 cfs @ 4.70 fps)
- ↑2=Sharp-Crested Rectangular Weir (Weir Controls 1.08 cfs @ 1.45 fps)

Secondary OutFlow Max=0.36 cfs @ 12.11 hrs HW=51.59' (Free Discharge)

- ↑3=Underdrain (Controls 0.36 cfs)

Pond P-103: SWMB P-103 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

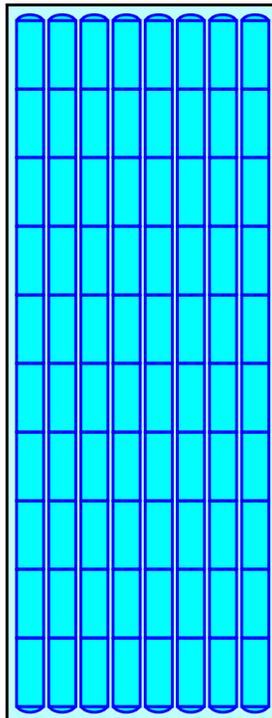
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

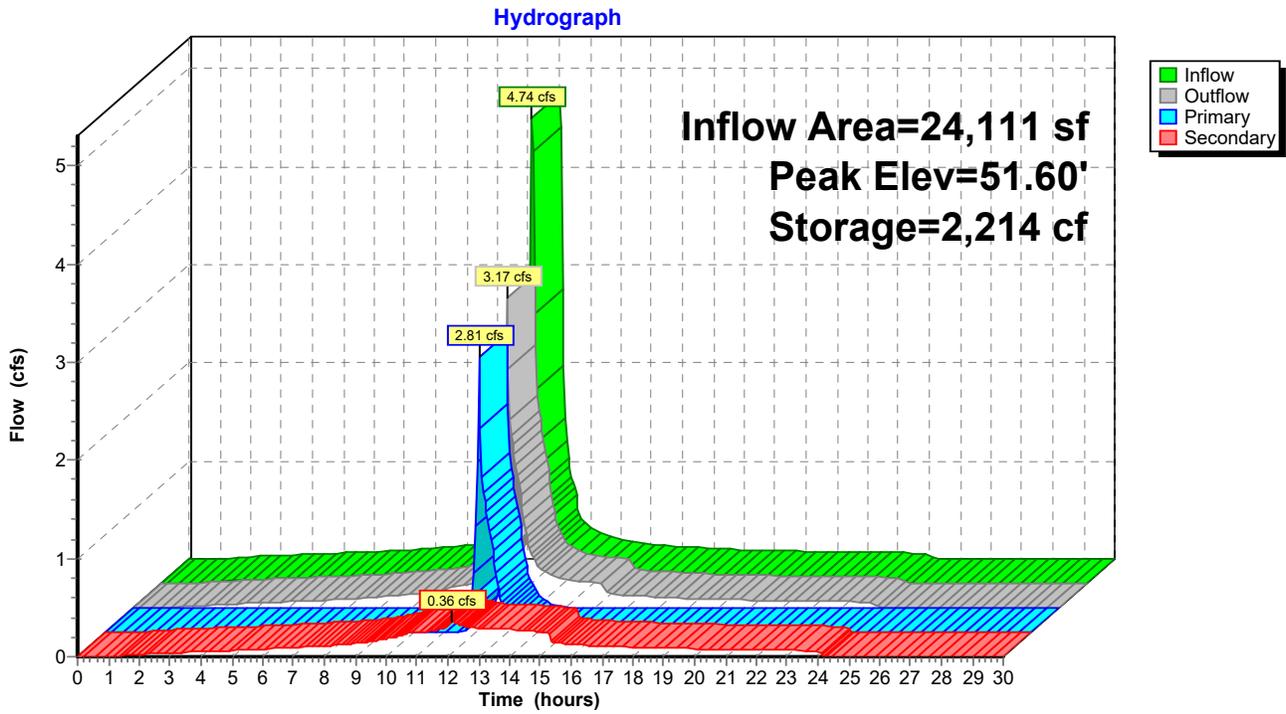
80 Chambers

181.1 cy Field

137.4 cy Stone



Pond P-103: SWMB P-103



Stage-Discharge for Pond P-103: SWMB P-103

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
49.80	0.00	0.00	0.00	52.40	16.45	16.04	0.41
49.85	0.25	0.00	0.25	52.45	17.57	17.16	0.41
49.90	0.25	0.00	0.25	52.50	18.72	18.30	0.41
49.95	0.25	0.00	0.25	52.55	19.89	19.47	0.42
50.00	0.26	0.00	0.26	52.60	21.10	20.68	0.42
50.05	0.26	0.00	0.26	52.65	22.33	21.91	0.42
50.10	0.26	0.00	0.26	52.70	23.59	23.16	0.43
50.15	0.26	0.00	0.26	52.75	24.88	24.45	0.43
50.20	0.27	0.00	0.27	52.80	26.20	25.76	0.43
50.25	0.27	0.00	0.27	52.85	27.54	27.10	0.44
50.30	0.27	0.00	0.27	52.90	28.91	28.47	0.44
50.35	0.29	0.01	0.28	52.95	30.30	29.86	0.44
50.40	0.32	0.04	0.28	53.00	31.72	31.27	0.45
50.45	0.36	0.08	0.28	53.05	33.17	32.72	0.45
50.50	0.42	0.13	0.29	53.10	34.64	34.18	0.45
50.55	0.49	0.20	0.29	53.15	36.13	35.67	0.46
50.60	0.58	0.28	0.29	53.20	37.65	37.19	0.46
50.65	0.67	0.37	0.30	53.25	39.19	38.73	0.46
50.70	0.77	0.47	0.30	53.30	40.76	40.30	0.47
50.75	0.88	0.57	0.30	53.35	42.35	41.89	0.47
50.80	0.98	0.68	0.31	53.40	43.97	43.50	0.47
50.85	1.09	0.78	0.31	53.45	45.61	45.13	0.48
50.90	1.19	0.87	0.31	53.50	47.27	46.79	0.48
50.95	1.27	0.95	0.32	53.55	48.95	48.47	0.48
51.00	1.34	1.02	0.32	53.60	50.66	50.18	0.49
51.05	1.41	1.08	0.32	53.65	52.39	51.90	0.49
51.10	1.47	1.15	0.33	53.70	54.14	53.65	0.49
51.15	1.54	1.21	0.33	53.75	55.91	55.42	0.49
51.20	1.60	1.27	0.33	53.80	57.71	57.21	0.50
51.25	1.65	1.32	0.34	53.85	59.52	59.02	0.50
51.30	1.71	1.37	0.34	53.90	61.36	60.86	0.50
51.35	1.76	1.42	0.34	53.95	63.22	62.71	0.51
51.40	1.82	1.47	0.34	54.00	65.10	64.59	0.51
51.45	2.01	1.67	0.35				
51.50	2.33	1.98	0.35				
51.55	2.73	2.38	0.35				
51.60	3.19	2.84	0.36				
51.65	3.71	3.35	0.36				
51.70	4.29	3.92	0.36				
51.75	4.91	4.54	0.37				
51.80	5.57	5.20	0.37				
51.85	6.28	5.91	0.37				
51.90	7.03	6.65	0.38				
51.95	7.81	7.43	0.38				
52.00	8.64	8.25	0.38				
52.05	9.50	9.11	0.39				
52.10	10.39	10.00	0.39				
52.15	11.32	10.93	0.39				
52.20	12.28	11.89	0.40				
52.25	13.28	12.88	0.40				
52.30	14.30	13.90	0.40				
52.35	15.36	14.96	0.41				

Stage-Area-Storage for Pond P-103: SWMB P-103

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.80	2,096	0	52.40	2,096	2,664
49.85	2,096	42	52.45	2,096	2,664
49.90	2,096	84	52.50	2,096	2,664
49.95	2,096	126	52.55	2,096	2,664
50.00	2,096	168	52.60	2,096	2,664
50.05	2,096	210	52.65	2,096	2,664
50.10	2,096	251	52.70	2,096	2,664
50.15	2,096	293	52.75	2,096	2,664
50.20	2,096	335	52.80	2,096	2,664
50.25	2,096	377	52.85	2,096	2,664
50.30	2,096	419	52.90	2,096	2,664
50.35	2,096	502	52.95	2,096	2,664
50.40	2,096	585	53.00	2,096	2,664
50.45	2,096	667	53.05	2,096	2,664
50.50	2,096	749	53.10	2,096	2,664
50.55	2,096	830	53.15	2,096	2,664
50.60	2,096	910	53.20	2,096	2,664
50.65	2,096	990	53.25	2,096	2,664
50.70	2,096	1,068	53.30	2,096	2,664
50.75	2,096	1,146	53.35	2,096	2,664
50.80	2,096	1,222	53.40	2,096	2,664
50.85	2,096	1,298	53.45	2,096	2,664
50.90	2,096	1,372	53.50	2,096	2,664
50.95	2,096	1,446	53.55	2,096	2,664
51.00	2,096	1,518	53.60	2,096	2,664
51.05	2,096	1,588	53.65	2,096	2,664
51.10	2,096	1,657	53.70	2,096	2,664
51.15	2,096	1,725	53.75	2,096	2,664
51.20	2,096	1,790	53.80	2,096	2,664
51.25	2,096	1,854	53.85	2,096	2,664
51.30	2,096	1,915	53.90	2,096	2,664
51.35	2,096	1,973	53.95	2,096	2,664
51.40	2,096	2,027	54.00	2,096	2,664
51.45	2,096	2,078			
51.50	2,096	2,126			
51.55	2,096	2,172			
51.60	2,096	2,216			
51.65	2,096	2,258			
51.70	2,096	2,300			
51.75	2,096	2,342			
51.80	2,096	2,384			
51.85	2,096	2,426			
51.90	2,096	2,468			
51.95	2,096	2,510			
52.00	2,096	2,552			
52.05	2,096	2,594			
52.10	2,096	2,636			
52.15	2,096	2,664			
52.20	2,096	2,664			
52.25	2,096	2,664			
52.30	2,096	2,664			
52.35	2,096	2,664			

Summary for Pond P-104: P-104

Inflow Area = 17,421 sf, 91.84% Impervious, Inflow Depth = 7.26" for 100-yr event
 Inflow = 3.42 cfs @ 12.02 hrs, Volume= 10,542 cf
 Outflow = 1.29 cfs @ 12.17 hrs, Volume= 10,542 cf, Atten= 62%, Lag= 8.8 min
 Primary = 0.76 cfs @ 12.17 hrs, Volume= 1,715 cf
 Routed to Pond 5R : MH-102 to MH-103
 Secondary = 0.53 cfs @ 12.17 hrs, Volume= 8,827 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 50.07' @ 12.17 hrs Surf.Area= 2,096 sf Storage= 1,788 cf

Plug-Flow detention time= 11.5 min calculated for 10,542 cf (100% of inflow)
 Center-of-Mass det. time= 11.4 min (770.7 - 759.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	48.67'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	49.17'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	49.17'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	50.25'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	48.67'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 47.50'

Primary OutFlow Max=0.76 cfs @ 12.17 hrs HW=50.06' (Free Discharge)

- ↑1=Low Level Orifice (Orifice Controls 0.76 cfs @ 3.85 fps)
- ↑2=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

Secondary OutFlow Max=0.53 cfs @ 12.17 hrs HW=50.06' (Free Discharge)

- ↑3=Underdrain (Controls 0.53 cfs)

Pond P-104: P-104 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

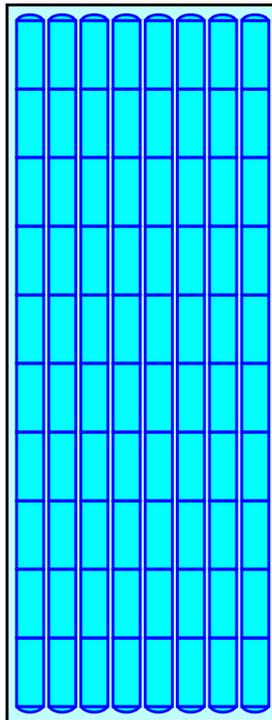
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

80 Chambers

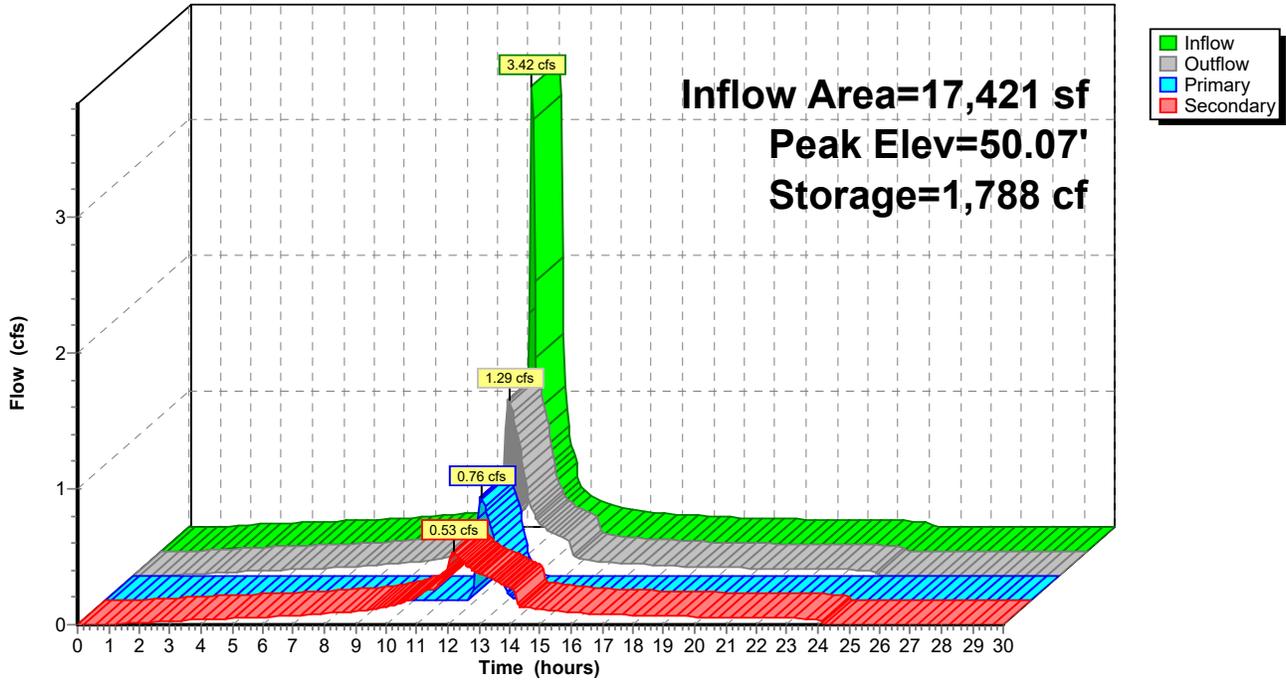
181.1 cy Field

137.4 cy Stone



Pond P-104: P-104

Hydrograph



Stage-Discharge for Pond P-104: P-104

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
48.67	0.00	0.00	0.00	51.27	16.31	15.52	0.78
48.72	0.25	0.00	0.25	51.32	17.43	16.64	0.79
48.77	0.26	0.00	0.26	51.37	18.58	17.78	0.80
48.82	0.27	0.00	0.27	51.42	19.76	18.95	0.81
48.87	0.28	0.00	0.28	51.47	20.97	20.15	0.82
48.92	0.29	0.00	0.29	51.52	22.21	21.38	0.83
48.97	0.30	0.00	0.30	51.57	23.48	22.63	0.84
49.02	0.32	0.00	0.32	51.62	24.77	23.92	0.85
49.07	0.33	0.00	0.33	51.67	26.09	25.23	0.86
49.12	0.34	0.00	0.34	51.72	27.44	26.56	0.87
49.17	0.35	0.00	0.35	51.77	28.81	27.93	0.89
49.22	0.36	0.01	0.36	51.82	30.21	29.32	0.90
49.27	0.40	0.03	0.37	51.87	31.64	30.73	0.91
49.32	0.44	0.07	0.38	51.92	33.09	32.17	0.92
49.37	0.50	0.11	0.39	51.97	34.56	33.64	0.93
49.42	0.57	0.17	0.40	52.02	36.06	35.13	0.94
49.47	0.64	0.23	0.41	52.07	37.59	36.64	0.95
49.52	0.71	0.30	0.42	52.12	39.14	38.18	0.96
49.57	0.79	0.36	0.43	52.17	40.71	39.74	0.97
49.62	0.86	0.43	0.44	52.22	42.31	41.33	0.98
49.67	0.92	0.47	0.45	52.27	43.93	42.94	0.99
49.72	0.98	0.52	0.46	52.32	45.57	44.57	1.00
49.77	1.03	0.56	0.47	52.37	47.24	46.23	1.01
49.82	1.08	0.60	0.48	52.42	48.93	47.91	1.02
49.87	1.13	0.63	0.49	52.47	50.64	49.61	1.03
49.92	1.17	0.67	0.50	52.52	52.37	51.33	1.04
49.97	1.21	0.70	0.51	52.57	54.13	53.08	1.05
50.02	1.25	0.73	0.52	52.62	55.91	54.85	1.06
50.07	1.29	0.76	0.53	52.67	57.71	56.64	1.07
50.12	1.33	0.79	0.54	52.72	59.53	58.45	1.08
50.17	1.37	0.82	0.55	52.77	61.37	60.28	1.09
50.22	1.41	0.85	0.56	52.82	63.23	62.13	1.10
50.27	1.48	0.91	0.57				
50.32	1.72	1.14	0.58				
50.37	2.06	1.47	0.59				
50.42	2.48	1.87	0.61				
50.47	2.95	2.34	0.62				
50.52	3.48	2.86	0.63				
50.57	4.06	3.43	0.64				
50.62	4.69	4.04	0.65				
50.67	5.36	4.71	0.66				
50.72	6.08	5.41	0.67				
50.77	6.83	6.15	0.68				
50.82	7.62	6.93	0.69				
50.87	8.45	7.75	0.70				
50.92	9.32	8.61	0.71				
50.97	10.22	9.50	0.72				
51.02	11.15	10.42	0.73				
51.07	12.12	11.38	0.74				
51.12	13.12	12.37	0.75				
51.17	14.15	13.39	0.76				
51.22	15.21	14.44	0.77				

Stage-Area-Storage for Pond P-104: P-104

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
48.67	2,096	0	51.27	2,096	2,664
48.72	2,096	42	51.32	2,096	2,664
48.77	2,096	84	51.37	2,096	2,664
48.82	2,096	126	51.42	2,096	2,664
48.87	2,096	168	51.47	2,096	2,664
48.92	2,096	210	51.52	2,096	2,664
48.97	2,096	251	51.57	2,096	2,664
49.02	2,096	293	51.62	2,096	2,664
49.07	2,096	335	51.67	2,096	2,664
49.12	2,096	377	51.72	2,096	2,664
49.17	2,096	419	51.77	2,096	2,664
49.22	2,096	502	51.82	2,096	2,664
49.27	2,096	585	51.87	2,096	2,664
49.32	2,096	667	51.92	2,096	2,664
49.37	2,096	749	51.97	2,096	2,664
49.42	2,096	830	52.02	2,096	2,664
49.47	2,096	910	52.07	2,096	2,664
49.52	2,096	990	52.12	2,096	2,664
49.57	2,096	1,068	52.17	2,096	2,664
49.62	2,096	1,146	52.22	2,096	2,664
49.67	2,096	1,222	52.27	2,096	2,664
49.72	2,096	1,298	52.32	2,096	2,664
49.77	2,096	1,372	52.37	2,096	2,664
49.82	2,096	1,446	52.42	2,096	2,664
49.87	2,096	1,518	52.47	2,096	2,664
49.92	2,096	1,588	52.52	2,096	2,664
49.97	2,096	1,657	52.57	2,096	2,664
50.02	2,096	1,725	52.62	2,096	2,664
50.07	2,096	1,790	52.67	2,096	2,664
50.12	2,096	1,854	52.72	2,096	2,664
50.17	2,096	1,915	52.77	2,096	2,664
50.22	2,096	1,973	52.82	2,096	2,664
50.27	2,096	2,027			
50.32	2,096	2,078			
50.37	2,096	2,126			
50.42	2,096	2,172			
50.47	2,096	2,216			
50.52	2,096	2,258			
50.57	2,096	2,300			
50.62	2,096	2,342			
50.67	2,096	2,384			
50.72	2,096	2,426			
50.77	2,096	2,468			
50.82	2,096	2,510			
50.87	2,096	2,552			
50.92	2,096	2,594			
50.97	2,096	2,636			
51.02	2,096	2,664			
51.07	2,096	2,664			
51.12	2,096	2,664			
51.17	2,096	2,664			
51.22	2,096	2,664			

Summary for Pond P-105: SWMB P-105

Inflow Area = 184,140 sf, 100.00% Impervious, Inflow Depth = 7.62" for 100-yr event
 Inflow = 36.69 cfs @ 12.02 hrs, Volume= 116,933 cf
 Outflow = 9.23 cfs @ 12.26 hrs, Volume= 116,933 cf, Atten= 75%, Lag= 14.2 min
 Discarded = 3.44 cfs @ 12.26 hrs, Volume= 105,569 cf
 Primary = 5.78 cfs @ 12.26 hrs, Volume= 11,364 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 51.53' @ 12.26 hrs Surf.Area= 16,134 sf Storage= 28,196 cf

Plug-Flow detention time= 44.4 min calculated for 116,739 cf (100% of inflow)
 Center-of-Mass det. time= 44.4 min (785.1 - 740.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.00'	14,226 cf	167.75'W x 96.18'L x 3.50'H Field A 56,468 cf Overall - 20,903 cf Embedded = 35,565 cf x 40.0% Voids
#2A	49.50'	20,903 cf	ADS_StormTech SC-740 +Cap x 455 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 455 Chambers in 35 Rows
		35,129 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	4.0' long x 2.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 2.5' Crest Height
#2	Primary	50.70'	6.0" Vert. 6" Low Level Orifice C= 0.600 Limited to weir flow at low heads
#3	Discarded	49.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 46.00'

Discarded OutFlow Max=3.44 cfs @ 12.26 hrs HW=51.53' (Free Discharge)
 ↳ **3=Exfiltration** (Controls 3.44 cfs)

Primary OutFlow Max=5.75 cfs @ 12.26 hrs HW=51.53' (Free Discharge)
 ↳ **1=Sharp-Crested Rectangular Weir** (Weir Controls 5.03 cfs @ 2.44 fps)
 ↳ **2=6" Low Level Orifice** (Orifice Controls 0.72 cfs @ 3.66 fps)

Pond P-105: SWMB P-105 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 94.18' Row Length +12.0" End Stone x 2 = 96.18' Base Length

35 Rows x 51.0" Wide + 6.0" Spacing x 34 + 12.0" Side Stone x 2 = 167.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

455 Chambers x 45.9 cf = 20,902.7 cf Chamber Storage

56,467.7 cf Field - 20,902.7 cf Chambers = 35,565.0 cf Stone x 40.0% Voids = 14,226.0 cf Stone Storage

Chamber Storage + Stone Storage = 35,128.7 cf = 0.806 af

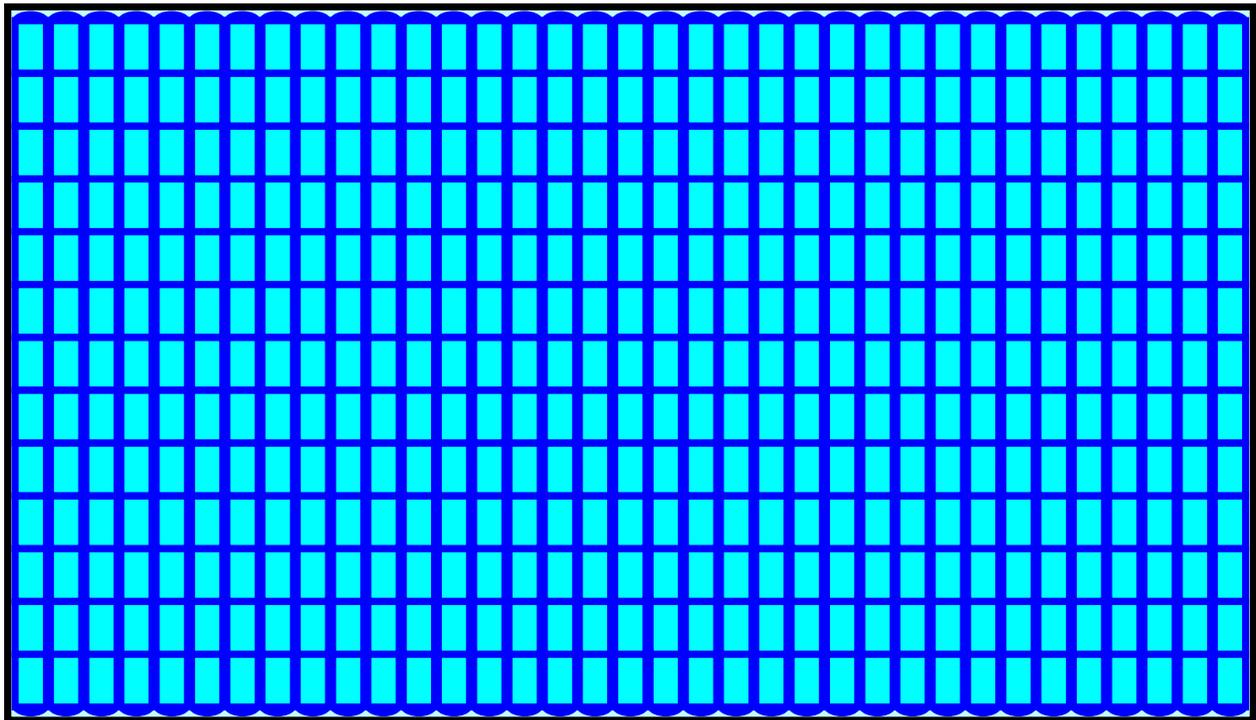
Overall Storage Efficiency = 62.2%

Overall System Size = 96.18' x 167.75' x 3.50'

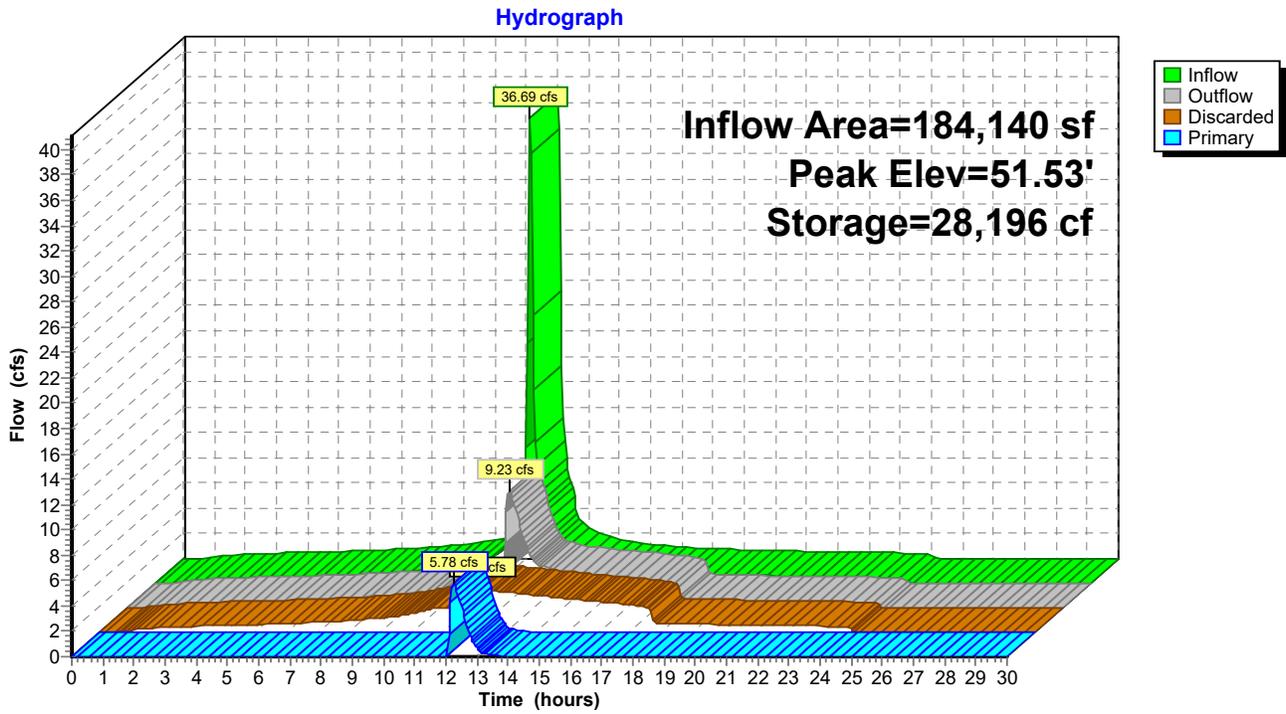
455 Chambers

2,091.4 cy Field

1,317.2 cy Stone



Pond P-105: SWMB P-105



Stage-Discharge for Pond P-105: SWMB P-105

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
49.00	0.00	0.00	0.00	51.60	10.32	3.49	6.83
49.05	1.90	1.90	0.00	51.65	11.15	3.52	7.63
49.10	1.93	1.93	0.00	51.70	12.01	3.55	8.46
49.15	1.96	1.96	0.00	51.75	12.90	3.58	9.32
49.20	1.99	1.99	0.00	51.80	13.82	3.61	10.21
49.25	2.02	2.02	0.00	51.85	14.76	3.64	11.12
49.30	2.05	2.05	0.00	51.90	15.73	3.67	12.06
49.35	2.09	2.09	0.00	51.95	16.72	3.70	13.02
49.40	2.12	2.12	0.00	52.00	17.74	3.73	14.00
49.45	2.15	2.15	0.00	52.05	18.78	3.77	15.01
49.50	2.18	2.18	0.00	52.10	19.84	3.80	16.04
49.55	2.21	2.21	0.00	52.15	20.92	3.83	17.09
49.60	2.24	2.24	0.00	52.20	22.03	3.86	18.17
49.65	2.27	2.27	0.00	52.25	23.15	3.89	19.26
49.70	2.30	2.30	0.00	52.30	24.30	3.92	20.38
49.75	2.33	2.33	0.00	52.35	25.47	3.95	21.51
49.80	2.37	2.37	0.00	52.40	26.65	3.98	22.67
49.85	2.40	2.40	0.00	52.45	27.86	4.01	23.84
49.90	2.43	2.43	0.00	52.50	29.08	4.05	25.04
49.95	2.46	2.46	0.00	52.55	30.32	4.08	26.25
50.00	2.49	2.49	0.00	52.60	31.58	4.11	27.48
50.05	2.52	2.52	0.00	52.65	32.86	4.14	28.72
50.10	2.55	2.55	0.00	52.70	34.16	4.17	29.99
50.15	2.58	2.58	0.00	52.75	35.47	4.20	31.27
50.20	2.61	2.61	0.00	52.80	36.79	4.23	32.56
50.25	2.65	2.65	0.00	52.85	38.14	4.26	33.88
50.30	2.68	2.68	0.00	52.90	39.50	4.29	35.20
50.35	2.71	2.71	0.00	52.95	40.87	4.33	36.55
50.40	2.74	2.74	0.00	53.00	42.27	4.36	37.91
50.45	2.77	2.77	0.00				
50.50	2.80	2.80	0.00				
50.55	2.83	2.83	0.00				
50.60	2.86	2.86	0.00				
50.65	2.89	2.89	0.00				
50.70	2.93	2.93	0.00				
50.75	2.96	2.96	0.01				
50.80	3.02	2.99	0.03				
50.85	3.08	3.02	0.07				
50.90	3.16	3.05	0.11				
50.95	3.25	3.08	0.17				
51.00	3.34	3.11	0.23				
51.05	3.59	3.14	0.44				
51.10	3.95	3.17	0.78				
51.15	4.39	3.21	1.18				
51.20	4.88	3.24	1.64				
51.25	5.42	3.27	2.15				
51.30	6.01	3.30	2.71				
51.35	6.63	3.33	3.30				
51.40	7.30	3.36	3.94				
51.45	8.01	3.39	4.61				
51.50	8.74	3.42	5.32				
51.55	9.51	3.45	6.06				

Stage-Area-Storage for Pond P-105: SWMB P-105

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.00	16,134	0	51.60	16,134	28,842
49.05	16,134	323	51.65	16,134	29,294
49.10	16,134	645	51.70	16,134	29,728
49.15	16,134	968	51.75	16,134	30,136
49.20	16,134	1,291	51.80	16,134	30,521
49.25	16,134	1,613	51.85	16,134	30,884
49.30	16,134	1,936	51.90	16,134	31,234
49.35	16,134	2,259	51.95	16,134	31,573
49.40	16,134	2,581	52.00	16,134	31,902
49.45	16,134	2,904	52.05	16,134	32,225
49.50	16,134	3,227	52.10	16,134	32,547
49.55	16,134	3,911	52.15	16,134	32,870
49.60	16,134	4,594	52.20	16,134	33,193
49.65	16,134	5,277	52.25	16,134	33,515
49.70	16,134	5,958	52.30	16,134	33,838
49.75	16,134	6,637	52.35	16,134	34,161
49.80	16,134	7,313	52.40	16,134	34,483
49.85	16,134	7,987	52.45	16,134	34,806
49.90	16,134	8,659	52.50	16,134	35,129
49.95	16,134	9,328	52.55	16,134	35,129
50.00	16,134	9,994	52.60	16,134	35,129
50.05	16,134	10,658	52.65	16,134	35,129
50.10	16,134	11,318	52.70	16,134	35,129
50.15	16,134	11,975	52.75	16,134	35,129
50.20	16,134	12,629	52.80	16,134	35,129
50.25	16,134	13,279	52.85	16,134	35,129
50.30	16,134	13,926	52.90	16,134	35,129
50.35	16,134	14,570	52.95	16,134	35,129
50.40	16,134	15,209	53.00	16,134	35,129
50.45	16,134	15,845			
50.50	16,134	16,477			
50.55	16,134	17,105			
50.60	16,134	17,728			
50.65	16,134	18,346			
50.70	16,134	18,959			
50.75	16,134	19,567			
50.80	16,134	20,170			
50.85	16,134	20,767			
50.90	16,134	21,359			
50.95	16,134	21,945			
51.00	16,134	22,525			
51.05	16,134	23,098			
51.10	16,134	23,666			
51.15	16,134	24,225			
51.20	16,134	24,776			
51.25	16,134	25,318			
51.30	16,134	25,851			
51.35	16,134	26,376			
51.40	16,134	26,891			
51.45	16,134	27,396			
51.50	16,134	27,891			
51.55	16,134	28,373			

Summary for Pond P-106: SWMB-106

Inflow Area = 60,202 sf, 78.09% Impervious, Inflow Depth = 6.31" for 100-yr event
 Inflow = 10.63 cfs @ 12.03 hrs, Volume= 31,674 cf
 Outflow = 10.15 cfs @ 12.05 hrs, Volume= 31,676 cf, Atten= 5%, Lag= 1.1 min
 Discarded = 0.55 cfs @ 12.05 hrs, Volume= 19,795 cf
 Primary = 9.60 cfs @ 12.05 hrs, Volume= 11,881 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 48.25' @ 12.05 hrs Surf.Area= 2,697 sf Storage= 3,346 cf

Plug-Flow detention time= 24.3 min calculated for 31,623 cf (100% of inflow)
 Center-of-Mass det. time= 24.3 min (818.4 - 794.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.00'	1,904 cf	28.17"W x 95.76"L x 2.33'H Field A 6,294 cf Overall - 1,533 cf Embedded = 4,760 cf x 40.0% Voids
#2A	46.50'	1,533 cf	ADS_StormTech SC-310 +Cap x 104 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 104 Chambers in 8 Rows
		3,437 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	47.50'	4.0' long x 5.00' rise Weir Wall 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.00'

Discarded OutFlow Max=0.55 cfs @ 12.05 hrs HW=48.25' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 0.55 cfs)

Primary OutFlow Max=9.57 cfs @ 12.05 hrs HW=48.25' (Free Discharge)
 ↑ **1=Low Level Orifice** (Orifice Controls 0.94 cfs @ 4.81 fps)
 ↓ **2=Weir Wall** (Weir Controls 8.63 cfs @ 3.00 fps)

Pond P-106: SWMB-106 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

104 Chambers x 14.7 cf = 1,533.2 cf Chamber Storage

6,293.6 cf Field - 1,533.2 cf Chambers = 4,760.4 cf Stone x 40.0% Voids = 1,904.2 cf Stone Storage

Chamber Storage + Stone Storage = 3,437.3 cf = 0.079 af

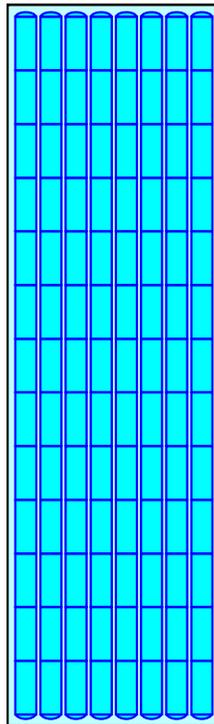
Overall Storage Efficiency = 54.6%

Overall System Size = 95.76' x 28.17' x 2.33'

104 Chambers

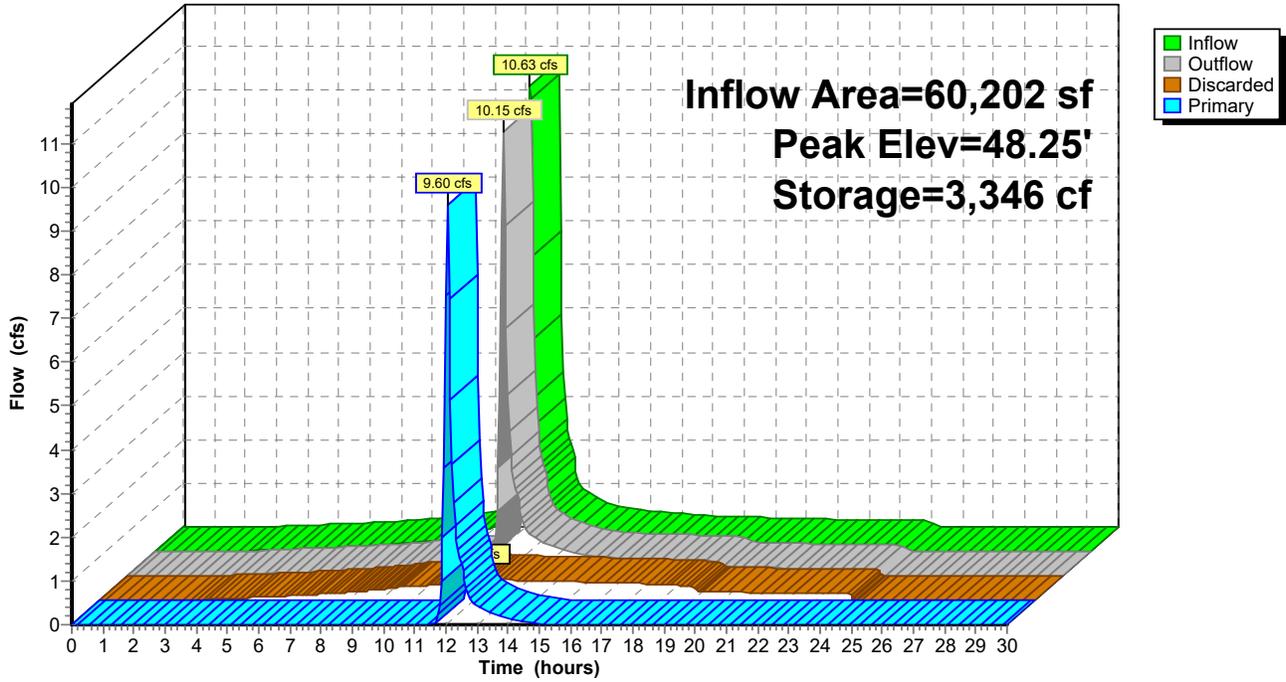
233.1 cy Field

176.3 cy Stone



Pond P-106: SWMB-106

Hydrograph



Stage-Discharge for Pond P-106: SWMB-106

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.00	0.00	0.00	0.00	51.20	101.49	0.85	100.64
46.10	0.32	0.32	0.00	51.30	105.57	0.86	104.70
46.20	0.33	0.33	0.00	51.40	109.69	0.87	108.81
46.30	0.34	0.34	0.00	51.50	113.85	0.88	112.97
46.40	0.35	0.35	0.00	51.60	118.06	0.89	117.16
46.50	0.36	0.36	0.00	51.70	122.31	0.91	121.40
46.60	0.37	0.37	0.00	51.80	126.59	0.92	125.68
46.70	0.39	0.39	0.00	51.90	130.92	0.93	129.99
46.80	0.40	0.40	0.00	52.00	135.28	0.94	134.34
46.90	0.41	0.41	0.00	52.10	139.67	0.95	138.72
47.00	0.42	0.42	0.00	52.20	144.10	0.96	143.14
47.10	0.46	0.43	0.03	52.30	148.55	0.97	147.59
47.20	0.55	0.44	0.11	52.40	153.04	0.98	152.06
47.30	0.68	0.45	0.23	52.50	157.56	0.99	156.57
47.40	0.82	0.46	0.36				
47.50	0.94	0.47	0.47				
47.60	1.45	0.48	0.97				
47.70	2.30	0.49	1.81				
47.80	3.37	0.50	2.87				
47.90	4.62	0.51	4.11				
48.00	6.03	0.52	5.51				
48.10	7.59	0.53	7.06				
48.20	9.28	0.54	8.74				
48.30	11.09	0.55	10.54				
48.40	13.02	0.56	12.46				
48.50	15.07	0.57	14.50				
48.60	17.22	0.58	16.64				
48.70	19.48	0.59	18.88				
48.80	21.83	0.60	21.23				
48.90	24.28	0.61	23.67				
49.00	26.82	0.62	26.20				
49.10	29.45	0.63	28.82				
49.20	32.17	0.65	31.53				
49.30	34.97	0.66	34.32				
49.40	37.86	0.67	37.19				
49.50	40.82	0.68	40.14				
49.60	43.86	0.69	43.18				
49.70	46.98	0.70	46.28				
49.80	50.17	0.71	49.46				
49.90	53.43	0.72	52.71				
50.00	56.76	0.73	56.03				
50.10	60.16	0.74	59.42				
50.20	63.62	0.75	62.87				
50.30	67.15	0.76	66.39				
50.40	70.74	0.77	69.97				
50.50	74.39	0.78	73.61				
50.60	78.10	0.79	77.31				
50.70	81.86	0.80	81.06				
50.80	85.69	0.81	84.87				
50.90	89.56	0.82	88.74				
51.00	93.49	0.83	92.66				
51.10	97.47	0.84	96.62				

Stage-Area-Storage for Pond P-106: SWMB-106

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.00	2,697	0	51.20	2,697	3,437
46.10	2,697	108	51.30	2,697	3,437
46.20	2,697	216	51.40	2,697	3,437
46.30	2,697	324	51.50	2,697	3,437
46.40	2,697	432	51.60	2,697	3,437
46.50	2,697	539	51.70	2,697	3,437
46.60	2,697	754	51.80	2,697	3,437
46.70	2,697	966	51.90	2,697	3,437
46.80	2,697	1,174	52.00	2,697	3,437
46.90	2,697	1,379	52.10	2,697	3,437
47.00	2,697	1,578	52.20	2,697	3,437
47.10	2,697	1,772	52.30	2,697	3,437
47.20	2,697	1,960	52.40	2,697	3,437
47.30	2,697	2,141	52.50	2,697	3,437
47.40	2,697	2,312			
47.50	2,697	2,473			
47.60	2,697	2,618			
47.70	2,697	2,745			
47.80	2,697	2,861			
47.90	2,697	2,970			
48.00	2,697	3,078			
48.10	2,697	3,186			
48.20	2,697	3,293			
48.30	2,697	3,401			
48.40	2,697	3,437			
48.50	2,697	3,437			
48.60	2,697	3,437			
48.70	2,697	3,437			
48.80	2,697	3,437			
48.90	2,697	3,437			
49.00	2,697	3,437			
49.10	2,697	3,437			
49.20	2,697	3,437			
49.30	2,697	3,437			
49.40	2,697	3,437			
49.50	2,697	3,437			
49.60	2,697	3,437			
49.70	2,697	3,437			
49.80	2,697	3,437			
49.90	2,697	3,437			
50.00	2,697	3,437			
50.10	2,697	3,437			
50.20	2,697	3,437			
50.30	2,697	3,437			
50.40	2,697	3,437			
50.50	2,697	3,437			
50.60	2,697	3,437			
50.70	2,697	3,437			
50.80	2,697	3,437			
50.90	2,697	3,437			
51.00	2,697	3,437			
51.10	2,697	3,437			

Summary for Pond P-107: SWMB P-107

Inflow Area = 90,871 sf, 92.92% Impervious, Inflow Depth = 7.14" for 100-yr event
 Inflow = 17.75 cfs @ 12.02 hrs, Volume= 54,089 cf
 Outflow = 18.60 cfs @ 12.02 hrs, Volume= 55,049 cf, Atten= 0%, Lag= 0.0 min
 Discarded = 0.98 cfs @ 12.02 hrs, Volume= 33,857 cf
 Primary = 17.62 cfs @ 12.02 hrs, Volume= 21,191 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 49.14' @ 12.02 hrs Surf.Area= 3,974 sf Storage= 5,089 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 23.0 min (787.4 - 764.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.10'	2,789 cf	41.50'W x 95.76'L x 2.33'H Field A 9,273 cf Overall - 2,300 cf Embedded = 6,973 cf x 40.0% Voids
#2A	46.60'	2,300 cf	ADS_StormTech SC-310 +Cap x 156 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 156 Chambers in 12 Rows
		5,089 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	48.00'	4.0' long x 5.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.10'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.40'

Discarded OutFlow Max=0.97 cfs @ 12.02 hrs HW=49.09' (Free Discharge)
 ↳ **3=Exfiltration** (Controls 0.97 cfs)

Primary OutFlow Max=16.60 cfs @ 12.02 hrs HW=49.09' (Free Discharge)
 ↳ **1=Low Level Orifice** (Orifice Controls 1.28 cfs @ 6.53 fps)
 ↳ **2=Sharp-Crested Rectangular Weir** (Weir Controls 15.32 cfs @ 3.72 fps)

Pond P-107: SWMB P-107 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

12 Rows x 34.0" Wide + 6.0" Spacing x 11 + 12.0" Side Stone x 2 = 41.50' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

156 Chambers x 14.7 cf = 2,299.7 cf Chamber Storage

9,272.8 cf Field - 2,299.7 cf Chambers = 6,973.0 cf Stone x 40.0% Voids = 2,789.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,089.0 cf = 0.117 af

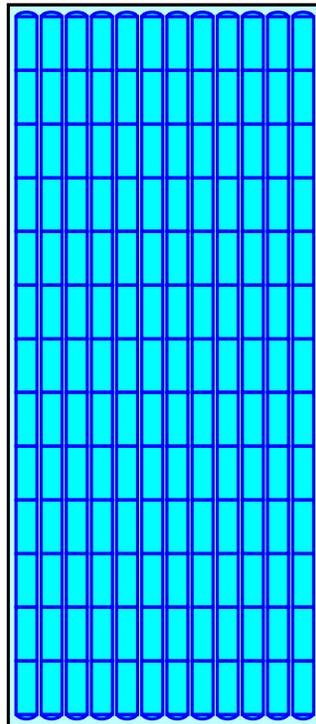
Overall Storage Efficiency = 54.9%

Overall System Size = 95.76' x 41.50' x 2.33'

156 Chambers

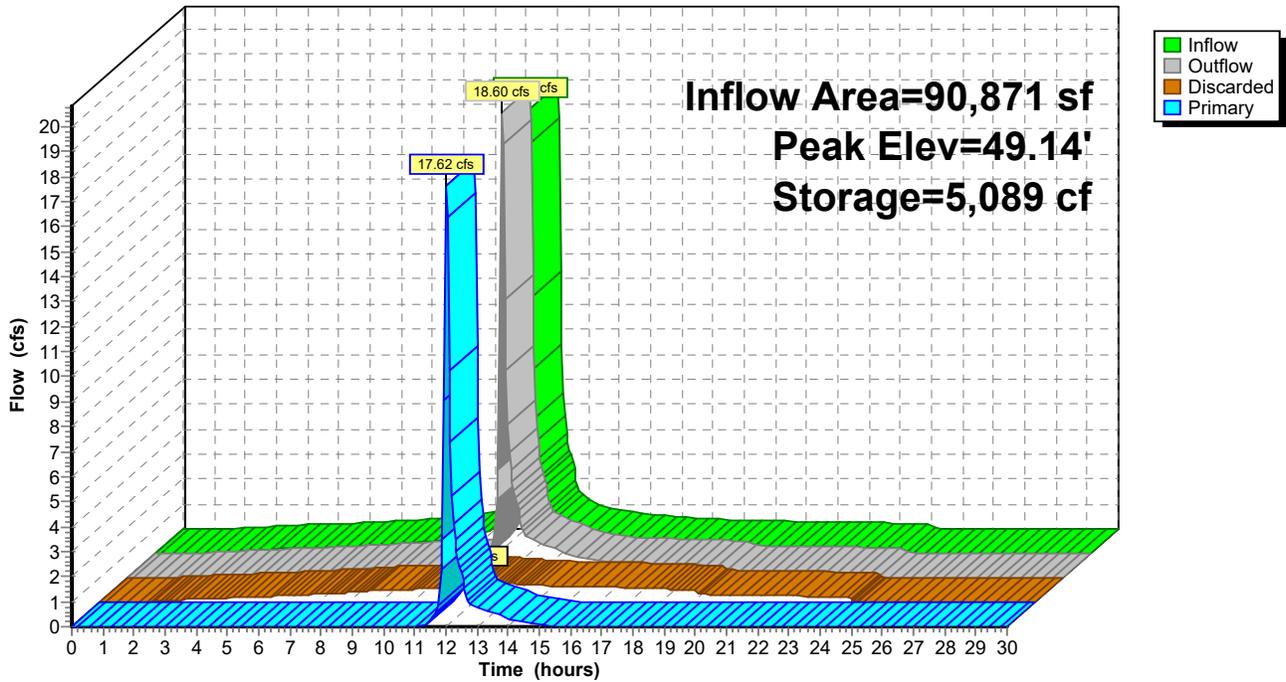
343.4 cy Field

258.3 cy Stone



Pond P-107: SWMB P-107

Hydrograph



Stage-Discharge for Pond P-107: SWMB P-107

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.10	0.00	0.00	0.00	51.30	86.34	1.35	85.00
46.20	0.48	0.48	0.00	51.40	90.22	1.36	88.86
46.30	0.49	0.49	0.00	51.50	94.15	1.38	92.77
46.40	0.51	0.51	0.00	51.60	98.14	1.40	96.74
46.50	0.53	0.53	0.00	51.70	102.17	1.41	100.76
46.60	0.55	0.55	0.00	51.80	106.25	1.43	104.82
46.70	0.56	0.56	0.00	51.90	110.37	1.45	108.93
46.80	0.58	0.58	0.00	52.00	114.54	1.47	113.08
46.90	0.60	0.60	0.00	52.10	118.76	1.48	117.27
47.00	0.61	0.61	0.00	52.20	123.01	1.50	121.51
47.10	0.66	0.63	0.03	52.30	127.30	1.52	125.78
47.20	0.76	0.65	0.11	52.40	131.63	1.53	130.10
47.30	0.89	0.66	0.23	52.50	135.99	1.55	134.44
47.40	1.04	0.68	0.36	52.60	140.39	1.57	138.83
47.50	1.17	0.70	0.47	52.70	144.83	1.58	143.24
47.60	1.27	0.72	0.56	52.80	149.29	1.60	147.69
47.70	1.37	0.73	0.63	52.90	153.78	1.62	152.16
47.80	1.45	0.75	0.70	53.00	158.30	1.64	156.67
47.90	1.53	0.77	0.76				
48.00	1.60	0.78	0.82				
48.10	2.09	0.80	1.29				
48.20	2.92	0.82	2.10				
48.30	3.97	0.83	3.14				
48.40	5.21	0.85	4.36				
48.50	6.62	0.87	5.75				
48.60	8.17	0.89	7.28				
48.70	9.86	0.90	8.95				
48.80	11.67	0.92	10.75				
48.90	13.60	0.94	12.66				
49.00	15.64	0.95	14.69				
49.10	17.80	0.97	16.83				
49.20	20.05	0.99	19.06				
49.30	22.41	1.01	21.40				
49.40	24.86	1.02	23.84				
49.50	27.40	1.04	26.36				
49.60	30.04	1.06	28.98				
49.70	32.76	1.07	31.69				
49.80	35.56	1.09	34.47				
49.90	38.45	1.11	37.34				
50.00	41.42	1.12	40.29				
50.10	44.46	1.14	43.32				
50.20	47.58	1.16	46.43				
50.30	50.78	1.18	49.60				
50.40	54.04	1.19	52.85				
50.50	57.38	1.21	56.17				
50.60	60.78	1.23	59.55				
50.70	64.25	1.24	63.00				
50.80	67.78	1.26	66.52				
50.90	71.37	1.28	70.10				
51.00	75.03	1.29	73.74				
51.10	78.74	1.31	77.43				
51.20	82.51	1.33	81.19				

Stage-Area-Storage for Pond P-107: SWMB P-107

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.10	3,974	0	51.30	3,974	5,089
46.20	3,974	159	51.40	3,974	5,089
46.30	3,974	318	51.50	3,974	5,089
46.40	3,974	477	51.60	3,974	5,089
46.50	3,974	636	51.70	3,974	5,089
46.60	3,974	795	51.80	3,974	5,089
46.70	3,974	1,114	51.90	3,974	5,089
46.80	3,974	1,429	52.00	3,974	5,089
46.90	3,974	1,739	52.10	3,974	5,089
47.00	3,974	2,042	52.20	3,974	5,089
47.10	3,974	2,339	52.30	3,974	5,089
47.20	3,974	2,627	52.40	3,974	5,089
47.30	3,974	2,906	52.50	3,974	5,089
47.40	3,974	3,174	52.60	3,974	5,089
47.50	3,974	3,428	52.70	3,974	5,089
47.60	3,974	3,667	52.80	3,974	5,089
47.70	3,974	3,881	52.90	3,974	5,089
47.80	3,974	4,069	53.00	3,974	5,089
47.90	3,974	4,240			
48.00	3,974	4,400			
48.10	3,974	4,559			
48.20	3,974	4,718			
48.30	3,974	4,877			
48.40	3,974	5,036			
48.50	3,974	5,089			
48.60	3,974	5,089			
48.70	3,974	5,089			
48.80	3,974	5,089			
48.90	3,974	5,089			
49.00	3,974	5,089			
49.10	3,974	5,089			
49.20	3,974	5,089			
49.30	3,974	5,089			
49.40	3,974	5,089			
49.50	3,974	5,089			
49.60	3,974	5,089			
49.70	3,974	5,089			
49.80	3,974	5,089			
49.90	3,974	5,089			
50.00	3,974	5,089			
50.10	3,974	5,089			
50.20	3,974	5,089			
50.30	3,974	5,089			
50.40	3,974	5,089			
50.50	3,974	5,089			
50.60	3,974	5,089			
50.70	3,974	5,089			
50.80	3,974	5,089			
50.90	3,974	5,089			
51.00	3,974	5,089			
51.10	3,974	5,089			
51.20	3,974	5,089			

Summary for Pond P-108: SWMB P-108

Inflow Area = 370,807 sf, 93.15% Impervious, Inflow Depth = 2.10" for 100-yr event
 Inflow = 29.00 cfs @ 12.04 hrs, Volume= 64,932 cf
 Outflow = 0.15 cfs @ 17.31 hrs, Volume= 12,413 cf, Atten= 99%, Lag= 316.3 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12
 Secondary = 0.15 cfs @ 17.31 hrs, Volume= 12,413 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.54' @ 17.31 hrs Surf.Area= 24,640 sf Storage= 56,717 cf

Plug-Flow detention time= 475.1 min calculated for 12,392 cf (19% of inflow)
 Center-of-Mass det. time= 357.6 min (1,114.6 - 757.0)

Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	153,555 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	20,005	0	0
46.00	21,777	20,891	20,891
47.00	23,610	22,694	43,585
48.00	25,502	24,556	68,141
49.00	27,451	26,477	94,617
50.00	29,456	28,454	123,071
51.00	31,513	30,485	153,555

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	49.00'	24.0" x 36.0" Horiz. OCS-203 Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	48.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#4	Secondary	45.00'	0.270 in/hr Underdrain over Surface area

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)

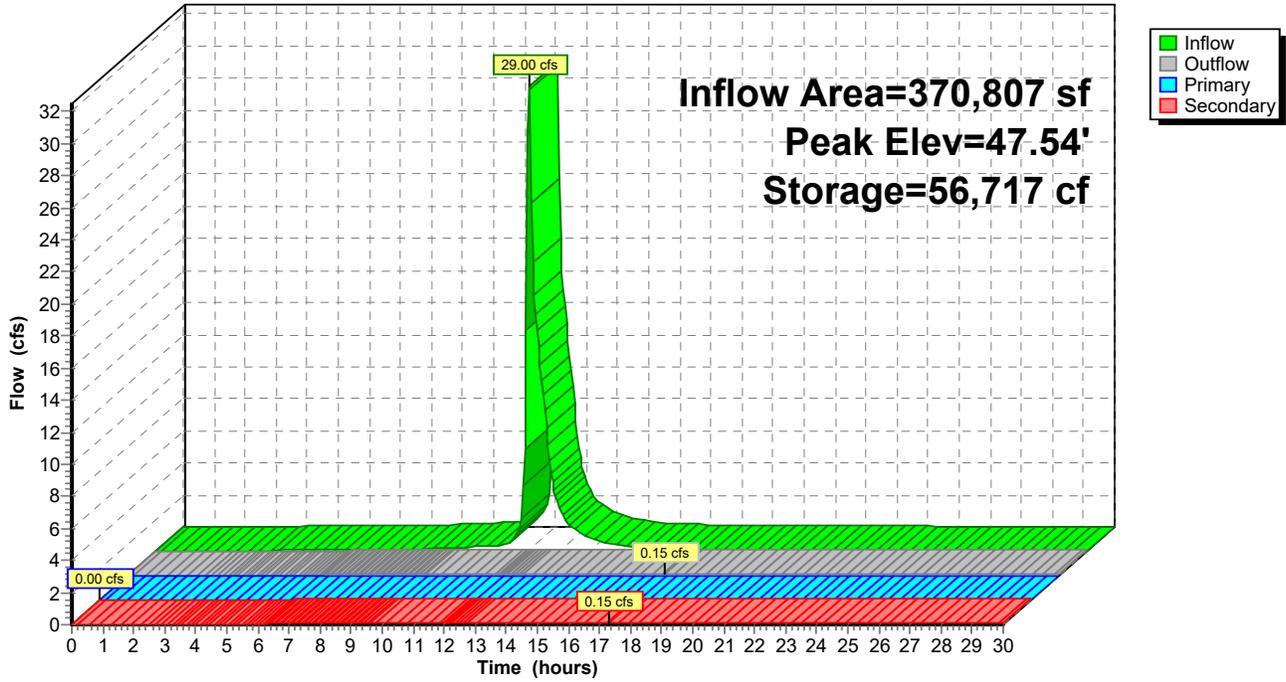
- 1=Overflow Spillway (Controls 0.00 cfs)
- 2=OCS-203 Grate (Controls 0.00 cfs)
- 3=Low Level Orifice (Controls 0.00 cfs)

Secondary OutFlow Max=0.15 cfs @ 17.31 hrs HW=47.54' (Free Discharge)

- 4=Underdrain (Exfiltration Controls 0.15 cfs)

Pond P-108: SWMB P-108

Hydrograph



Stage-Discharge for Pond P-108: SWMB P-108

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
45.00	0.00	0.00	0.00	50.20	35.43	35.25	0.19
45.10	0.13	0.00	0.13	50.30	38.86	38.67	0.19
45.20	0.13	0.00	0.13	50.40	42.80	42.61	0.19
45.30	0.13	0.00	0.13	50.50	47.37	47.18	0.19
45.40	0.13	0.00	0.13	50.60	52.54	52.35	0.19
45.50	0.13	0.00	0.13	50.70	57.78	57.58	0.19
45.60	0.13	0.00	0.13	50.80	63.41	63.21	0.19
45.70	0.13	0.00	0.13	50.90	69.43	69.24	0.20
45.80	0.13	0.00	0.13	51.00	75.85	75.66	0.20
45.90	0.13	0.00	0.13				
46.00	0.14	0.00	0.14				
46.10	0.14	0.00	0.14				
46.20	0.14	0.00	0.14				
46.30	0.14	0.00	0.14				
46.40	0.14	0.00	0.14				
46.50	0.14	0.00	0.14				
46.60	0.14	0.00	0.14				
46.70	0.14	0.00	0.14				
46.80	0.15	0.00	0.15				
46.90	0.15	0.00	0.15				
47.00	0.15	0.00	0.15				
47.10	0.15	0.00	0.15				
47.20	0.15	0.00	0.15				
47.30	0.15	0.00	0.15				
47.40	0.15	0.00	0.15				
47.50	0.15	0.00	0.15				
47.60	0.15	0.00	0.15				
47.70	0.16	0.00	0.16				
47.80	0.16	0.00	0.16				
47.90	0.16	0.00	0.16				
48.00	0.16	0.00	0.16				
48.10	0.19	0.03	0.16				
48.20	0.27	0.11	0.16				
48.30	0.39	0.23	0.16				
48.40	0.53	0.36	0.16				
48.50	0.64	0.47	0.17				
48.60	0.73	0.56	0.17				
48.70	0.80	0.63	0.17				
48.80	0.87	0.70	0.17				
48.90	0.93	0.76	0.17				
49.00	0.99	0.82	0.17				
49.10	2.08	1.91	0.17				
49.20	4.02	3.85	0.17				
49.30	6.52	6.34	0.18				
49.40	9.46	9.29	0.18				
49.50	12.80	12.62	0.18				
49.60	16.48	16.30	0.18				
49.70	20.47	20.29	0.18				
49.80	24.76	24.58	0.18				
49.90	28.80	28.62	0.18				
50.00	30.32	30.14	0.18				
50.10	32.56	32.37	0.19				

Stage-Area-Storage for Pond P-108: SWMB P-108

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
45.00	20,005	0	50.20	29,867	129,003
45.10	20,182	2,009	50.30	30,073	132,000
45.20	20,359	4,036	50.40	30,279	135,017
45.30	20,537	6,081	50.50	30,485	138,056
45.40	20,714	8,144	50.60	30,690	141,114
45.50	20,891	10,224	50.70	30,896	144,194
45.60	21,068	12,322	50.80	31,102	147,294
45.70	21,245	14,438	50.90	31,307	150,414
45.80	21,423	16,571	51.00	31,513	153,555
45.90	21,600	18,722			
46.00	21,777	20,891			
46.10	21,960	23,078			
46.20	22,144	25,283			
46.30	22,327	27,507			
46.40	22,510	29,748			
46.50	22,694	32,009			
46.60	22,877	34,287			
46.70	23,060	36,584			
46.80	23,243	38,899			
46.90	23,427	41,233			
47.00	23,610	43,585			
47.10	23,799	45,955			
47.20	23,988	48,344			
47.30	24,178	50,753			
47.40	24,367	53,180			
47.50	24,556	55,626			
47.60	24,745	58,091			
47.70	24,934	60,575			
47.80	25,124	63,078			
47.90	25,313	65,600			
48.00	25,502	68,141			
48.10	25,697	70,700			
48.20	25,892	73,280			
48.30	26,087	75,879			
48.40	26,282	78,497			
48.50	26,477	81,135			
48.60	26,671	83,793			
48.70	26,866	86,469			
48.80	27,061	89,166			
48.90	27,256	91,882			
49.00	27,451	94,617			
49.10	27,652	97,372			
49.20	27,852	100,147			
49.30	28,052	102,943			
49.40	28,253	105,758			
49.50	28,454	108,593			
49.60	28,654	111,449			
49.70	28,855	114,324			
49.80	29,055	117,219			
49.90	29,255	120,135			
50.00	29,456	123,071			
50.10	29,662	126,026			

Summary for Pond P-109: SWMB P-109

Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 5.86" for 100-yr event
 Inflow = 7.03 cfs @ 12.53 hrs, Volume= 99,297 cf
 Outflow = 6.26 cfs @ 12.85 hrs, Volume= 99,297 cf, Atten= 11%, Lag= 18.8 min
 Discarded = 1.47 cfs @ 12.85 hrs, Volume= 68,405 cf
 Primary = 4.79 cfs @ 12.85 hrs, Volume= 30,892 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 44.48' @ 12.85 hrs Surf.Area= 8,411 sf Storage= 17,720 cf

Plug-Flow detention time= 79.9 min calculated for 99,131 cf (100% of inflow)
 Center-of-Mass det. time= 79.9 min (903.3 - 823.4)

Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	26,865 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	5,939	0	0
43.00	6,891	6,415	6,415
44.00	7,900	7,396	13,811
45.00	8,966	8,433	22,244
45.50	9,519	4,621	26,865

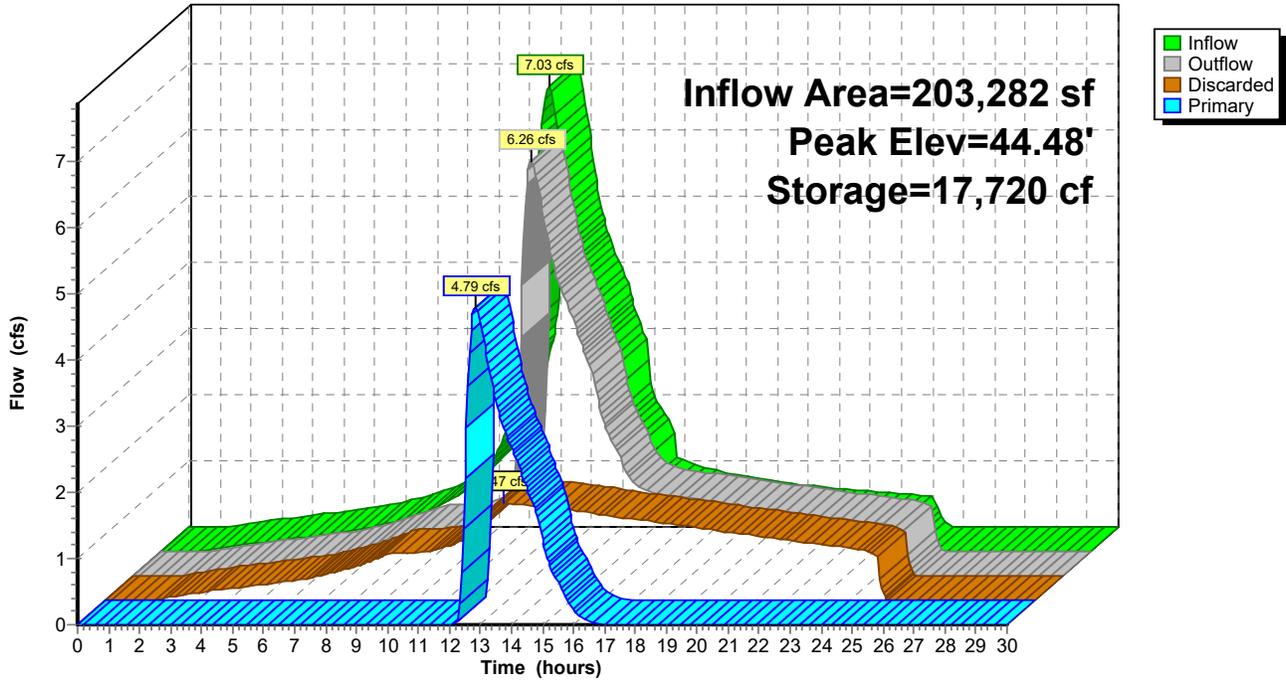
Device	Routing	Invert	Outlet Devices
#1	Primary	44.50'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	43.80'	1.0' long + 4.0 ' SideZ x 8.0' breadth Outlet Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Discarded	42.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 38.00'

Discarded OutFlow Max=1.47 cfs @ 12.85 hrs HW=44.48' (Free Discharge)
 ↑**3=Exfiltration** (Controls 1.47 cfs)

Primary OutFlow Max=4.79 cfs @ 12.85 hrs HW=44.48' (Free Discharge)
 ↑**1=Overflow Spillway** (Controls 0.00 cfs)
 ↑**2=Outlet Spillway** (Weir Controls 4.79 cfs @ 1.90 fps)

Pond P-109: SWMB P-109

Hydrograph



Stage-Discharge for Pond P-109: SWMB P-109

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
42.00	0.00	0.00	0.00	44.60	9.15	1.51	7.64
42.05	0.70	0.70	0.00	44.65	10.83	1.53	9.30
42.10	0.72	0.72	0.00	44.70	12.72	1.55	11.17
42.15	0.73	0.73	0.00	44.75	14.86	1.57	13.29
42.20	0.74	0.74	0.00	44.80	17.22	1.58	15.63
42.25	0.76	0.76	0.00	44.85	19.81	1.60	18.21
42.30	0.77	0.77	0.00	44.90	22.64	1.62	21.02
42.35	0.79	0.79	0.00	44.95	25.73	1.64	24.10
42.40	0.80	0.80	0.00	45.00	29.08	1.66	27.43
42.45	0.82	0.82	0.00	45.05	32.65	1.67	30.97
42.50	0.83	0.83	0.00	45.10	36.47	1.69	34.78
42.55	0.85	0.85	0.00	45.15	40.29	1.71	38.58
42.60	0.86	0.86	0.00	45.20	44.31	1.73	42.58
42.65	0.88	0.88	0.00	45.25	48.53	1.75	46.78
42.70	0.89	0.89	0.00	45.30	52.95	1.77	51.18
42.75	0.91	0.91	0.00	45.35	57.56	1.78	55.78
42.80	0.92	0.92	0.00	45.40	62.38	1.80	60.58
42.85	0.94	0.94	0.00	45.45	67.46	1.82	65.64
42.90	0.95	0.95	0.00	45.50	72.76	1.84	70.92
42.95	0.97	0.97	0.00				
43.00	0.98	0.98	0.00				
43.05	1.00	1.00	0.00				
43.10	1.01	1.01	0.00				
43.15	1.03	1.03	0.00				
43.20	1.04	1.04	0.00				
43.25	1.06	1.06	0.00				
43.30	1.08	1.08	0.00				
43.35	1.09	1.09	0.00				
43.40	1.11	1.11	0.00				
43.45	1.12	1.12	0.00				
43.50	1.14	1.14	0.00				
43.55	1.16	1.16	0.00				
43.60	1.17	1.17	0.00				
43.65	1.19	1.19	0.00				
43.70	1.21	1.21	0.00				
43.75	1.22	1.22	0.00				
43.80	1.24	1.24	0.00				
43.85	1.29	1.26	0.03				
43.90	1.37	1.27	0.10				
43.95	1.50	1.29	0.21				
44.00	1.66	1.31	0.36				
44.05	1.88	1.32	0.55				
44.10	2.14	1.34	0.80				
44.15	2.46	1.36	1.10				
44.20	2.84	1.37	1.47				
44.25	3.29	1.39	1.90				
44.30	3.82	1.41	2.41				
44.35	4.42	1.43	2.99				
44.40	5.11	1.44	3.66				
44.45	5.81	1.46	4.35				
44.50	6.59	1.48	5.11				
44.55	7.72	1.50	6.22				

Stage-Area-Storage for Pond P-109: SWMB P-109

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
42.00	5,939	0	44.60	8,540	18,742
42.05	5,987	298	44.65	8,593	19,171
42.10	6,034	599	44.70	8,646	19,602
42.15	6,082	902	44.75	8,700	20,035
42.20	6,129	1,207	44.80	8,753	20,472
42.25	6,177	1,515	44.85	8,806	20,911
42.30	6,225	1,825	44.90	8,859	21,352
42.35	6,272	2,137	44.95	8,913	21,797
42.40	6,320	2,452	45.00	8,966	22,244
42.45	6,367	2,769	45.05	9,021	22,693
42.50	6,415	3,089	45.10	9,077	23,146
42.55	6,463	3,410	45.15	9,132	23,601
42.60	6,510	3,735	45.20	9,187	24,059
42.65	6,558	4,061	45.25	9,243	24,520
42.70	6,605	4,391	45.30	9,298	24,983
42.75	6,653	4,722	45.35	9,353	25,449
42.80	6,701	5,056	45.40	9,408	25,918
42.85	6,748	5,392	45.45	9,464	26,390
42.90	6,796	5,731	45.50	9,519	26,865
42.95	6,843	6,072			
43.00	6,891	6,415			
43.05	6,941	6,761			
43.10	6,992	7,109			
43.15	7,042	7,460			
43.20	7,093	7,813			
43.25	7,143	8,169			
43.30	7,194	8,528			
43.35	7,244	8,889			
43.40	7,295	9,252			
43.45	7,345	9,618			
43.50	7,396	9,987			
43.55	7,446	10,358			
43.60	7,496	10,731			
43.65	7,547	11,107			
43.70	7,597	11,486			
43.75	7,648	11,867			
43.80	7,698	12,251			
43.85	7,749	12,637			
43.90	7,799	13,026			
43.95	7,850	13,417			
44.00	7,900	13,811			
44.05	7,953	14,207			
44.10	8,007	14,606			
44.15	8,060	15,007			
44.20	8,113	15,412			
44.25	8,167	15,819			
44.30	8,220	16,228			
44.35	8,273	16,641			
44.40	8,326	17,056			
44.45	8,380	17,473			
44.50	8,433	17,894			
44.55	8,486	18,317			

Summary for Pond SB-LS: SB-LS

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 1.86" for 100-yr event
 Inflow = 0.79 cfs @ 12.86 hrs, Volume= 7,741 cf
 Outflow = 0.45 cfs @ 13.61 hrs, Volume= 5,062 cf, Atten= 43%, Lag= 45.3 min
 Primary = 0.45 cfs @ 13.61 hrs, Volume= 5,062 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 43.52' @ 13.61 hrs Surf.Area= 1,759 sf Storage= 2,716 cf

Plug-Flow detention time= 240.2 min calculated for 5,053 cf (65% of inflow)
 Center-of-Mass det. time= 103.3 min (1,068.9 - 965.6)

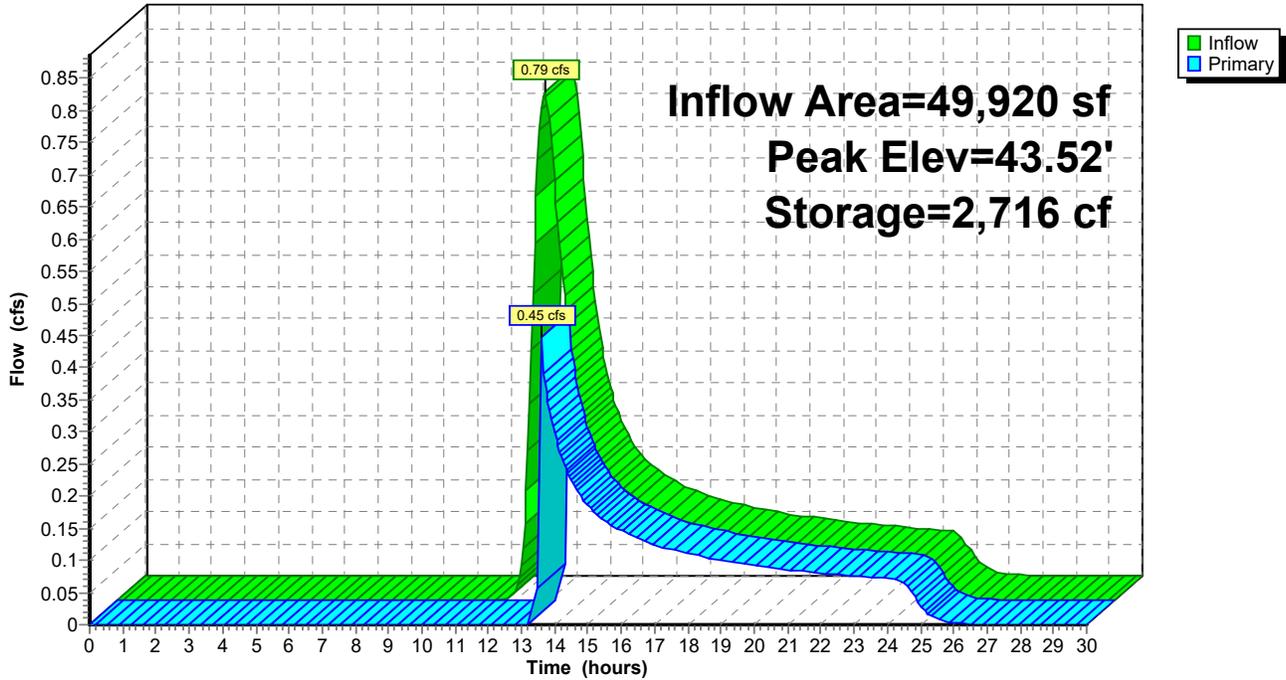
Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	3,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
40.50	290	0	0
41.00	416	177	177
42.00	741	579	755
43.00	1,489	1,115	1,870
43.50	1,747	809	2,679
44.00	2,020	942	3,621

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	50.0' long + 3.0 ' SideZ x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.35 cfs @ 13.61 hrs HW=43.52' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 0.35 cfs @ 0.34 fps)

Pond SB-LS: SB-LS

Hydrograph



Stage-Discharge for Pond SB-LS: SB-LS

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
40.50	0.00	41.54	0.00	42.58	0.00	43.62	4.95
40.52	0.00	41.56	0.00	42.60	0.00	43.64	6.25
40.54	0.00	41.58	0.00	42.62	0.00	43.66	7.64
40.56	0.00	41.60	0.00	42.64	0.00	43.68	9.13
40.58	0.00	41.62	0.00	42.66	0.00	43.70	10.70
40.60	0.00	41.64	0.00	42.68	0.00	43.72	12.43
40.62	0.00	41.66	0.00	42.70	0.00	43.74	14.26
40.64	0.00	41.68	0.00	42.72	0.00	43.76	16.19
40.66	0.00	41.70	0.00	42.74	0.00	43.78	18.21
40.68	0.00	41.72	0.00	42.76	0.00	43.80	20.34
40.70	0.00	41.74	0.00	42.78	0.00	43.82	22.55
40.72	0.00	41.76	0.00	42.80	0.00	43.84	24.86
40.74	0.00	41.78	0.00	42.82	0.00	43.86	27.27
40.76	0.00	41.80	0.00	42.84	0.00	43.88	29.77
40.78	0.00	41.82	0.00	42.86	0.00	43.90	32.36
40.80	0.00	41.84	0.00	42.88	0.00	43.92	35.11
40.82	0.00	41.86	0.00	42.90	0.00	43.94	37.97
40.84	0.00	41.88	0.00	42.92	0.00	43.96	40.93
40.86	0.00	41.90	0.00	42.94	0.00	43.98	43.99
40.88	0.00	41.92	0.00	42.96	0.00	44.00	47.16
40.90	0.00	41.94	0.00	42.98	0.00		
40.92	0.00	41.96	0.00	43.00	0.00		
40.94	0.00	41.98	0.00	43.02	0.00		
40.96	0.00	42.00	0.00	43.04	0.00		
40.98	0.00	42.02	0.00	43.06	0.00		
41.00	0.00	42.04	0.00	43.08	0.00		
41.02	0.00	42.06	0.00	43.10	0.00		
41.04	0.00	42.08	0.00	43.12	0.00		
41.06	0.00	42.10	0.00	43.14	0.00		
41.08	0.00	42.12	0.00	43.16	0.00		
41.10	0.00	42.14	0.00	43.18	0.00		
41.12	0.00	42.16	0.00	43.20	0.00		
41.14	0.00	42.18	0.00	43.22	0.00		
41.16	0.00	42.20	0.00	43.24	0.00		
41.18	0.00	42.22	0.00	43.26	0.00		
41.20	0.00	42.24	0.00	43.28	0.00		
41.22	0.00	42.26	0.00	43.30	0.00		
41.24	0.00	42.28	0.00	43.32	0.00		
41.26	0.00	42.30	0.00	43.34	0.00		
41.28	0.00	42.32	0.00	43.36	0.00		
41.30	0.00	42.34	0.00	43.38	0.00		
41.32	0.00	42.36	0.00	43.40	0.00		
41.34	0.00	42.38	0.00	43.42	0.00		
41.36	0.00	42.40	0.00	43.44	0.00		
41.38	0.00	42.42	0.00	43.46	0.00		
41.40	0.00	42.44	0.00	43.48	0.00		
41.42	0.00	42.46	0.00	43.50	0.00		
41.44	0.00	42.48	0.00	43.52	0.34		
41.46	0.00	42.50	0.00	43.54	0.95		
41.48	0.00	42.52	0.00	43.56	1.75		
41.50	0.00	42.54	0.00	43.58	2.69		
41.52	0.00	42.56	0.00	43.60	3.77		

Stage-Area-Storage for Pond SB-LS: SB-LS

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
40.50	290	0	43.10	1,541	2,021
40.55	303	15	43.15	1,566	2,099
40.60	315	30	43.20	1,592	2,178
40.65	328	46	43.25	1,618	2,258
40.70	340	63	43.30	1,644	2,340
40.75	353	80	43.35	1,670	2,423
40.80	366	98	43.40	1,695	2,507
40.85	378	117	43.45	1,721	2,592
40.90	391	136	43.50	1,747	2,679
40.95	403	156	43.55	1,774	2,767
41.00	416	177	43.60	1,802	2,856
41.05	432	198	43.65	1,829	2,947
41.10	449	220	43.70	1,856	3,039
41.15	465	243	43.75	1,884	3,133
41.20	481	266	43.80	1,911	3,228
41.25	497	291	43.85	1,938	3,324
41.30	513	316	43.90	1,965	3,421
41.35	530	342	43.95	1,993	3,520
41.40	546	369	44.00	2,020	3,621
41.45	562	397			
41.50	579	425			
41.55	595	454			
41.60	611	485			
41.65	627	516			
41.70	644	547			
41.75	660	580			
41.80	676	613			
41.85	692	648			
41.90	708	683			
41.95	725	718			
42.00	741	755			
42.05	778	793			
42.10	816	833			
42.15	853	875			
42.20	891	918			
42.25	928	964			
42.30	965	1,011			
42.35	1,003	1,060			
42.40	1,040	1,111			
42.45	1,078	1,164			
42.50	1,115	1,219			
42.55	1,152	1,276			
42.60	1,190	1,334			
42.65	1,227	1,395			
42.70	1,265	1,457			
42.75	1,302	1,521			
42.80	1,339	1,587			
42.85	1,377	1,655			
42.90	1,414	1,725			
42.95	1,452	1,796			
43.00	1,489	1,870			
43.05	1,515	1,945			

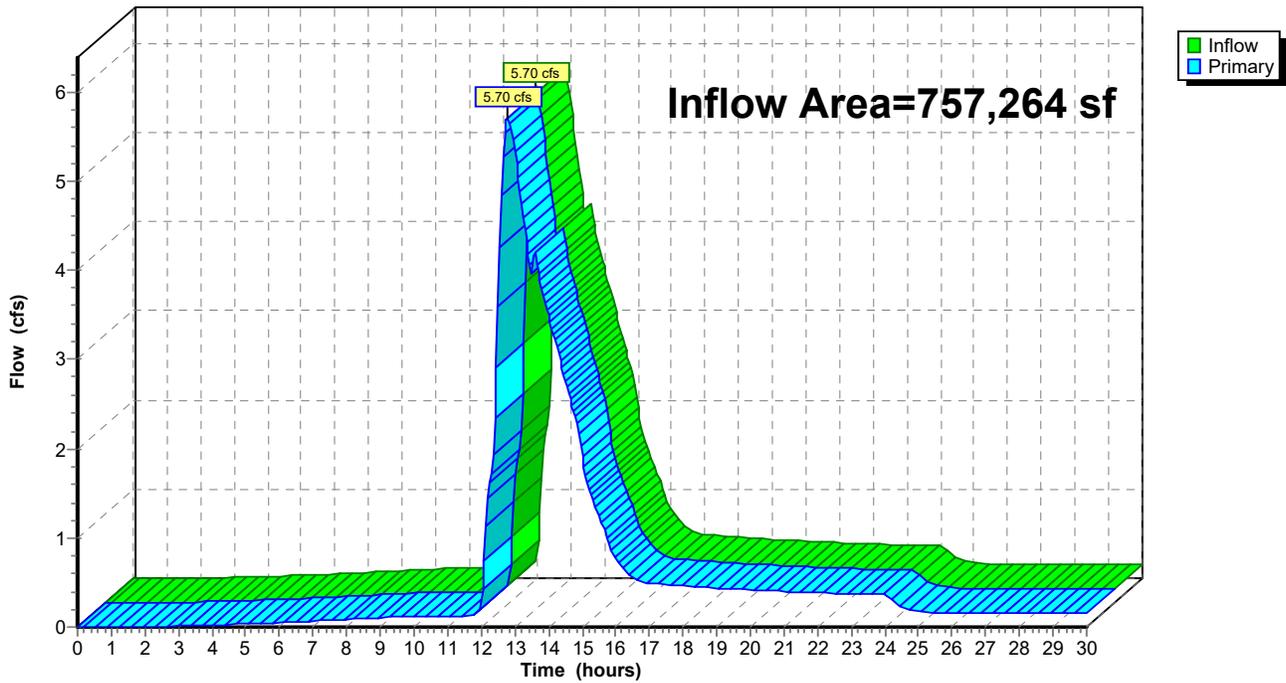
Summary for Link DP-1: Wetlands WA2 - WA12

Inflow Area = 757,264 sf, 63.15% Impervious, Inflow Depth > 0.96" for 100-yr event
Inflow = 5.70 cfs @ 12.79 hrs, Volume= 60,837 cf
Primary = 5.70 cfs @ 12.79 hrs, Volume= 60,837 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA12

Hydrograph



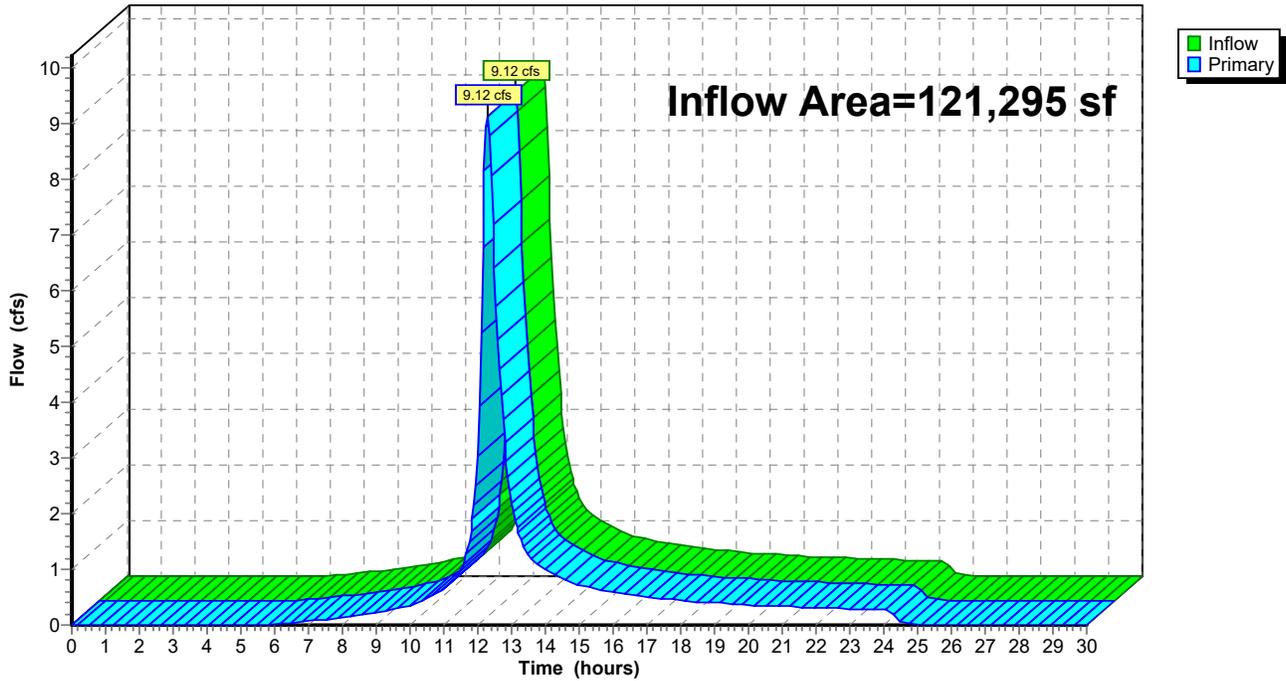
Summary for Link DP-2: Frontage Road

Inflow Area = 121,295 sf, 29.98% Impervious, Inflow Depth = 4.92" for 100-yr event
Inflow = 9.12 cfs @ 12.29 hrs, Volume= 49,686 cf
Primary = 9.12 cfs @ 12.29 hrs, Volume= 49,686 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-2: Frontage Road

Hydrograph



Summary for Subcatchment PDA-101: PDA-101

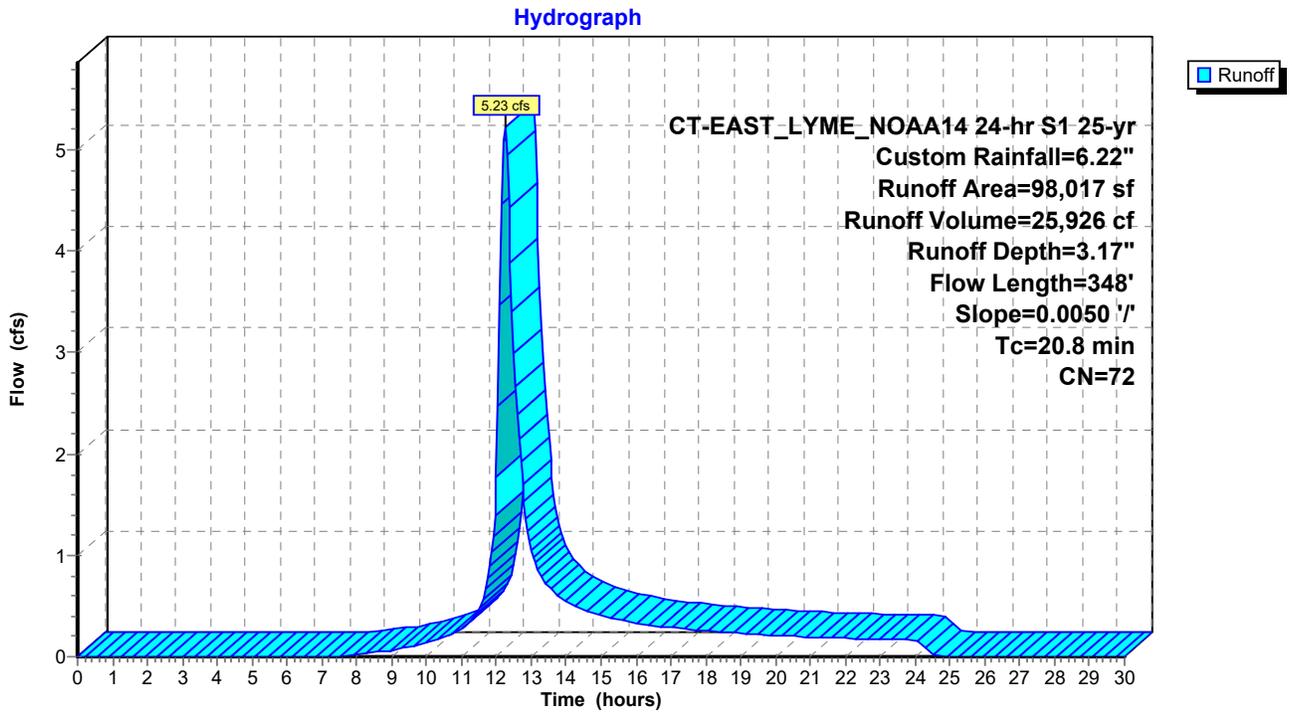
Runoff = 5.23 cfs @ 12.24 hrs, Volume= 25,926 cf, Depth= 3.17"
 Routed to Pond P-101 : SWMB P-101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
15,098	55	Woods, Good, HSG B
28,559	48	Brush, Good, HSG B
12,892	61	>75% Grass cover, Good, HSG B
41,468	98	Paved parking, HSG B
98,017	72	Weighted Average
56,549		57.69% Pervious Area
41,468		42.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0050	0.06		Sheet Flow, Sheet Grass: Dense n= 0.240 P2= 3.40"
6.4	190	0.0050	0.49		Shallow Concentrated Flow, Brush Short Grass Pasture Kv= 7.0 fps
0.6	108	0.0050	3.21	2.52	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
20.8	348	Total			

Subcatchment PDA-101: PDA-101



Summary for Subcatchment PDA-102: PDA-102

Runoff = 12.19 cfs @ 12.05 hrs, Volume= 39,528 cf, Depth= 5.40"
 Routed to Pond P-102 : SWMB P-102

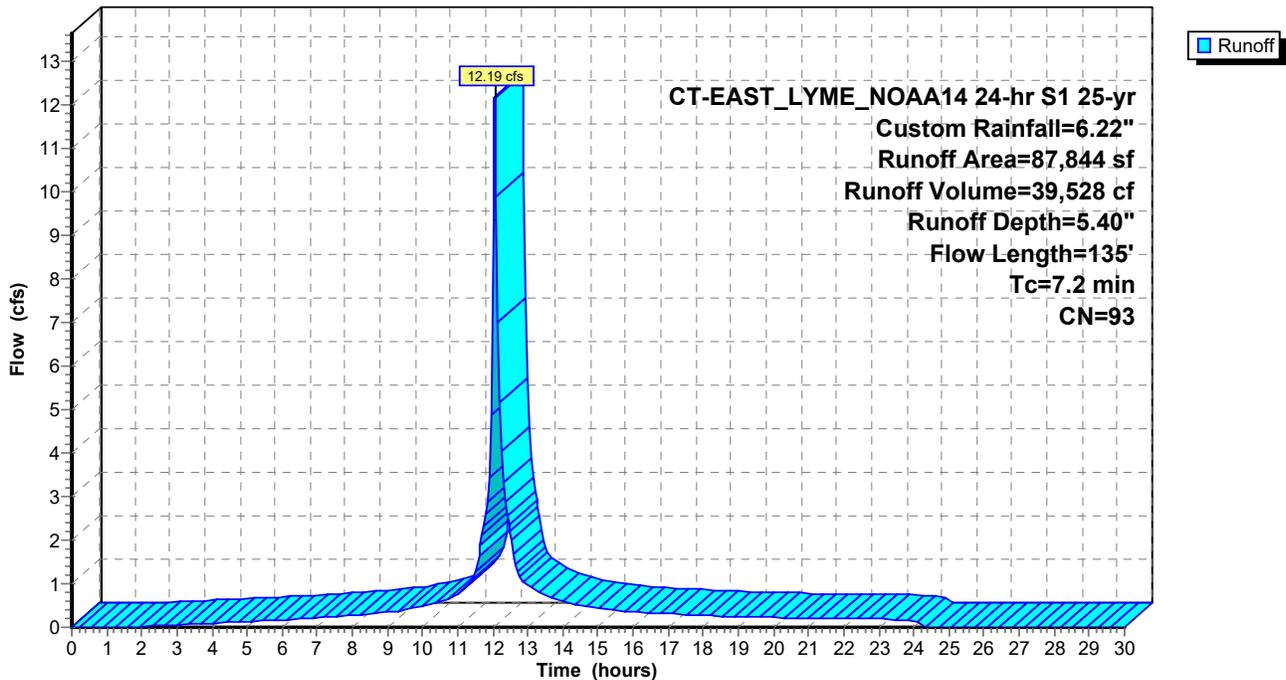
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
12,499	61	>75% Grass cover, Good, HSG B
75,345	98	Paved parking, HSG B
87,844	93	Weighted Average
12,499		14.23% Pervious Area
75,345		85.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	45	0.0100	0.11		Sheet Flow, Sheet Flow Grass: Short n= 0.150 P2= 3.40"
0.6	90	0.0150	2.49		Shallow Concentrated Flow, Paved Paved Kv= 20.3 fps
7.2	135	Total			

Subcatchment PDA-102: PDA-102

Hydrograph



Summary for Subcatchment PDA-103: PDA-103

Runoff = 3.72 cfs @ 12.02 hrs, Volume= 11,312 cf, Depth= 5.63"
 Routed to Pond P-103 : SWMB P-103

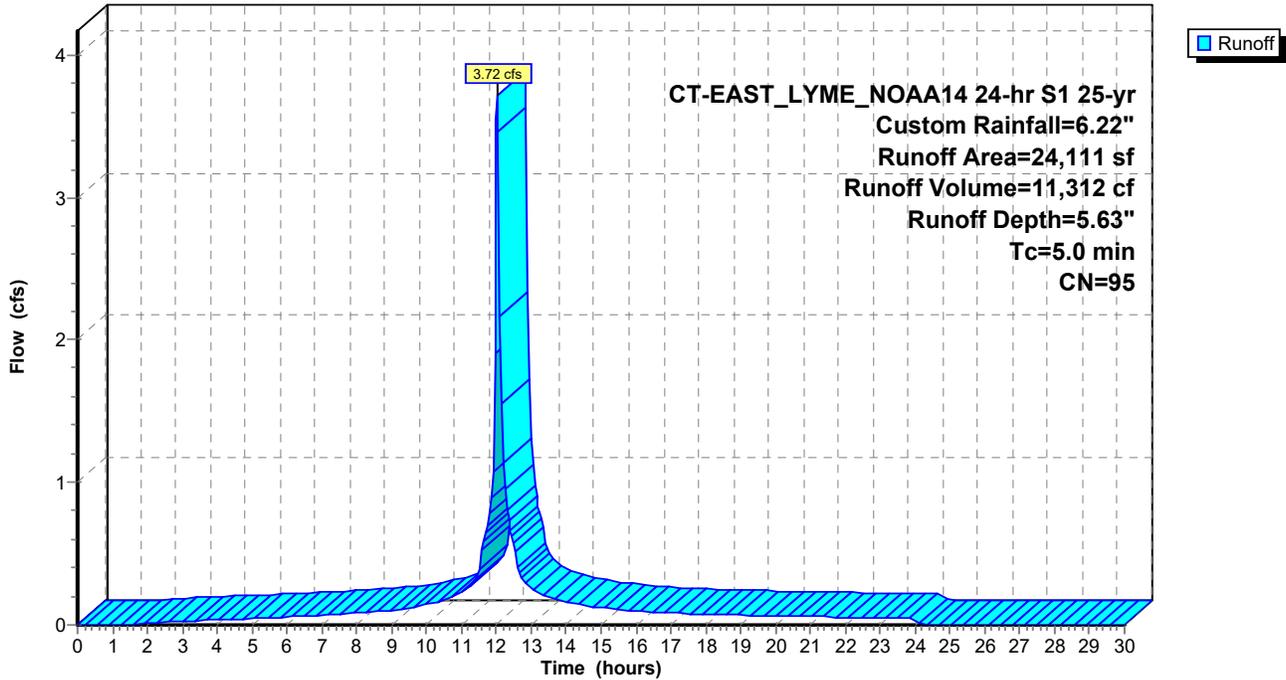
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
2,159	61	>75% Grass cover, Good, HSG B
21,952	98	Paved parking, HSG B
24,111	95	Weighted Average
2,159		8.95% Pervious Area
21,952		91.05% Impervious Area

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

Subcatchment PDA-103: PDA-103

Hydrograph



Summary for Subcatchment PDA-104: PDA-104

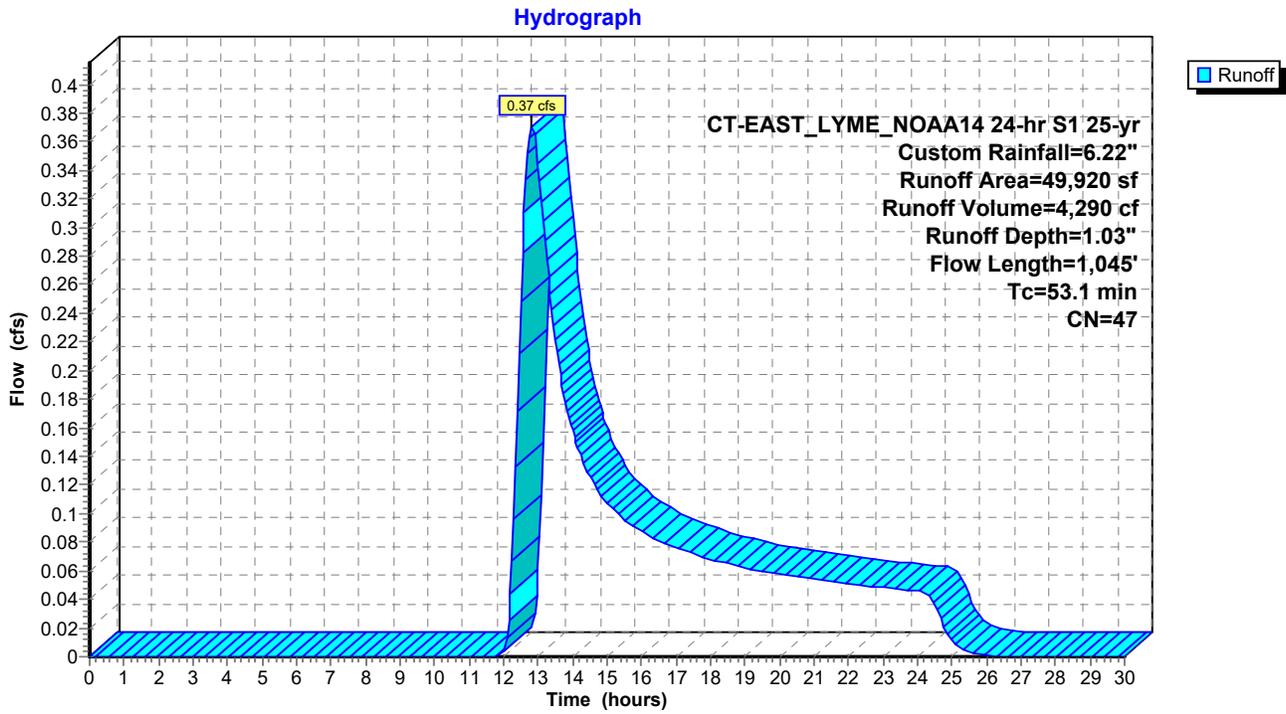
Runoff = 0.37 cfs @ 12.83 hrs, Volume= 4,290 cf, Depth= 1.03"
 Routed to Reach 1R : Grass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
10,624	30	Woods, Good, HSG A
29,321	55	Woods, Good, HSG B
7,850	39	>75% Grass cover, Good, HSG A
2,125	61	>75% Grass cover, Good, HSG B
49,920	47	Weighted Average
49,920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	75	0.0050	0.04		Sheet Flow, Sheet Woods: Light underbrush n= 0.400 P2= 3.40"
9.0	190	0.0050	0.35		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
13.1	480	0.0150	0.61		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
2.2	300	0.0050	2.25	8.99	Channel Flow, Grass Swale Area= 4.0 sf Perim= 12.4' r= 0.32' n= 0.022 Earth, clean & straight
53.1	1,045	Total			

Subcatchment PDA-104: PDA-104



Summary for Subcatchment PDA-105: PDA-105

Runoff = 2.69 cfs @ 12.02 hrs, Volume= 8,174 cf, Depth= 5.63"
 Routed to Pond P-104 : P-104

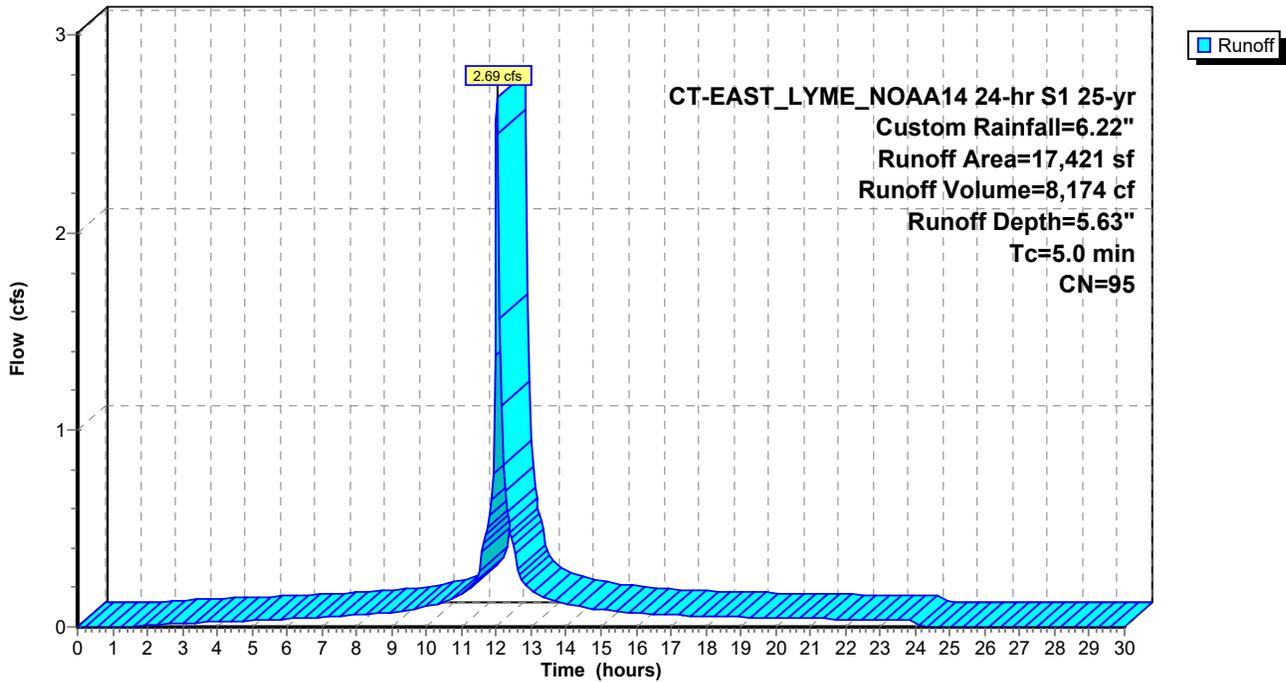
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
15,999	98	Paved parking, HSG B
1,422	61	>75% Grass cover, Good, HSG B
17,421	95	Weighted Average
1,422		8.16% Pervious Area
15,999		91.84% Impervious Area

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

Subcatchment PDA-105: PDA-105

Hydrograph



Summary for Subcatchment PDA-106: PDA-106

Runoff = 1.55 cfs @ 12.02 hrs, Volume= 4,420 cf, Depth= 4.62"
 Routed to Reach 2R : 18" HDPE

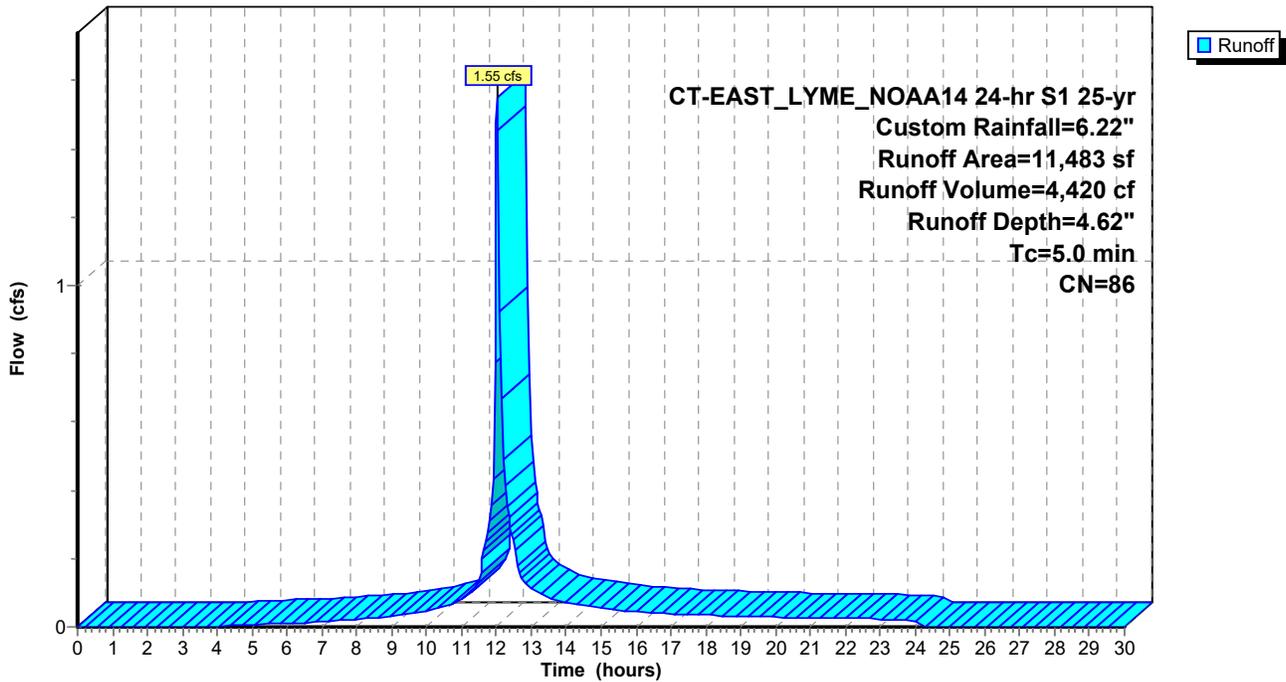
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
3,625	61	>75% Grass cover, Good, HSG B
7,858	98	Paved parking, HSG B
11,483	86	Weighted Average
3,625		31.57% Pervious Area
7,858		68.43% Impervious Area

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

Subcatchment PDA-106: PDA-106

Hydrograph



Summary for Subcatchment PDA-107: PDA-107

Runoff = 0.06 cfs @ 12.70 hrs, Volume= 1,380 cf, Depth= 0.35"
 Routed to Link DP-1 : Wetlands WA2 - WA12

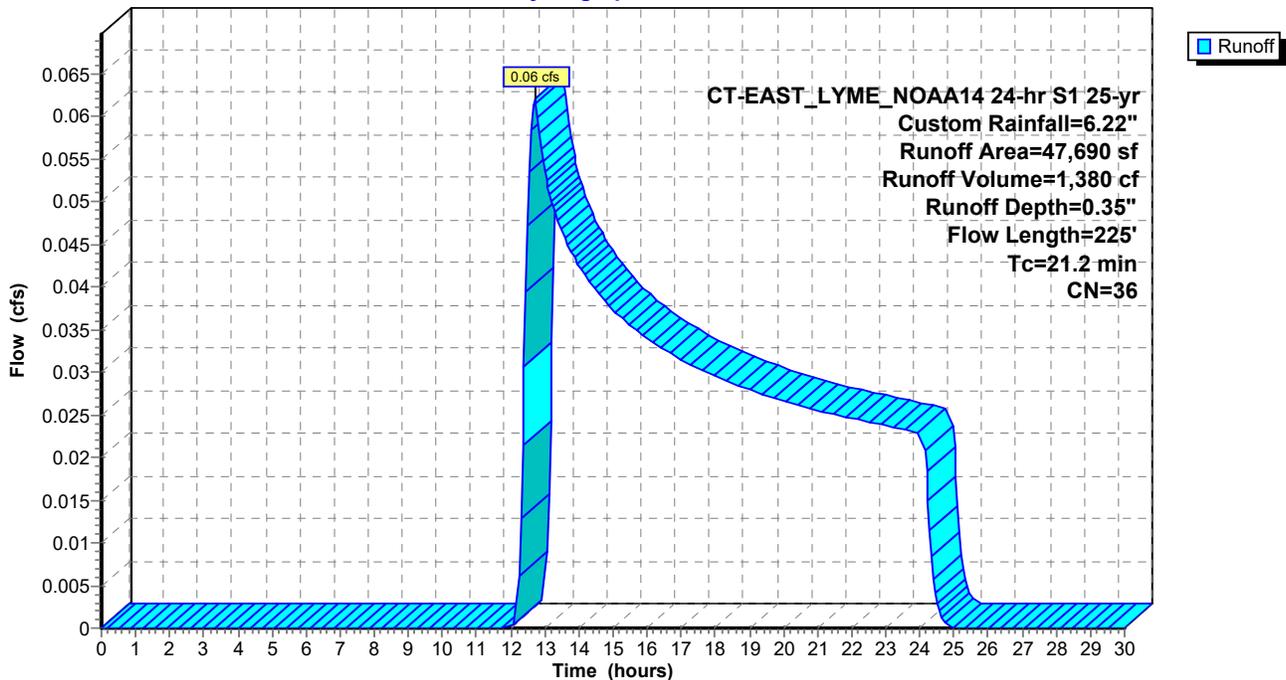
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
20,022	30	Woods, Good, HSG A
5,821	39	>75% Grass cover, Good, HSG A
2,302	61	>75% Grass cover, Good, HSG B
19,545	39	Pasture/grassland/range, Good, HSG A
47,690	36	Weighted Average
47,690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	60	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
5.1	150	0.0050	0.49		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.1	15	0.1300	1.80		Shallow Concentrated Flow, Wooded Woodland Kv= 5.0 fps
21.2	225	Total			

Subcatchment PDA-107: PDA-107

Hydrograph



Summary for Subcatchment PDA-108: PDA-108 - ROOF

Runoff = 29.00 cfs @ 12.02 hrs, Volume= 91,788 cf, Depth= 5.98"
 Routed to Pond P-105 : SWMB P-105

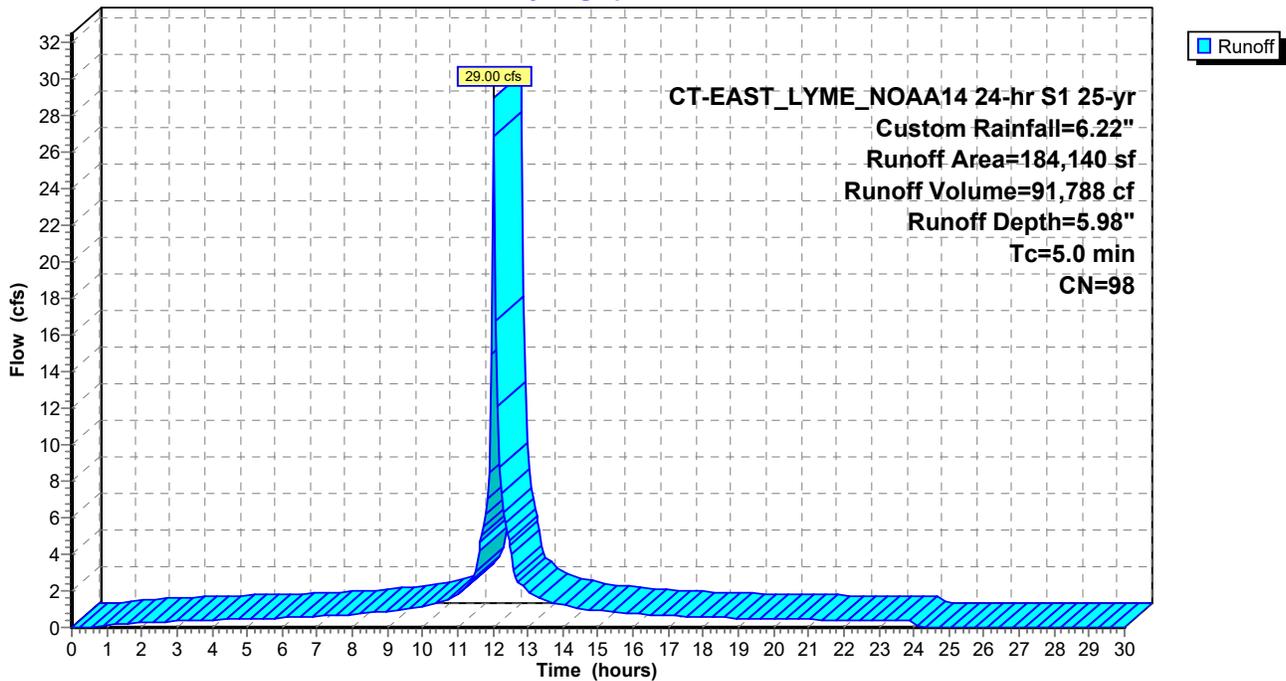
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
20,237	98	Roofs, HSG B
163,903	98	Roofs, HSG A
184,140	98	Weighted Average
184,140		100.00% Impervious Area

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

Subcatchment PDA-108: PDA-108 - ROOF

Hydrograph



Summary for Subcatchment PDA-109: PDA-109

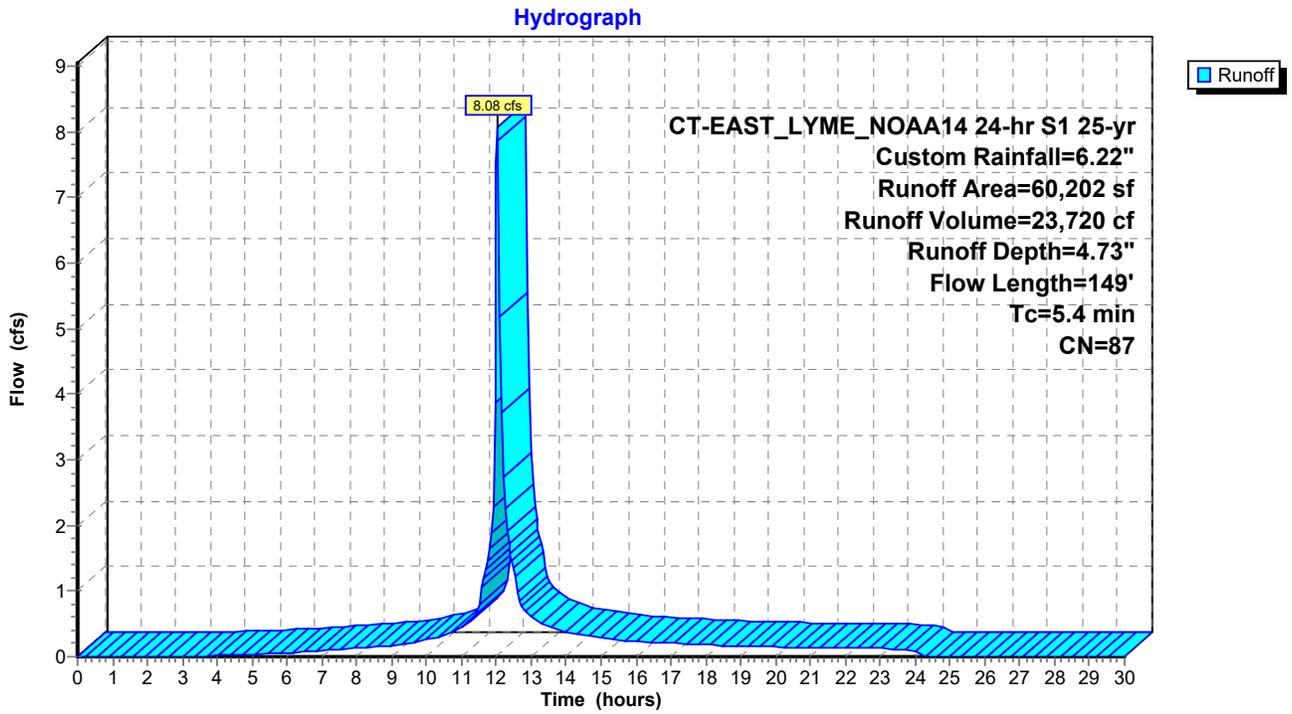
Runoff = 8.08 cfs @ 12.03 hrs, Volume= 23,720 cf, Depth= 4.73"
 Routed to Pond P-106 : SWMB-106

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
35,618	98	Paved parking, HSG A
11,394	98	Paved parking, HSG B
8,291	39	>75% Grass cover, Good, HSG A
4,899	61	>75% Grass cover, Good, HSG B
60,202	87	Weighted Average
13,190		21.91% Pervious Area
47,012		78.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	45	0.0200	0.15		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.1	20	0.0150	2.49		Shallow Concentrated Flow, gutter flow Paved Kv= 20.3 fps
0.3	84	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
5.4	149	Total			

Subcatchment PDA-109: PDA-109



Summary for Subcatchment PDA-110: PDA-110

Runoff = 13.89 cfs @ 12.02 hrs, Volume= 41,760 cf, Depth= 5.51"
 Routed to Pond P-107 : SWMB P-107

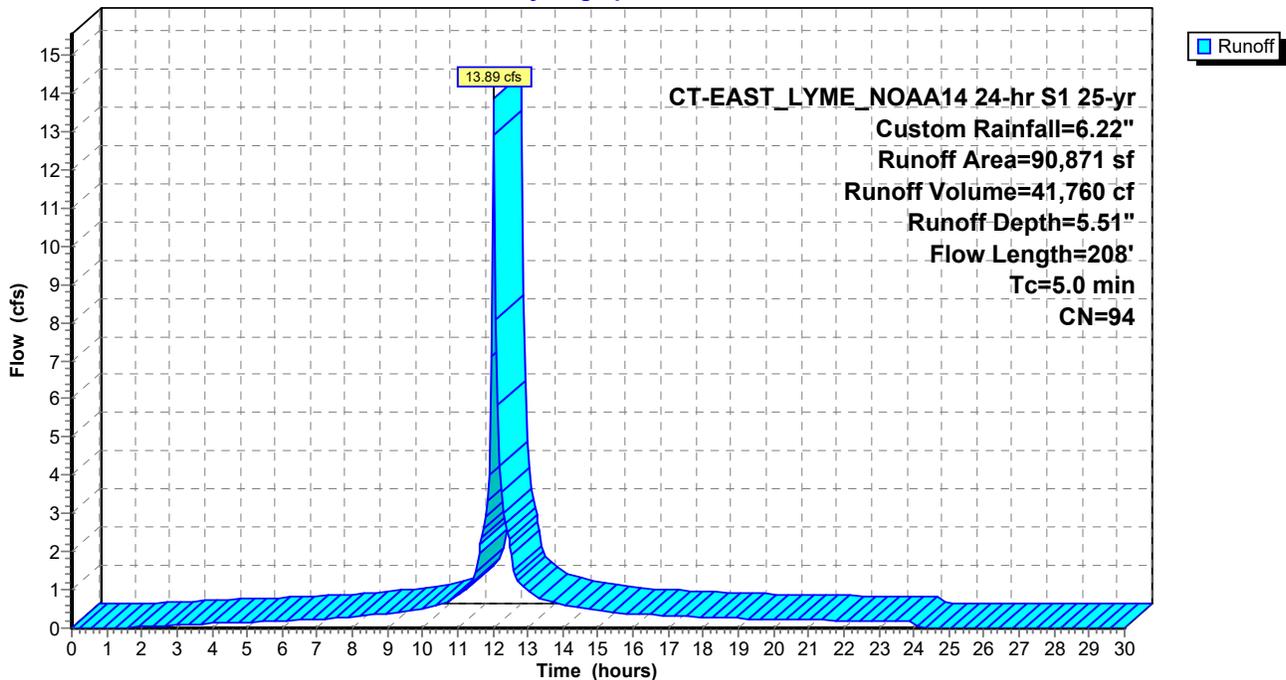
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
84,435	98	Paved parking, HSG A
6,436	39	>75% Grass cover, Good, HSG A
90,871	94	Weighted Average
6,436		7.08% Pervious Area
84,435		92.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	20	0.0200	0.13		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.40"
0.5	70	0.0150	2.49		Shallow Concentrated Flow, Gutter Flow Paved Kv= 20.3 fps
0.4	118	0.0100	4.54	3.56	Pipe Channel, 12" HDPE 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
3.5	208	Total, Increased to minimum Tc = 5.0 min			

Subcatchment PDA-110: PDA-110

Hydrograph



Summary for Subcatchment PDA-111: PDA-111

Runoff = 0.38 cfs @ 12.40 hrs, Volume= 4,491 cf, Depth= 0.63"
 Routed to Link DP-1 : Wetlands WA2 - WA12

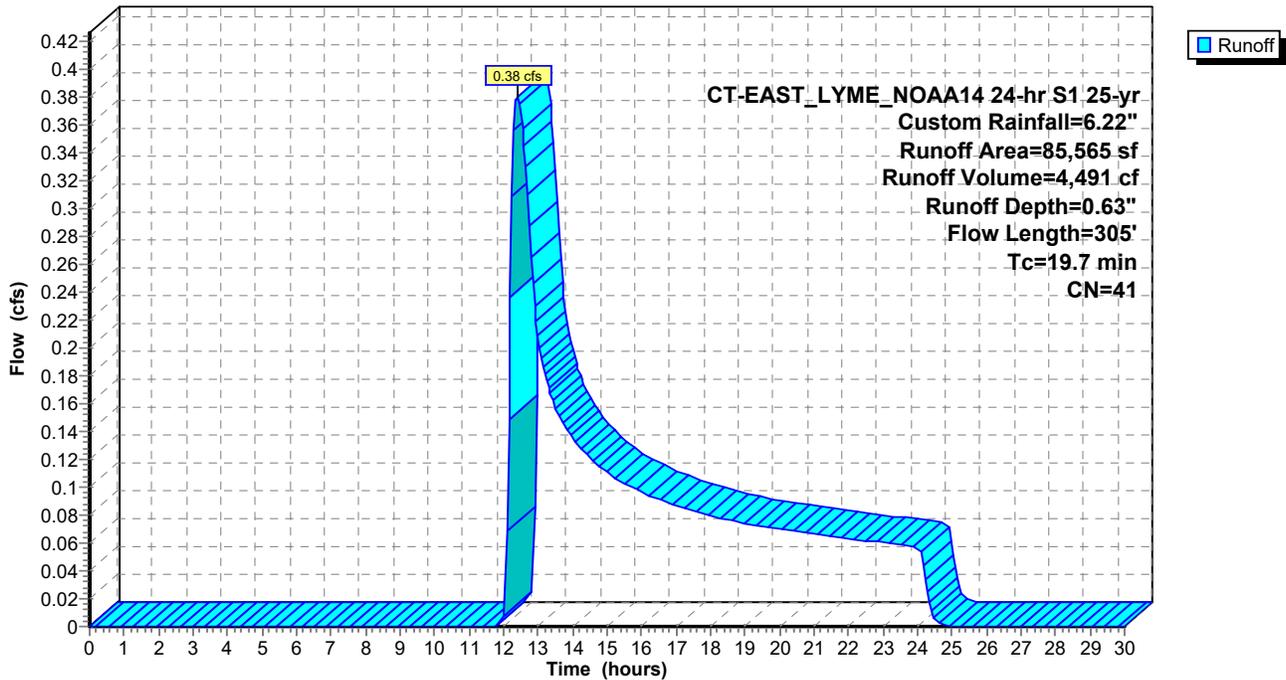
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
36,238	30	Woods, Good, HSG A
27,610	39	>75% Grass cover, Good, HSG A
3,052	55	Woods, Good, HSG B
18,665	61	Pasture/grassland/range, Good, HSG B
85,565	41	Weighted Average
85,565		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		Sheet Flow, Wooded
					Woods: Light underbrush n= 0.400 P2= 3.40"
3.9	255	0.0470	1.08		Shallow Concentrated Flow, Wooded
					Woodland Kv= 5.0 fps
19.7	305	Total			

Subcatchment PDA-111: PDA-111

Hydrograph



Summary for Subcatchment PDA-200: PDA-200

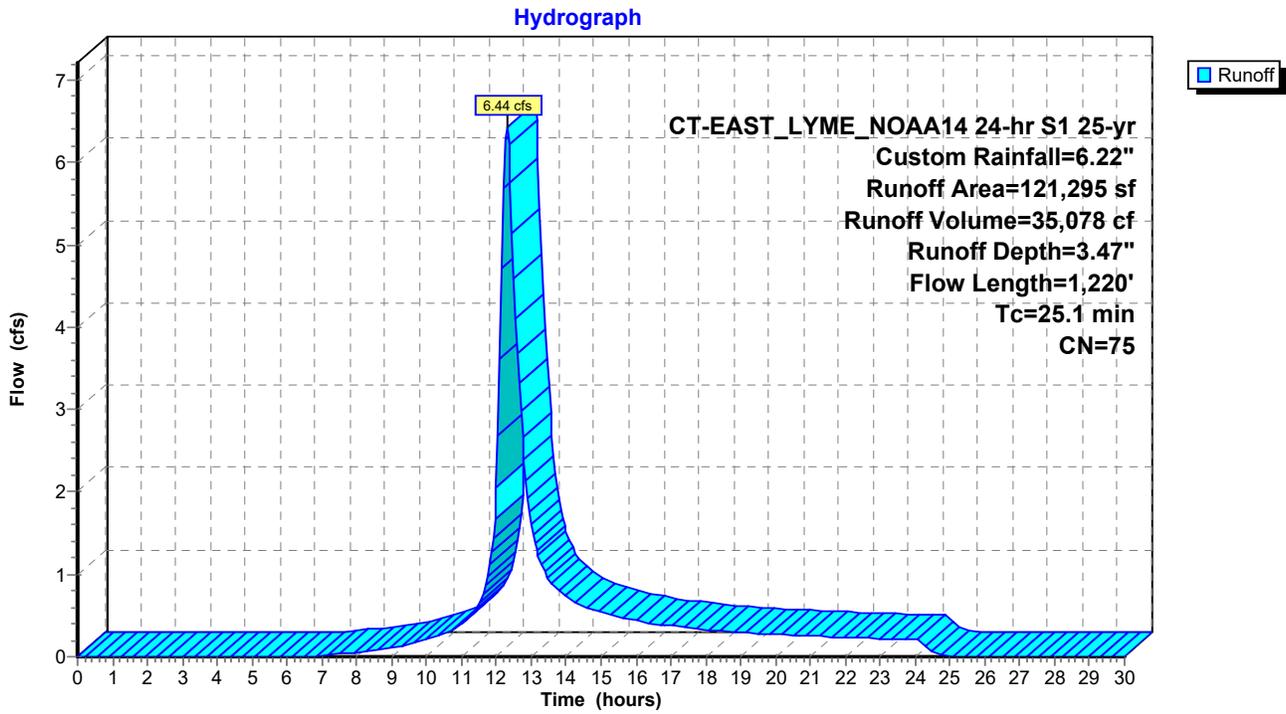
Runoff = 6.44 cfs @ 12.30 hrs, Volume= 35,078 cf, Depth= 3.47"
 Routed to Link DP-2 : Frontage Road

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 CT-EAST_LYME_NOAA14 24-hr S1 25-yr Custom Rainfall=6.22"

Area (sf)	CN	Description
23,430	61	Pasture/grassland/range, Good, HSG B
52,449	61	>75% Grass cover, Good, HSG B
35,803	98	Paved parking, HSG B
567	98	Paved parking, HSG A
8,668	96	Gravel surface, HSG B
378	39	>75% Grass cover, Good, HSG A
121,295	75	Weighted Average
84,925		70.02% Pervious Area
36,370		29.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	70	0.0050	0.06		Sheet Flow, Pasture Grass: Dense n= 0.240 P2= 3.40"
3.2	60	0.0020	0.31		Shallow Concentrated Flow, Pasture Short Grass Pasture Kv= 7.0 fps
0.9	160	0.0200	2.87		Shallow Concentrated Flow, Paved-Gutter Paved Kv= 20.3 fps
2.9	930	0.0100	5.26	6.46	Pipe Channel, Piping 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
25.1	1,220	Total			

Subcatchment PDA-200: PDA-200



Summary for Reach 1R: Grass Swale

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 1.03" for Custom event
 Inflow = 0.37 cfs @ 12.83 hrs, Volume= 4,290 cf
 Outflow = 0.37 cfs @ 12.94 hrs, Volume= 4,290 cf, Atten= 1%, Lag= 6.6 min
 Routed to Pond SB-LS : SB-LS

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.37 fps, Min. Travel Time= 3.8 min
 Avg. Velocity = 0.75 fps, Avg. Travel Time= 6.9 min

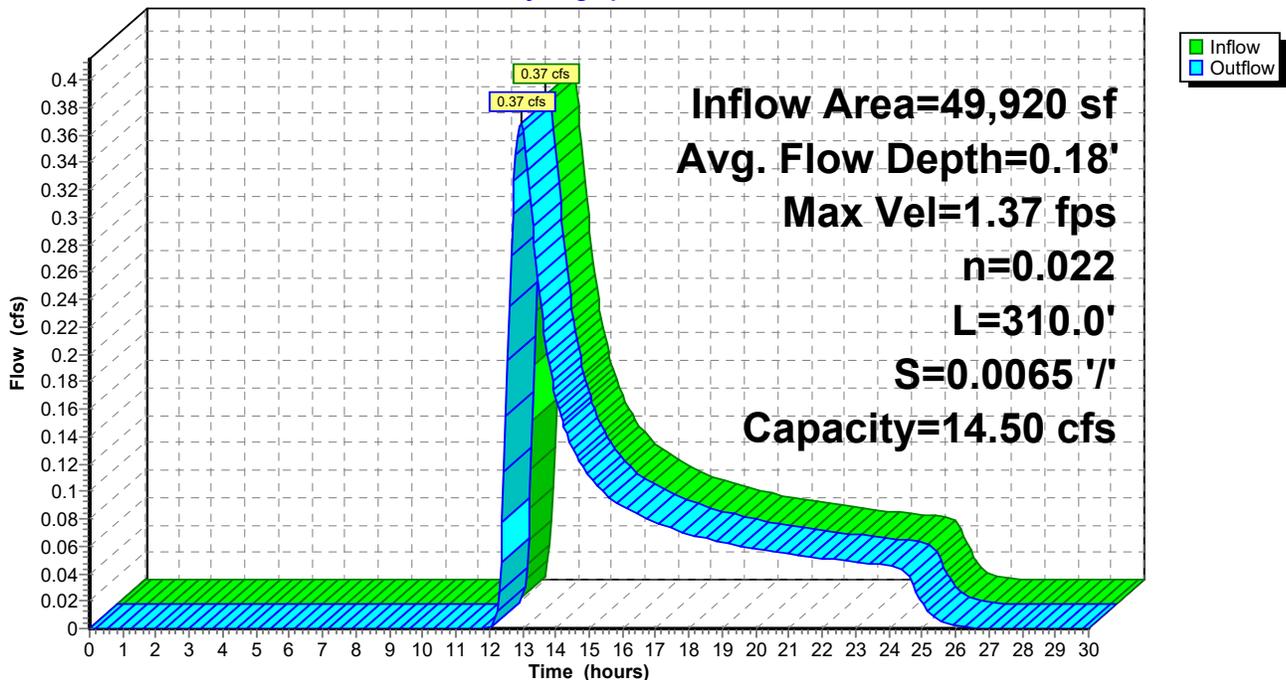
Peak Storage= 83 cf @ 12.88 hrs
 Average Depth at Peak Storage= 0.18' , Surface Width= 2.05'
 Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 14.50 cfs

1.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight
 Side Slope Z-value= 3.0 ' / ' Top Width= 7.00'
 Length= 310.0' Slope= 0.0065 ' / '
 Inlet Invert= 47.00', Outlet Invert= 45.00'



Reach 1R: Grass Swale

Hydrograph



Stage-Discharge for Reach 1R: Grass Swale

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
47.00	0.00	0.00	47.52	2.49	3.31
47.01	0.25	0.00	47.53	2.51	3.45
47.02	0.38	0.01	47.54	2.54	3.59
47.03	0.49	0.02	47.55	2.57	3.74
47.04	0.59	0.03	47.56	2.59	3.89
47.05	0.67	0.04	47.57	2.62	4.05
47.06	0.75	0.05	47.58	2.65	4.20
47.07	0.82	0.07	47.59	2.67	4.37
47.08	0.88	0.09	47.60	2.70	4.53
47.09	0.95	0.11	47.61	2.72	4.70
47.10	1.00	0.13	47.62	2.75	4.87
47.11	1.06	0.15	47.63	2.77	5.05
47.12	1.11	0.18	47.64	2.80	5.23
47.13	1.16	0.21	47.65	2.82	5.41
47.14	1.21	0.24	47.66	2.85	5.60
47.15	1.26	0.27	47.67	2.87	5.79
47.16	1.30	0.31	47.68	2.90	5.99
47.17	1.35	0.35	47.69	2.92	6.19
47.18	1.39	0.39	47.70	2.94	6.39
47.19	1.43	0.43	47.71	2.97	6.60
47.20	1.47	0.47	47.72	2.99	6.81
47.21	1.51	0.52	47.73	3.02	7.02
47.22	1.55	0.57	47.74	3.04	7.24
47.23	1.59	0.62	47.75	3.06	7.47
47.24	1.63	0.67	47.76	3.09	7.70
47.25	1.66	0.73	47.77	3.11	7.93
47.26	1.70	0.79	47.78	3.13	8.17
47.27	1.73	0.85	47.79	3.16	8.41
47.28	1.77	0.91	47.80	3.18	8.65
47.29	1.80	0.98	47.81	3.20	8.90
47.30	1.84	1.05	47.82	3.23	9.15
47.31	1.87	1.12	47.83	3.25	9.41
47.32	1.90	1.19	47.84	3.27	9.68
47.33	1.93	1.27	47.85	3.29	9.94
47.34	1.97	1.35	47.86	3.32	10.21
47.35	2.00	1.43	47.87	3.34	10.49
47.36	2.03	1.52	47.88	3.36	10.77
47.37	2.06	1.61	47.89	3.38	11.06
47.38	2.09	1.70	47.90	3.41	11.34
47.39	2.12	1.79	47.91	3.43	11.64
47.40	2.15	1.89	47.92	3.45	11.94
47.41	2.18	1.99	47.93	3.47	12.24
47.42	2.21	2.10	47.94	3.49	12.55
47.43	2.24	2.20	47.95	3.52	12.86
47.44	2.27	2.31	47.96	3.54	13.18
47.45	2.29	2.43	47.97	3.56	13.50
47.46	2.32	2.54	47.98	3.58	13.83
47.47	2.35	2.66	47.99	3.60	14.16
47.48	2.38	2.79	48.00	3.62	14.50
47.49	2.41	2.91			
47.50	2.43	3.04			
47.51	2.46	3.17			

Stage-Area-Storage for Reach 1R: Grass Swale

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
47.00	0.0	0	47.52	1.3	413
47.01	0.0	3	47.53	1.4	426
47.02	0.0	7	47.54	1.4	439
47.03	0.0	10	47.55	1.5	452
47.04	0.0	14	47.56	1.5	465
47.05	0.1	18	47.57	1.5	479
47.06	0.1	22	47.58	1.6	493
47.07	0.1	26	47.59	1.6	507
47.08	0.1	31	47.60	1.7	521
47.09	0.1	35	47.61	1.7	535
47.10	0.1	40	47.62	1.8	550
47.11	0.1	45	47.63	1.8	564
47.12	0.2	51	47.64	1.9	579
47.13	0.2	56	47.65	1.9	594
47.14	0.2	62	47.66	2.0	610
47.15	0.2	67	47.67	2.0	625
47.16	0.2	73	47.68	2.1	641
47.17	0.3	80	47.69	2.1	657
47.18	0.3	86	47.70	2.2	673
47.19	0.3	92	47.71	2.2	689
47.20	0.3	99	47.72	2.3	705
47.21	0.3	106	47.73	2.3	722
47.22	0.4	113	47.74	2.4	739
47.23	0.4	120	47.75	2.4	756
47.24	0.4	128	47.76	2.5	773
47.25	0.4	136	47.77	2.5	790
47.26	0.5	143	47.78	2.6	808
47.27	0.5	151	47.79	2.7	825
47.28	0.5	160	47.80	2.7	843
47.29	0.5	168	47.81	2.8	861
47.30	0.6	177	47.82	2.8	880
47.31	0.6	185	47.83	2.9	898
47.32	0.6	194	47.84	3.0	917
47.33	0.7	204	47.85	3.0	935
47.34	0.7	213	47.86	3.1	954
47.35	0.7	222	47.87	3.1	974
47.36	0.7	232	47.88	3.2	993
47.37	0.8	242	47.89	3.3	1,013
47.38	0.8	252	47.90	3.3	1,032
47.39	0.8	262	47.91	3.4	1,052
47.40	0.9	273	47.92	3.5	1,072
47.41	0.9	283	47.93	3.5	1,093
47.42	0.9	294	47.94	3.6	1,113
47.43	1.0	305	47.95	3.7	1,134
47.44	1.0	316	47.96	3.7	1,155
47.45	1.1	328	47.97	3.8	1,176
47.46	1.1	339	47.98	3.9	1,197
47.47	1.1	351	47.99	3.9	1,218
47.48	1.2	363	48.00	4.0	1,240
47.49	1.2	375			
47.50	1.3	388			
47.51	1.3	400			

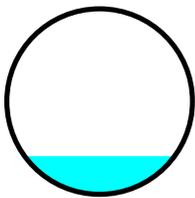
Summary for Reach 2R: 18" HDPE

Inflow Area = 219,734 sf, 97.37% Impervious, Inflow Depth = 0.96" for Custom event
 Inflow = 2.90 cfs @ 12.05 hrs, Volume= 17,659 cf
 Outflow = 2.69 cfs @ 12.15 hrs, Volume= 17,659 cf, Atten= 7%, Lag= 5.7 min
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Max. Velocity= 3.70 fps, Min. Travel Time= 2.8 min
 Avg. Velocity = 1.42 fps, Avg. Travel Time= 7.3 min

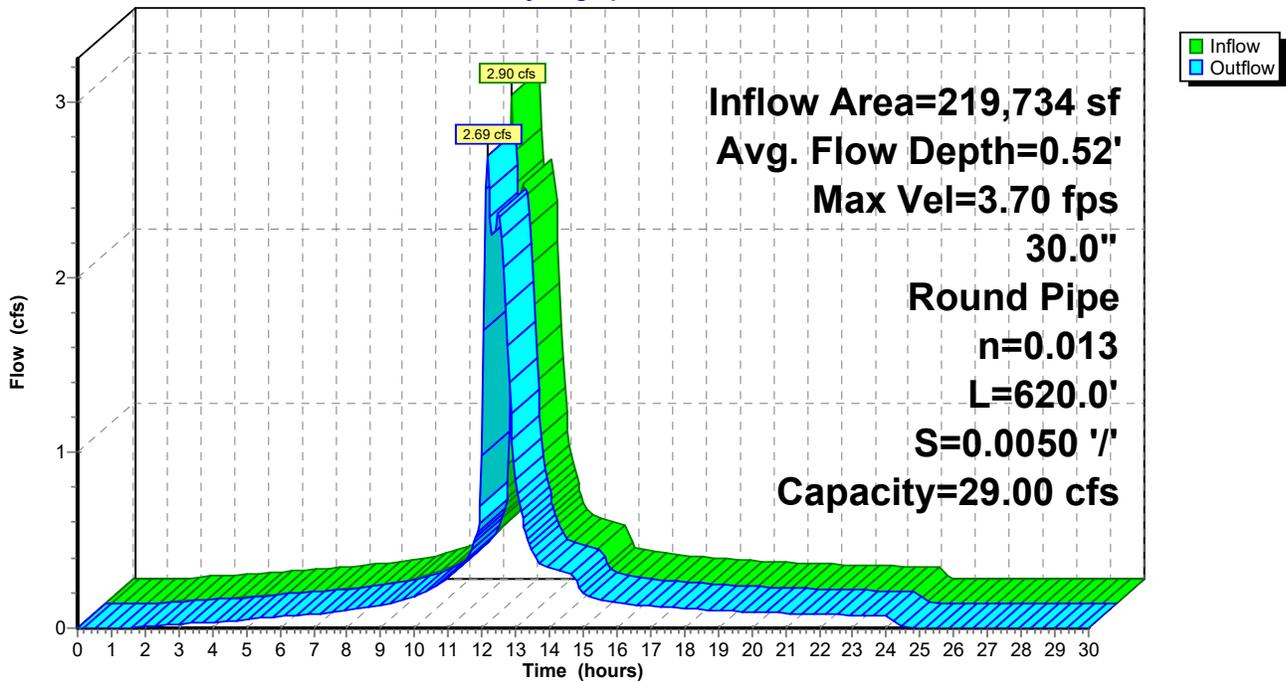
Peak Storage= 452 cf @ 12.10 hrs
 Average Depth at Peak Storage= 0.52' , Surface Width= 2.02'
 Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.00 cfs

30.0" Round Pipe
 n= 0.013
 Length= 620.0' Slope= 0.0050 '/'
 Inlet Invert= 48.10', Outlet Invert= 45.00'



Reach 2R: 18" HDPE

Hydrograph



Stage-Discharge for Reach 2R: 18" HDPE

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
48.10	0.00	0.00	49.14	5.43	10.50	50.18	6.73	29.38
48.12	0.42	0.00	49.16	5.48	10.86	50.20	6.73	29.61
48.14	0.71	0.01	49.18	5.53	11.24	50.22	6.72	29.83
48.16	0.93	0.03	49.20	5.58	11.61	50.24	6.71	30.04
48.18	1.13	0.05	49.22	5.63	11.99	50.26	6.71	30.23
48.20	1.31	0.09	49.24	5.67	12.37	50.28	6.70	30.41
48.22	1.48	0.13	49.26	5.72	12.75	50.30	6.68	30.58
48.24	1.63	0.18	49.28	5.76	13.14	50.32	6.67	30.72
48.26	1.78	0.24	49.30	5.81	13.52	50.34	6.65	30.85
48.28	1.92	0.30	49.32	5.85	13.91	50.36	6.63	30.96
48.30	2.06	0.38	49.34	5.89	14.31	50.38	6.61	31.06
48.32	2.18	0.46	49.36	5.93	14.70	50.40	6.59	31.13
48.34	2.31	0.56	49.38	5.97	15.09	50.42	6.56	31.17
48.36	2.43	0.66	49.40	6.01	15.49	50.44	6.53	31.19
48.38	2.55	0.77	49.42	6.04	15.89	50.46	6.50	31.18
48.40	2.66	0.89	49.44	6.08	16.29	50.48	6.46	31.15
48.42	2.77	1.02	49.46	6.11	16.69	50.50	6.42	31.07
48.44	2.87	1.15	49.48	6.15	17.09	50.52	6.37	30.94
48.46	2.98	1.30	49.50	6.18	17.49	50.54	6.31	30.75
48.48	3.08	1.45	49.52	6.22	17.89	50.56	6.23	30.48
48.50	3.18	1.61	49.54	6.25	18.29	50.58	6.12	29.98
48.52	3.27	1.78	49.56	6.28	18.69	50.60	5.91	29.00
48.54	3.37	1.96	49.58	6.31	19.09			
48.56	3.46	2.15	49.60	6.34	19.49			
48.58	3.55	2.34	49.62	6.36	19.88			
48.60	3.63	2.54	49.64	6.39	20.28			
48.62	3.72	2.75	49.66	6.42	20.67			
48.64	3.80	2.97	49.68	6.44	21.06			
48.66	3.88	3.19	49.70	6.47	21.45			
48.68	3.97	3.42	49.72	6.49	21.84			
48.70	4.04	3.66	49.74	6.51	22.23			
48.72	4.12	3.91	49.76	6.53	22.61			
48.74	4.20	4.17	49.78	6.55	22.99			
48.76	4.27	4.43	49.80	6.57	23.36			
48.78	4.34	4.69	49.82	6.59	23.73			
48.80	4.41	4.97	49.84	6.61	24.10			
48.82	4.48	5.25	49.86	6.62	24.46			
48.84	4.55	5.54	49.88	6.64	24.82			
48.86	4.62	5.83	49.90	6.65	25.17			
48.88	4.68	6.13	49.92	6.67	25.52			
48.90	4.75	6.43	49.94	6.68	25.86			
48.92	4.81	6.74	49.96	6.69	26.20			
48.94	4.87	7.06	49.98	6.70	26.53			
48.96	4.94	7.38	50.00	6.71	26.85			
48.98	5.00	7.71	50.02	6.72	27.17			
49.00	5.05	8.04	50.04	6.72	27.47			
49.02	5.11	8.38	50.06	6.73	27.77			
49.04	5.17	8.72	50.08	6.73	28.07			
49.06	5.22	9.07	50.10	6.73	28.35			
49.08	5.28	9.42	50.12	6.74	28.62			
49.10	5.33	9.77	50.14	6.74	28.89			
49.12	5.38	10.13	50.16	6.73	29.14			

Stage-Area-Storage for Reach 2R: 18" HDPE

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
48.10	0.0	0
48.15	0.0	15
48.20	0.1	41
48.25	0.1	75
48.30	0.2	114
48.35	0.3	158
48.40	0.3	207
48.45	0.4	259
48.50	0.5	314
48.55	0.6	373
48.60	0.7	433
48.65	0.8	496
48.70	0.9	562
48.75	1.0	629
48.80	1.1	698
48.85	1.2	768
48.90	1.4	840
48.95	1.5	912
49.00	1.6	986
49.05	1.7	1,061
49.10	1.8	1,137
49.15	2.0	1,213
49.20	2.1	1,290
49.25	2.2	1,367
49.30	2.3	1,444
49.35	2.5	1,522
49.40	2.6	1,599
49.45	2.7	1,677
49.50	2.8	1,754
49.55	3.0	1,830
49.60	3.1	1,907
49.65	3.2	1,982
49.70	3.3	2,057
49.75	3.4	2,131
49.80	3.6	2,204
49.85	3.7	2,276
49.90	3.8	2,346
49.95	3.9	2,415
50.00	4.0	2,482
50.05	4.1	2,547
50.10	4.2	2,610
50.15	4.3	2,671
50.20	4.4	2,729
50.25	4.5	2,784
50.30	4.6	2,837
50.35	4.7	2,885
50.40	4.7	2,929
50.45	4.8	2,969
50.50	4.8	3,003
50.55	4.9	3,029
50.60	4.9	3,043

Summary for Pond 3R: OCS-102 to MH-101

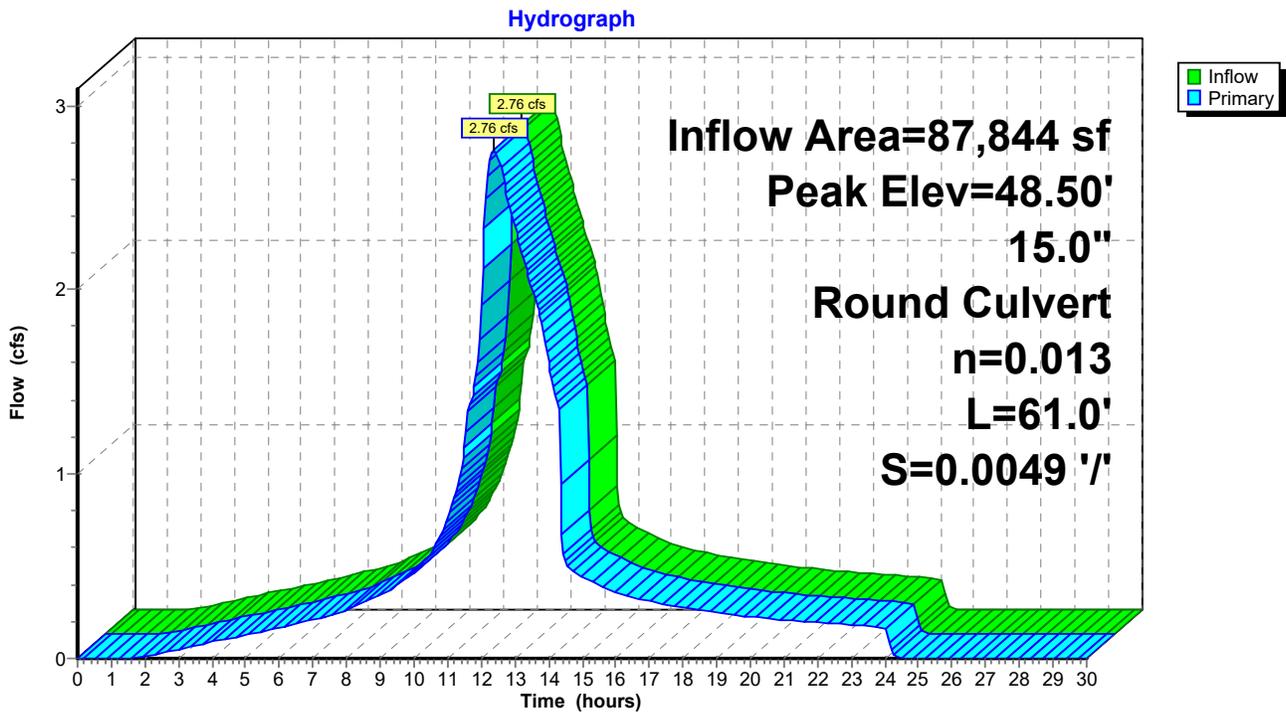
Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 5.40" for Custom event
 Inflow = 2.76 cfs @ 12.37 hrs, Volume= 39,525 cf
 Outflow = 2.76 cfs @ 12.37 hrs, Volume= 39,525 cf, Atten= 0%, Lag= 0.0 min
 Primary = 2.76 cfs @ 12.37 hrs, Volume= 39,525 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.50' @ 12.37 hrs

Device #1	Routing	Invert	Outlet Devices
	Primary	47.50'	15.0" Round Culvert L= 61.0' Ke= 0.500 Inlet / Outlet Invert= 47.50' / 47.20' S= 0.0049 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.76 cfs @ 12.37 hrs HW=48.50' (Free Discharge)
 ←1=Culvert (Barrel Controls 2.76 cfs @ 3.59 fps)

Pond 3R: OCS-102 to MH-101



Stage-Discharge for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.50	0.00	48.02	0.89	48.54	2.94
47.51	0.00	48.03	0.92	48.55	2.98
47.52	0.00	48.04	0.95	48.56	3.03
47.53	0.00	48.05	0.98	48.57	3.07
47.54	0.00	48.06	1.02	48.58	3.11
47.55	0.01	48.07	1.05	48.59	3.16
47.56	0.01	48.08	1.08	48.60	3.20
47.57	0.01	48.09	1.12	48.61	3.25
47.58	0.02	48.10	1.15	48.62	3.29
47.59	0.03	48.11	1.19	48.63	3.33
47.60	0.03	48.12	1.22	48.64	3.37
47.61	0.04	48.13	1.26	48.65	3.42
47.62	0.05	48.14	1.30	48.66	3.46
47.63	0.06	48.15	1.33	48.67	3.50
47.64	0.06	48.16	1.37	48.68	3.55
47.65	0.07	48.17	1.41	48.69	3.59
47.66	0.09	48.18	1.44	48.70	3.63
47.67	0.10	48.19	1.48	48.71	3.67
47.68	0.11	48.20	1.52	48.72	3.72
47.69	0.12	48.21	1.56	48.73	3.76
47.70	0.14	48.22	1.60	48.74	3.80
47.71	0.15	48.23	1.64	48.75	3.84
47.72	0.16	48.24	1.68		
47.73	0.18	48.25	1.72		
47.74	0.20	48.26	1.75		
47.75	0.21	48.27	1.79		
47.76	0.23	48.28	1.84		
47.77	0.25	48.29	1.88		
47.78	0.27	48.30	1.92		
47.79	0.29	48.31	1.96		
47.80	0.31	48.32	2.00		
47.81	0.33	48.33	2.04		
47.82	0.35	48.34	2.08		
47.83	0.37	48.35	2.12		
47.84	0.39	48.36	2.16		
47.85	0.42	48.37	2.21		
47.86	0.44	48.38	2.25		
47.87	0.46	48.39	2.29		
47.88	0.49	48.40	2.33		
47.89	0.51	48.41	2.38		
47.90	0.54	48.42	2.42		
47.91	0.57	48.43	2.46		
47.92	0.59	48.44	2.51		
47.93	0.62	48.45	2.55		
47.94	0.65	48.46	2.59		
47.95	0.68	48.47	2.64		
47.96	0.70	48.48	2.68		
47.97	0.73	48.49	2.72		
47.98	0.76	48.50	2.77		
47.99	0.79	48.51	2.81		
48.00	0.82	48.52	2.85		
48.01	0.86	48.53	2.90		

Stage-Area-Storage for Pond 3R: OCS-102 to MH-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0	48.71	0
47.68	0	48.20	0	48.72	0
47.69	0	48.21	0	48.73	0
47.70	0	48.22	0	48.74	0
47.71	0	48.23	0	48.75	0
47.72	0	48.24	0		
47.73	0	48.25	0		
47.74	0	48.26	0		
47.75	0	48.27	0		
47.76	0	48.28	0		
47.77	0	48.29	0		
47.78	0	48.30	0		
47.79	0	48.31	0		
47.80	0	48.32	0		
47.81	0	48.33	0		
47.82	0	48.34	0		
47.83	0	48.35	0		
47.84	0	48.36	0		
47.85	0	48.37	0		
47.86	0	48.38	0		
47.87	0	48.39	0		
47.88	0	48.40	0		
47.89	0	48.41	0		
47.90	0	48.42	0		
47.91	0	48.43	0		
47.92	0	48.44	0		
47.93	0	48.45	0		
47.94	0	48.46	0		
47.95	0	48.47	0		
47.96	0	48.48	0		
47.97	0	48.49	0		
47.98	0	48.50	0		
47.99	0	48.51	0		
48.00	0	48.52	0		
48.01	0	48.53	0		

Summary for Pond 4R: MH-101 to MH-102

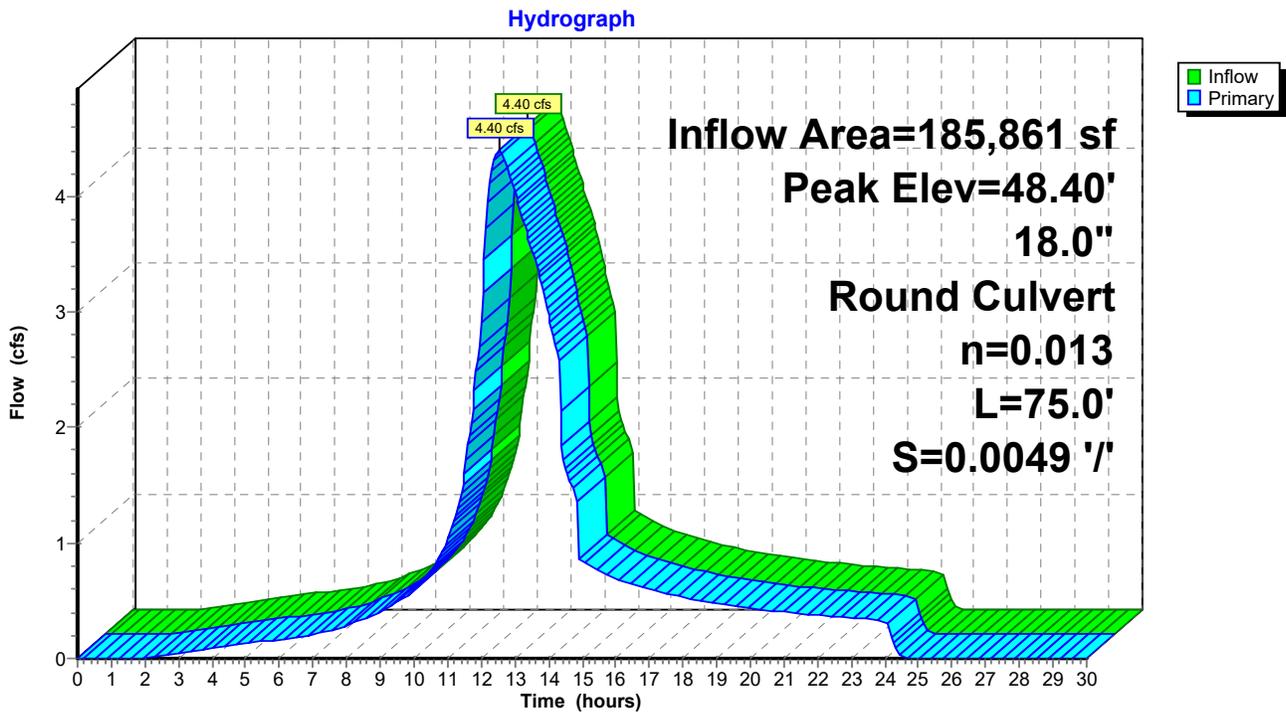
Inflow Area = 185,861 sf, 62.85% Impervious, Inflow Depth = 4.23" for Custom event
 Inflow = 4.40 cfs @ 12.52 hrs, Volume= 65,451 cf
 Outflow = 4.40 cfs @ 12.52 hrs, Volume= 65,451 cf, Atten= 0%, Lag= 0.0 min
 Primary = 4.40 cfs @ 12.52 hrs, Volume= 65,451 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.40' @ 12.52 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	47.20'	18.0" Round Culvert L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.83' S= 0.0049 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=4.40 cfs @ 12.52 hrs HW=48.39' (Free Discharge)
 ↑1=Culvert (Barrel Controls 4.40 cfs @ 4.00 fps)

Pond 4R: MH-101 to MH-102



Stage-Discharge for Pond 4R: MH-101 to MH-102

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
47.20	0.00	47.72	1.01	48.24	3.52
47.21	0.00	47.73	1.05	48.25	3.57
47.22	0.00	47.74	1.09	48.26	3.63
47.23	0.00	47.75	1.13	48.27	3.69
47.24	0.00	47.76	1.17	48.28	3.74
47.25	0.01	47.77	1.21	48.29	3.80
47.26	0.01	47.78	1.25	48.30	3.86
47.27	0.02	47.79	1.29	48.31	3.91
47.28	0.02	47.80	1.33	48.32	3.97
47.29	0.03	47.81	1.37	48.33	4.03
47.30	0.04	47.82	1.41	48.34	4.09
47.31	0.04	47.83	1.45	48.35	4.14
47.32	0.05	47.84	1.50	48.36	4.20
47.33	0.06	47.85	1.54	48.37	4.26
47.34	0.07	47.86	1.58	48.38	4.32
47.35	0.08	47.87	1.63	48.39	4.37
47.36	0.10	47.88	1.67	48.40	4.43
47.37	0.11	47.89	1.72	48.41	4.49
47.38	0.12	47.90	1.76	48.42	4.55
47.39	0.14	47.91	1.81	48.43	4.61
47.40	0.15	47.92	1.86	48.44	4.66
47.41	0.17	47.93	1.90	48.45	4.72
47.42	0.18	47.94	1.95	48.46	4.78
47.43	0.20	47.95	2.00	48.47	4.84
47.44	0.22	47.96	2.05	48.48	4.90
47.45	0.24	47.97	2.09	48.49	4.95
47.46	0.26	47.98	2.14	48.50	5.01
47.47	0.28	47.99	2.19	48.51	5.07
47.48	0.30	48.00	2.24	48.52	5.13
47.49	0.32	48.01	2.29	48.53	5.18
47.50	0.35	48.02	2.34	48.54	5.24
47.51	0.37	48.03	2.39	48.55	5.30
47.52	0.39	48.04	2.44	48.56	5.36
47.53	0.42	48.05	2.49	48.57	5.41
47.54	0.44	48.06	2.54	48.58	5.47
47.55	0.47	48.07	2.60	48.59	5.53
47.56	0.50	48.08	2.65	48.60	5.59
47.57	0.52	48.09	2.70	48.61	5.64
47.58	0.55	48.10	2.75	48.62	5.70
47.59	0.58	48.11	2.81	48.63	5.76
47.60	0.61	48.12	2.86	48.64	5.81
47.61	0.64	48.13	2.91	48.65	5.87
47.62	0.67	48.14	2.97	48.66	5.92
47.63	0.70	48.15	3.02	48.67	5.98
47.64	0.74	48.16	3.08	48.68	6.04
47.65	0.77	48.17	3.13	48.69	6.09
47.66	0.80	48.18	3.18	48.70	6.15
47.67	0.84	48.19	3.24		
47.68	0.87	48.20	3.29		
47.69	0.91	48.21	3.35		
47.70	0.94	48.22	3.41		
47.71	0.98	48.23	3.46		

Stage-Area-Storage for Pond 4R: MH-101 to MH-102

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0	48.34	0
47.31	0	47.83	0	48.35	0
47.32	0	47.84	0	48.36	0
47.33	0	47.85	0	48.37	0
47.34	0	47.86	0	48.38	0
47.35	0	47.87	0	48.39	0
47.36	0	47.88	0	48.40	0
47.37	0	47.89	0	48.41	0
47.38	0	47.90	0	48.42	0
47.39	0	47.91	0	48.43	0
47.40	0	47.92	0	48.44	0
47.41	0	47.93	0	48.45	0
47.42	0	47.94	0	48.46	0
47.43	0	47.95	0	48.47	0
47.44	0	47.96	0	48.48	0
47.45	0	47.97	0	48.49	0
47.46	0	47.98	0	48.50	0
47.47	0	47.99	0	48.51	0
47.48	0	48.00	0	48.52	0
47.49	0	48.01	0	48.53	0
47.50	0	48.02	0	48.54	0
47.51	0	48.03	0	48.55	0
47.52	0	48.04	0	48.56	0
47.53	0	48.05	0	48.57	0
47.54	0	48.06	0	48.58	0
47.55	0	48.07	0	48.59	0
47.56	0	48.08	0	48.60	0
47.57	0	48.09	0	48.61	0
47.58	0	48.10	0	48.62	0
47.59	0	48.11	0	48.63	0
47.60	0	48.12	0	48.64	0
47.61	0	48.13	0	48.65	0
47.62	0	48.14	0	48.66	0
47.63	0	48.15	0	48.67	0
47.64	0	48.16	0	48.68	0
47.65	0	48.17	0	48.69	0
47.66	0	48.18	0	48.70	0
47.67	0	48.19	0		
47.68	0	48.20	0		
47.69	0	48.21	0		
47.70	0	48.22	0		
47.71	0	48.23	0		

Summary for Pond 5R: MH-102 to MH-103

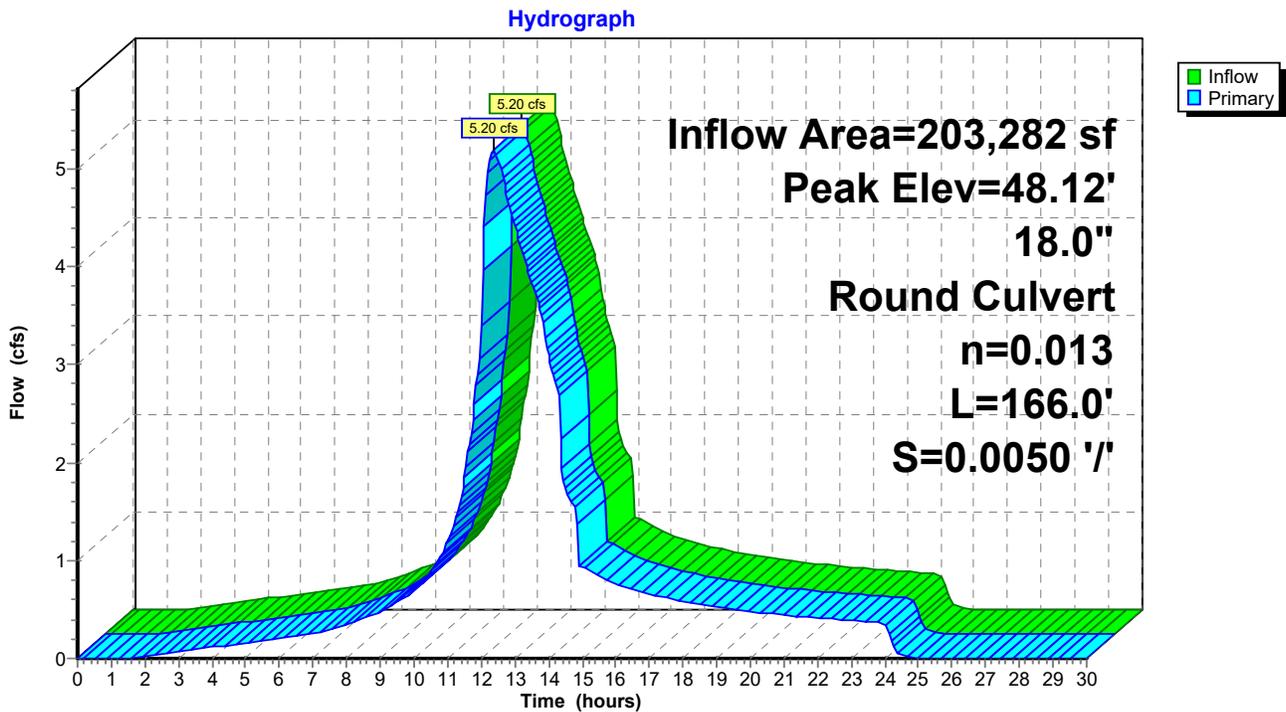
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 4.35" for Custom event
 Inflow = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf
 Outflow = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf
 Routed to Pond 6R : MH-103 to FES-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.12' @ 12.37 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.83'	18.0" Round Culvert L= 166.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 46.83' / 46.00' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=5.19 cfs @ 12.37 hrs HW=48.12' (Free Discharge)
 ←1=Culvert (Barrel Controls 5.19 cfs @ 4.30 fps)

Pond 5R: MH-102 to MH-103



Stage-Discharge for Pond 5R: MH-102 to MH-103

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.83	0.00	47.35	1.05	47.87	3.69
46.84	0.00	47.36	1.09	47.88	3.75
46.85	0.00	47.37	1.13	47.89	3.81
46.86	0.00	47.38	1.17	47.90	3.87
46.87	0.00	47.39	1.22	47.91	3.93
46.88	0.01	47.40	1.26	47.92	3.99
46.89	0.01	47.41	1.30	47.93	4.05
46.90	0.02	47.42	1.34	47.94	4.11
46.91	0.02	47.43	1.39	47.95	4.17
46.92	0.03	47.44	1.43	47.96	4.22
46.93	0.04	47.45	1.47	47.97	4.28
46.94	0.04	47.46	1.52	47.98	4.34
46.95	0.05	47.47	1.56	47.99	4.40
46.96	0.06	47.48	1.61	48.00	4.46
46.97	0.07	47.49	1.66	48.01	4.52
46.98	0.08	47.50	1.70	48.02	4.58
46.99	0.10	47.51	1.75	48.03	4.64
47.00	0.11	47.52	1.80	48.04	4.70
47.01	0.12	47.53	1.85	48.05	4.76
47.02	0.14	47.54	1.89	48.06	4.82
47.03	0.15	47.55	1.94	48.07	4.88
47.04	0.17	47.56	1.99	48.08	4.94
47.05	0.19	47.57	2.04	48.09	5.00
47.06	0.21	47.58	2.09	48.10	5.06
47.07	0.22	47.59	2.14	48.11	5.12
47.08	0.24	47.60	2.20	48.12	5.18
47.09	0.26	47.61	2.25	48.13	5.24
47.10	0.29	47.62	2.30	48.14	5.29
47.11	0.31	47.63	2.35	48.15	5.35
47.12	0.33	47.64	2.40	48.16	5.41
47.13	0.35	47.65	2.46	48.17	5.47
47.14	0.38	47.66	2.51	48.18	5.53
47.15	0.40	47.67	2.56	48.19	5.59
47.16	0.43	47.68	2.62	48.20	5.64
47.17	0.46	47.69	2.67	48.21	5.70
47.18	0.48	47.70	2.73	48.22	5.76
47.19	0.51	47.71	2.78	48.23	5.82
47.20	0.54	47.72	2.84	48.24	5.87
47.21	0.57	47.73	2.89	48.25	5.93
47.22	0.60	47.74	2.95	48.26	5.99
47.23	0.63	47.75	3.00	48.27	6.04
47.24	0.66	47.76	3.06	48.28	6.10
47.25	0.69	47.77	3.12	48.29	6.15
47.26	0.73	47.78	3.17	48.30	6.21
47.27	0.76	47.79	3.23	48.31	6.26
47.28	0.80	47.80	3.29	48.32	6.32
47.29	0.83	47.81	3.34	48.33	6.37
47.30	0.87	47.82	3.40		
47.31	0.90	47.83	3.46		
47.32	0.94	47.84	3.52		
47.33	0.98	47.85	3.58		
47.34	1.02	47.86	3.63		

Stage-Area-Storage for Pond 5R: MH-102 to MH-103

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.83	0	47.35	0	47.87	0
46.84	0	47.36	0	47.88	0
46.85	0	47.37	0	47.89	0
46.86	0	47.38	0	47.90	0
46.87	0	47.39	0	47.91	0
46.88	0	47.40	0	47.92	0
46.89	0	47.41	0	47.93	0
46.90	0	47.42	0	47.94	0
46.91	0	47.43	0	47.95	0
46.92	0	47.44	0	47.96	0
46.93	0	47.45	0	47.97	0
46.94	0	47.46	0	47.98	0
46.95	0	47.47	0	47.99	0
46.96	0	47.48	0	48.00	0
46.97	0	47.49	0	48.01	0
46.98	0	47.50	0	48.02	0
46.99	0	47.51	0	48.03	0
47.00	0	47.52	0	48.04	0
47.01	0	47.53	0	48.05	0
47.02	0	47.54	0	48.06	0
47.03	0	47.55	0	48.07	0
47.04	0	47.56	0	48.08	0
47.05	0	47.57	0	48.09	0
47.06	0	47.58	0	48.10	0
47.07	0	47.59	0	48.11	0
47.08	0	47.60	0	48.12	0
47.09	0	47.61	0	48.13	0
47.10	0	47.62	0	48.14	0
47.11	0	47.63	0	48.15	0
47.12	0	47.64	0	48.16	0
47.13	0	47.65	0	48.17	0
47.14	0	47.66	0	48.18	0
47.15	0	47.67	0	48.19	0
47.16	0	47.68	0	48.20	0
47.17	0	47.69	0	48.21	0
47.18	0	47.70	0	48.22	0
47.19	0	47.71	0	48.23	0
47.20	0	47.72	0	48.24	0
47.21	0	47.73	0	48.25	0
47.22	0	47.74	0	48.26	0
47.23	0	47.75	0	48.27	0
47.24	0	47.76	0	48.28	0
47.25	0	47.77	0	48.29	0
47.26	0	47.78	0	48.30	0
47.27	0	47.79	0	48.31	0
47.28	0	47.80	0	48.32	0
47.29	0	47.81	0	48.33	0
47.30	0	47.82	0		
47.31	0	47.83	0		
47.32	0	47.84	0		
47.33	0	47.85	0		
47.34	0	47.86	0		

Summary for Pond 6R: MH-103 to FES-101

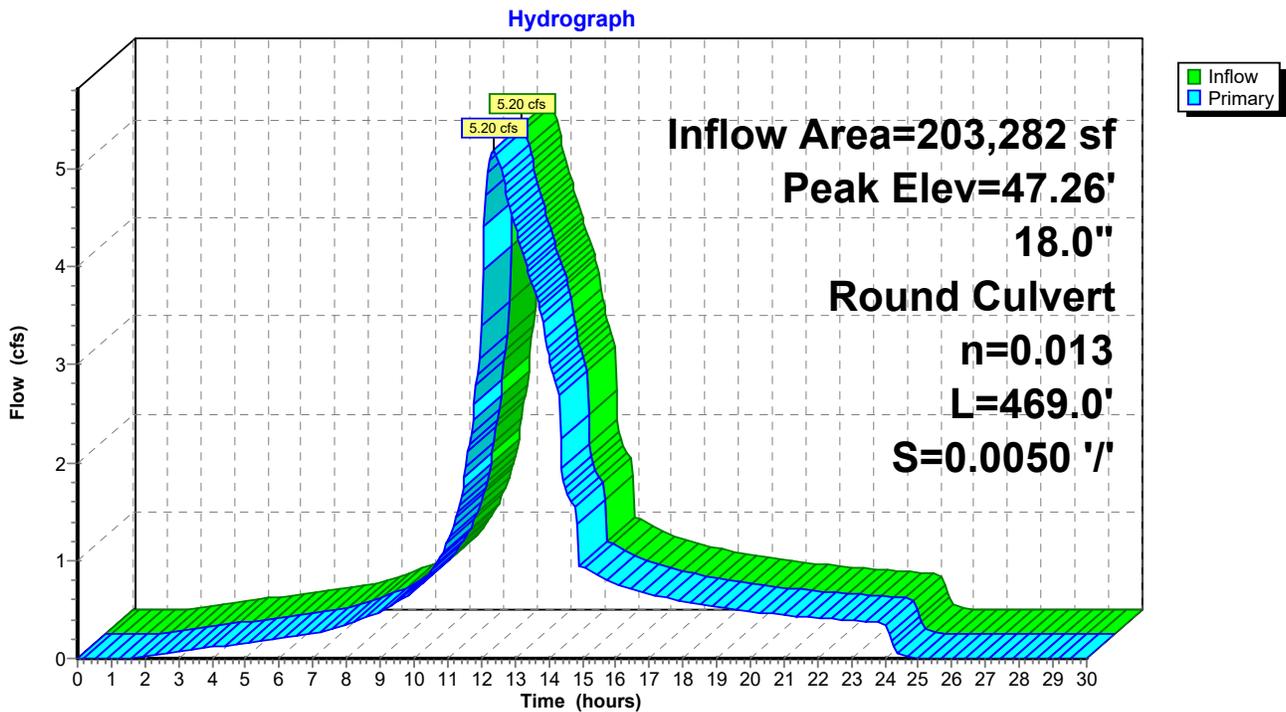
Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 4.35" for Custom event
 Inflow = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf
 Outflow = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf
 Routed to Pond P-109 : SWMB P-109

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 47.26' @ 12.37 hrs

Device #	Routing	Invert	Outlet Devices
#1	Primary	46.00'	18.0" Round Culvert L= 469.0' Ke= 0.500 Inlet / Outlet Invert= 46.00' / 43.65' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=5.19 cfs @ 12.37 hrs HW=47.26' (Free Discharge)
 ↑1=Culvert (Barrel Controls 5.19 cfs @ 4.43 fps)

Pond 6R: MH-103 to FES-101



Stage-Discharge for Pond 6R: MH-103 to FES-101

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
46.00	0.00	46.52	1.08	47.04	3.85
46.01	0.00	46.53	1.12	47.05	3.91
46.02	0.00	46.54	1.16	47.06	3.97
46.03	0.00	46.55	1.21	47.07	4.03
46.04	0.00	46.56	1.25	47.08	4.09
46.05	0.01	46.57	1.29	47.09	4.15
46.06	0.01	46.58	1.34	47.10	4.21
46.07	0.02	46.59	1.38	47.11	4.28
46.08	0.02	46.60	1.43	47.12	4.34
46.09	0.03	46.61	1.47	47.13	4.40
46.10	0.04	46.62	1.52	47.14	4.46
46.11	0.04	46.63	1.57	47.15	4.52
46.12	0.05	46.64	1.61	47.16	4.59
46.13	0.06	46.65	1.66	47.17	4.65
46.14	0.07	46.66	1.71	47.18	4.71
46.15	0.08	46.67	1.76	47.19	4.77
46.16	0.10	46.68	1.81	47.20	4.83
46.17	0.11	46.69	1.86	47.21	4.89
46.18	0.12	46.70	1.91	47.22	4.96
46.19	0.14	46.71	1.96	47.23	5.02
46.20	0.15	46.72	2.01	47.24	5.08
46.21	0.17	46.73	2.06	47.25	5.14
46.22	0.19	46.74	2.11	47.26	5.20
46.23	0.21	46.75	2.17	47.27	5.26
46.24	0.23	46.76	2.22	47.28	5.32
46.25	0.25	46.77	2.27	47.29	5.38
46.26	0.27	46.78	2.33	47.30	5.44
46.27	0.29	46.79	2.38	47.31	5.50
46.28	0.31	46.80	2.44	47.32	5.56
46.29	0.33	46.81	2.49	47.33	5.62
46.30	0.36	46.82	2.55	47.34	5.68
46.31	0.38	46.83	2.60	47.35	5.74
46.32	0.41	46.84	2.66	47.36	5.80
46.33	0.44	46.85	2.72	47.37	5.86
46.34	0.46	46.86	2.77	47.38	5.92
46.35	0.49	46.87	2.83	47.39	5.98
46.36	0.52	46.88	2.89	47.40	6.03
46.37	0.55	46.89	2.95	47.41	6.09
46.38	0.58	46.90	3.01	47.42	6.15
46.39	0.61	46.91	3.06	47.43	6.20
46.40	0.64	46.92	3.12	47.44	6.26
46.41	0.68	46.93	3.18	47.45	6.32
46.42	0.71	46.94	3.24	47.46	6.37
46.43	0.74	46.95	3.30	47.47	6.43
46.44	0.78	46.96	3.36	47.48	6.48
46.45	0.81	46.97	3.42	47.49	6.53
46.46	0.85	46.98	3.48	47.50	6.59
46.47	0.89	46.99	3.54		
46.48	0.92	47.00	3.60		
46.49	0.96	47.01	3.66		
46.50	1.00	47.02	3.72		
46.51	1.04	47.03	3.78		

Stage-Area-Storage for Pond 6R: MH-103 to FES-101

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
46.00	0	46.52	0	47.04	0
46.01	0	46.53	0	47.05	0
46.02	0	46.54	0	47.06	0
46.03	0	46.55	0	47.07	0
46.04	0	46.56	0	47.08	0
46.05	0	46.57	0	47.09	0
46.06	0	46.58	0	47.10	0
46.07	0	46.59	0	47.11	0
46.08	0	46.60	0	47.12	0
46.09	0	46.61	0	47.13	0
46.10	0	46.62	0	47.14	0
46.11	0	46.63	0	47.15	0
46.12	0	46.64	0	47.16	0
46.13	0	46.65	0	47.17	0
46.14	0	46.66	0	47.18	0
46.15	0	46.67	0	47.19	0
46.16	0	46.68	0	47.20	0
46.17	0	46.69	0	47.21	0
46.18	0	46.70	0	47.22	0
46.19	0	46.71	0	47.23	0
46.20	0	46.72	0	47.24	0
46.21	0	46.73	0	47.25	0
46.22	0	46.74	0	47.26	0
46.23	0	46.75	0	47.27	0
46.24	0	46.76	0	47.28	0
46.25	0	46.77	0	47.29	0
46.26	0	46.78	0	47.30	0
46.27	0	46.79	0	47.31	0
46.28	0	46.80	0	47.32	0
46.29	0	46.81	0	47.33	0
46.30	0	46.82	0	47.34	0
46.31	0	46.83	0	47.35	0
46.32	0	46.84	0	47.36	0
46.33	0	46.85	0	47.37	0
46.34	0	46.86	0	47.38	0
46.35	0	46.87	0	47.39	0
46.36	0	46.88	0	47.40	0
46.37	0	46.89	0	47.41	0
46.38	0	46.90	0	47.42	0
46.39	0	46.91	0	47.43	0
46.40	0	46.92	0	47.44	0
46.41	0	46.93	0	47.45	0
46.42	0	46.94	0	47.46	0
46.43	0	46.95	0	47.47	0
46.44	0	46.96	0	47.48	0
46.45	0	46.97	0	47.49	0
46.46	0	46.98	0	47.50	0
46.47	0	46.99	0		
46.48	0	47.00	0		
46.49	0	47.01	0		
46.50	0	47.02	0		
46.51	0	47.03	0		

Summary for Pond P-101: SWMB P-101

Inflow Area = 98,017 sf, 42.31% Impervious, Inflow Depth = 3.17" for Custom event
 Inflow = 5.23 cfs @ 12.24 hrs, Volume= 25,926 cf
 Outflow = 1.74 cfs @ 12.74 hrs, Volume= 25,926 cf, Atten= 67%, Lag= 30.0 min
 Primary = 0.00 cfs @ 12.74 hrs, Volume= 0 cf
 Routed to Pond 4R : MH-101 to MH-102
 Secondary = 1.74 cfs @ 12.74 hrs, Volume= 25,926 cf
 Routed to Pond 4R : MH-101 to MH-102

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 48.51' @ 12.74 hrs Surf.Area= 8,124 sf Storage= 5,455 cf

Plug-Flow detention time= 20.3 min calculated for 25,883 cf (100% of inflow)
 Center-of-Mass det. time= 20.2 min (887.4 - 867.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.40'	5,666 cf	84.83'W x 95.76'L x 2.33'H Field A 18,955 cf Overall - 4,791 cf Embedded = 14,164 cf x 40.0% Voids
#2A	47.90'	4,791 cf	ADS_StormTech SC-310 +Cap x 325 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 325 Chambers in 25 Rows
		10,457 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.10'	4.0' long x 0.73' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.40'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.10'

Primary OutFlow Max=0.00 cfs @ 12.74 hrs HW=48.51' (Free Discharge)
 ↑1=Low Level Orifice (Orifice Controls 0.00 cfs @ 0.31 fps)
 ↓2=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=1.74 cfs @ 12.74 hrs HW=48.51' (Free Discharge)
 ↑3=Underdrain (Controls 1.74 cfs)

Pond P-101: SWMB P-101 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

25 Rows x 34.0" Wide + 6.0" Spacing x 24 + 12.0" Side Stone x 2 = 84.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

325 Chambers x 14.7 cf = 4,791.1 cf Chamber Storage

18,955.2 cf Field - 4,791.1 cf Chambers = 14,164.0 cf Stone x 40.0% Voids = 5,665.6 cf Stone Storage

Chamber Storage + Stone Storage = 10,456.7 cf = 0.240 af

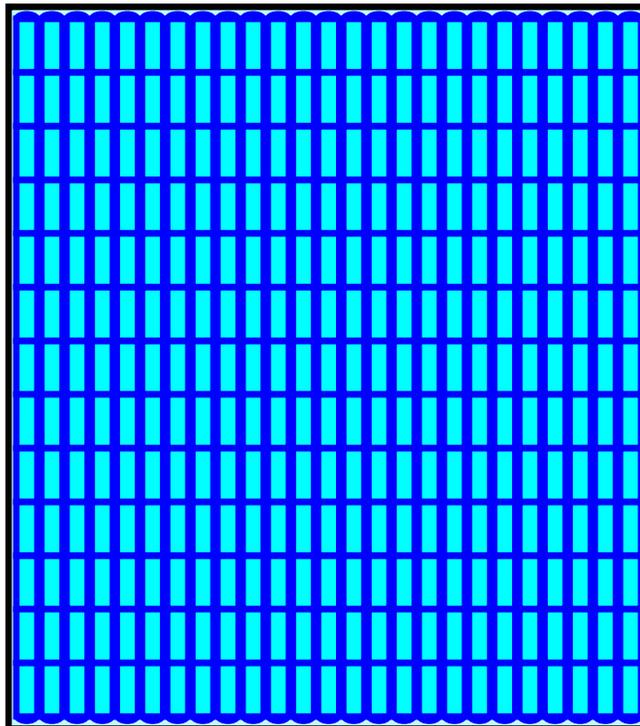
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 84.83' x 2.33'

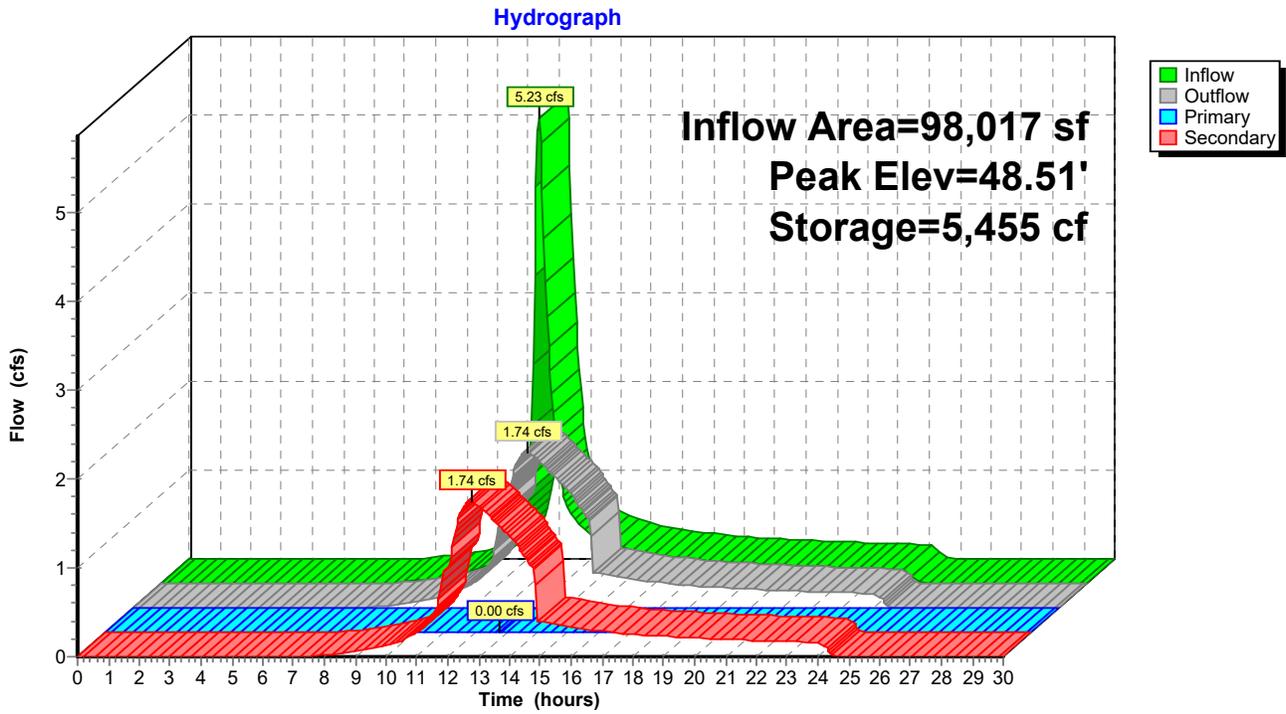
325 Chambers

702.0 cy Field

524.6 cy Stone



Pond P-101: SWMB P-101



Stage-Discharge for Pond P-101: SWMB P-101

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.40	0.00	0.00	0.00
47.45	0.98	0.00	0.98
47.50	1.01	0.00	1.01
47.55	1.05	0.00	1.05
47.60	1.08	0.00	1.08
47.65	1.12	0.00	1.12
47.70	1.16	0.00	1.16
47.75	1.19	0.00	1.19
47.80	1.23	0.00	1.23
47.85	1.27	0.00	1.27
47.90	1.30	0.00	1.30
47.95	1.34	0.00	1.34
48.00	1.37	0.00	1.37
48.05	1.41	0.00	1.41
48.10	1.45	0.00	1.45
48.15	1.48	0.00	1.48
48.20	1.52	0.00	1.52
48.25	1.56	0.00	1.56
48.30	1.59	0.00	1.59
48.35	1.63	0.00	1.63
48.40	1.66	0.00	1.66
48.45	1.70	0.00	1.70
48.50	1.74	0.00	1.74
48.55	1.78	0.01	1.77
48.60	1.84	0.03	1.81
48.65	1.91	0.07	1.84
48.70	1.99	0.11	1.88
48.75	2.08	0.17	1.92
48.80	2.18	0.23	1.95
48.85	2.28	0.30	1.99
48.90	2.39	0.36	2.03
48.95	2.49	0.43	2.06
49.00	2.57	0.47	2.10
49.05	2.65	0.52	2.13
49.10	2.73	0.56	2.17
49.15	2.95	0.74	2.21
49.20	3.29	1.05	2.24
49.25	3.71	1.44	2.28
49.30	4.20	1.89	2.31
49.35	4.74	2.39	2.35
49.40	5.34	2.95	2.39
49.45	5.98	3.56	2.42
49.50	6.66	4.21	2.46
49.55	7.39	4.90	2.50
49.60	8.16	5.63	2.53
49.65	8.97	6.40	2.57
49.70	9.82	7.21	2.60
49.75	10.70	8.06	2.64
49.80	11.61	8.94	2.68

Stage-Area-Storage for Pond P-101: SWMB P-101

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.40	8,124	0
47.45	8,124	162
47.50	8,124	325
47.55	8,124	487
47.60	8,124	650
47.65	8,124	812
47.70	8,124	975
47.75	8,124	1,137
47.80	8,124	1,300
47.85	8,124	1,462
47.90	8,124	1,625
47.95	8,124	1,954
48.00	8,124	2,282
48.05	8,124	2,609
48.10	8,124	2,933
48.15	8,124	3,254
48.20	8,124	3,572
48.25	8,124	3,887
48.30	8,124	4,199
48.35	8,124	4,506
48.40	8,124	4,810
48.45	8,124	5,109
48.50	8,124	5,403
48.55	8,124	5,694
48.60	8,124	5,979
48.65	8,124	6,258
48.70	8,124	6,531
48.75	8,124	6,797
48.80	8,124	7,055
48.85	8,124	7,306
48.90	8,124	7,546
48.95	8,124	7,774
49.00	8,124	7,987
49.05	8,124	8,185
49.10	8,124	8,372
49.15	8,124	8,550
49.20	8,124	8,722
49.25	8,124	8,886
49.30	8,124	9,049
49.35	8,124	9,211
49.40	8,124	9,374
49.45	8,124	9,536
49.50	8,124	9,699
49.55	8,124	9,861
49.60	8,124	10,023
49.65	8,124	10,186
49.70	8,124	10,348
49.75	8,124	10,457
49.80	8,124	10,457

Summary for Pond P-102: SWMB P-102

Inflow Area = 87,844 sf, 85.77% Impervious, Inflow Depth = 5.40" for Custom event
 Inflow = 12.19 cfs @ 12.05 hrs, Volume= 39,528 cf
 Outflow = 2.76 cfs @ 12.37 hrs, Volume= 39,525 cf, Atten= 77%, Lag= 19.2 min
 Primary = 0.09 cfs @ 12.37 hrs, Volume= 133 cf
 Routed to Pond 3R : OCS-102 to MH-101
 Secondary = 2.67 cfs @ 12.37 hrs, Volume= 39,392 cf
 Routed to Pond 3R : OCS-102 to MH-101

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 48.71' @ 12.37 hrs Surf.Area= 10,996 sf Storage= 8,164 cf

Plug-Flow detention time= 18.5 min calculated for 39,525 cf (100% of inflow)
 Center-of-Mass det. time= 18.4 min (797.3 - 778.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	47.50'	7,657 cf	114.83'W x 95.76'L x 2.33'H Field A 25,658 cf Overall - 6,516 cf Embedded = 19,142 cf x 40.0% Voids
#2A	48.00'	6,516 cf	ADS_StormTech SC-310 +Cap x 442 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 442 Chambers in 34 Rows
		14,173 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	4.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	49.15'	4.0' long x 3.90' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	47.50'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.40'

Primary OutFlow Max=0.09 cfs @ 12.37 hrs HW=48.71' (Free Discharge)
 ↑1=Low Level Orifice (Orifice Controls 0.09 cfs @ 1.55 fps)
 ↓2=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=2.67 cfs @ 12.37 hrs HW=48.71' (Free Discharge)
 ↑3=Underdrain (Controls 2.67 cfs)

Pond P-102: SWMB P-102 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

34 Rows x 34.0" Wide + 6.0" Spacing x 33 + 12.0" Side Stone x 2 = 114.83' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

442 Chambers x 14.7 cf = 6,515.9 cf Chamber Storage

25,658.4 cf Field - 6,515.9 cf Chambers = 19,142.4 cf Stone x 40.0% Voids = 7,657.0 cf Stone Storage

Chamber Storage + Stone Storage = 14,172.9 cf = 0.325 af

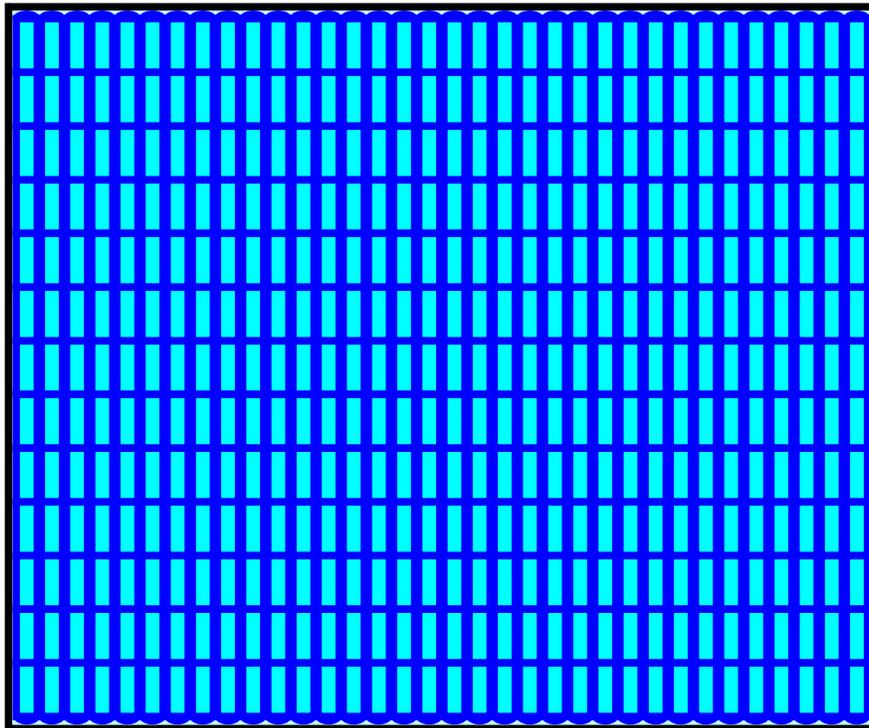
Overall Storage Efficiency = 55.2%

Overall System Size = 95.76' x 114.83' x 2.33'

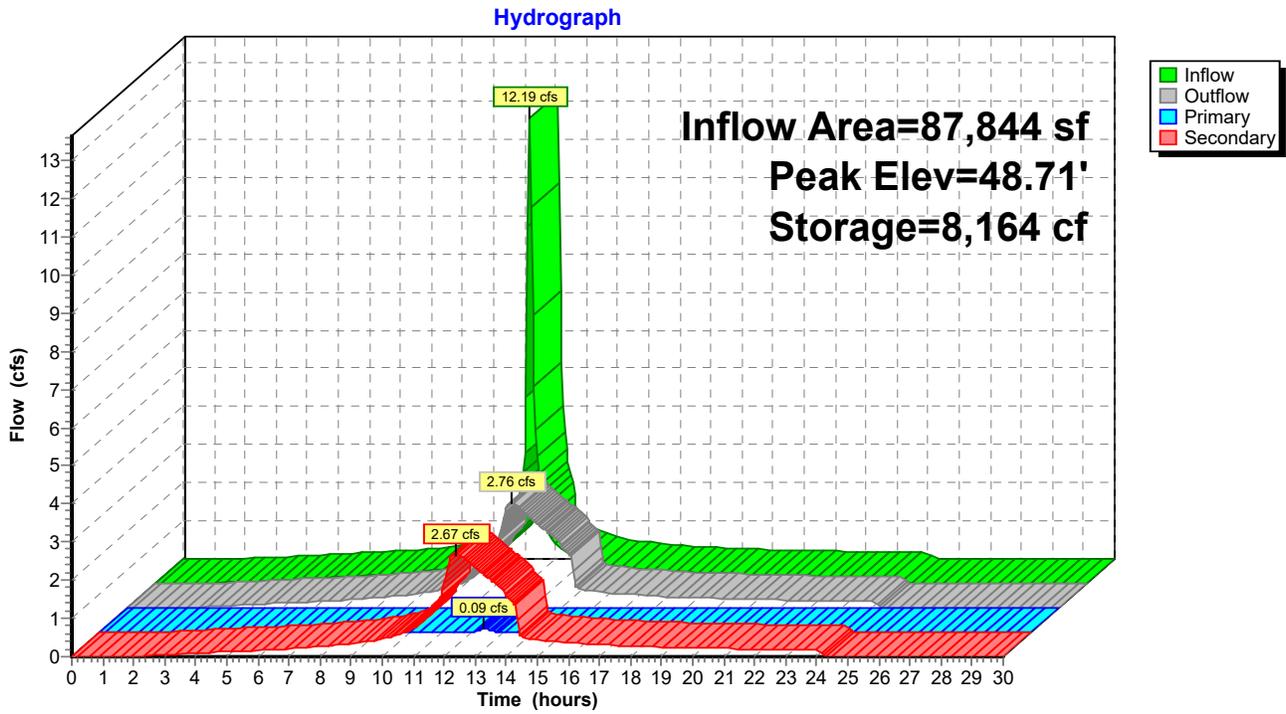
442 Chambers

950.3 cy Field

709.0 cy Stone



Pond P-102: SWMB P-102



Stage-Discharge for Pond P-102: SWMB P-102

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
47.50	0.00	0.00	0.00	52.70	108.50	101.21	7.29
47.60	1.39	0.00	1.39	52.80	113.09	105.68	7.41
47.70	1.50	0.00	1.50	52.90	117.74	110.22	7.52
47.80	1.62	0.00	1.62	53.00	122.46	114.82	7.64
47.90	1.74	0.00	1.74				
48.00	1.85	0.00	1.85				
48.10	1.97	0.00	1.97				
48.20	2.08	0.00	2.08				
48.30	2.20	0.00	2.20				
48.40	2.31	0.00	2.31				
48.50	2.43	0.00	2.43				
48.60	2.57	0.02	2.55				
48.70	2.74	0.08	2.66				
48.80	2.93	0.15	2.78				
48.90	3.10	0.20	2.89				
49.00	3.25	0.24	3.01				
49.10	3.40	0.28	3.12				
49.20	3.69	0.45	3.24				
49.30	4.46	1.10	3.36				
49.40	5.49	2.02	3.47				
49.50	6.73	3.15	3.59				
49.60	8.16	4.46	3.70				
49.70	9.75	5.93	3.82				
49.80	11.49	7.56	3.93				
49.90	13.38	9.33	4.05				
50.00	15.39	11.23	4.17				
50.10	17.54	13.26	4.28				
50.20	19.81	15.41	4.40				
50.30	22.20	17.68	4.51				
50.40	24.70	20.07	4.63				
50.50	27.32	22.57	4.74				
50.60	30.04	25.18	4.86				
50.70	32.87	27.90	4.98				
50.80	35.81	30.72	5.09				
50.90	38.84	33.64	5.21				
51.00	41.98	36.65	5.32				
51.10	45.21	39.77	5.44				
51.20	48.53	42.98	5.55				
51.30	51.95	46.28	5.67				
51.40	55.46	49.68	5.79				
51.50	59.06	53.16	5.90				
51.60	62.74	56.73	6.02				
51.70	66.51	60.38	6.13				
51.80	70.37	64.12	6.25				
51.90	74.30	67.94	6.36				
52.00	78.31	71.83	6.48				
52.10	82.41	75.81	6.60				
52.20	86.57	79.86	6.71				
52.30	90.82	83.99	6.83				
52.40	95.13	88.19	6.94				
52.50	99.52	92.46	7.06				
52.60	103.98	96.80	7.17				

Stage-Area-Storage for Pond P-102: SWMB P-102

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
47.50	10,996	0	52.70	10,996	14,173
47.60	10,996	440	52.80	10,996	14,173
47.70	10,996	880	52.90	10,996	14,173
47.80	10,996	1,320	53.00	10,996	14,173
47.90	10,996	1,759			
48.00	10,996	2,199			
48.10	10,996	3,092			
48.20	10,996	3,974			
48.30	10,996	4,842			
48.40	10,996	5,692			
48.50	10,996	6,520			
48.60	10,996	7,326			
48.70	10,996	8,106			
48.80	10,996	8,855			
48.90	10,996	9,566			
49.00	10,996	10,232			
49.10	10,996	10,829			
49.20	10,996	11,350			
49.30	10,996	11,824			
49.40	10,996	12,267			
49.50	10,996	12,707			
49.60	10,996	13,147			
49.70	10,996	13,586			
49.80	10,996	14,026			
49.90	10,996	14,173			
50.00	10,996	14,173			
50.10	10,996	14,173			
50.20	10,996	14,173			
50.30	10,996	14,173			
50.40	10,996	14,173			
50.50	10,996	14,173			
50.60	10,996	14,173			
50.70	10,996	14,173			
50.80	10,996	14,173			
50.90	10,996	14,173			
51.00	10,996	14,173			
51.10	10,996	14,173			
51.20	10,996	14,173			
51.30	10,996	14,173			
51.40	10,996	14,173			
51.50	10,996	14,173			
51.60	10,996	14,173			
51.70	10,996	14,173			
51.80	10,996	14,173			
51.90	10,996	14,173			
52.00	10,996	14,173			
52.10	10,996	14,173			
52.20	10,996	14,173			
52.30	10,996	14,173			
52.40	10,996	14,173			
52.50	10,996	14,173			
52.60	10,996	14,173			

Summary for Pond P-103: SWMB P-103

Inflow Area = 24,111 sf, 91.05% Impervious, Inflow Depth = 5.63" for Custom event
 Inflow = 3.72 cfs @ 12.02 hrs, Volume= 11,312 cf
 Outflow = 1.68 cfs @ 12.14 hrs, Volume= 11,312 cf, Atten= 55%, Lag= 7.3 min
 Primary = 1.34 cfs @ 12.14 hrs, Volume= 2,762 cf
 Routed to Reach 2R : 18" HDPE
 Secondary = 0.34 cfs @ 12.14 hrs, Volume= 8,550 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 51.27' @ 12.14 hrs Surf.Area= 2,096 sf Storage= 1,882 cf

Plug-Flow detention time= 12.6 min calculated for 11,293 cf (100% of inflow)
 Center-of-Mass det. time= 12.6 min (778.2 - 765.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.80'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	50.30'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	50.30'	8.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	51.40'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	49.80'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 46.00'

Primary OutFlow Max=1.34 cfs @ 12.14 hrs HW=51.27' (Free Discharge)
 ↑1=Low Level Orifice (Orifice Controls 1.34 cfs @ 3.84 fps)
 ↓2=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.34 cfs @ 12.14 hrs HW=51.27' (Free Discharge)
 ↑3=Underdrain (Controls 0.34 cfs)

Pond P-103: SWMB P-103 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

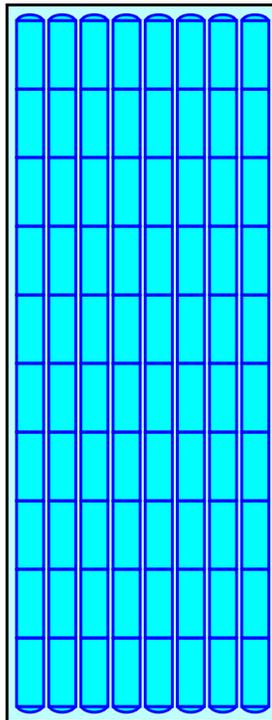
Overall Storage Efficiency = 54.5%

Overall System Size = 74.40' x 28.17' x 2.33'

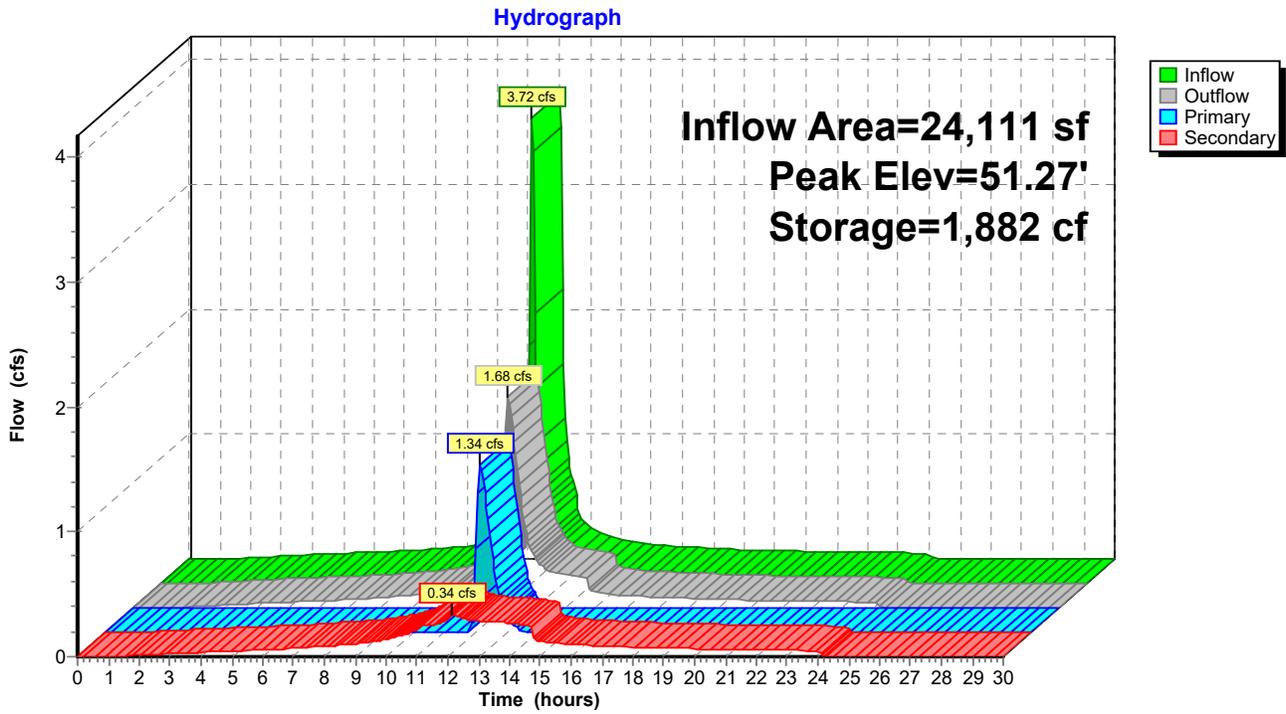
80 Chambers

181.1 cy Field

137.4 cy Stone



Pond P-103: SWMB P-103



Stage-Discharge for Pond P-103: SWMB P-103

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
49.80	0.00	0.00	0.00	52.40	16.45	16.04	0.41
49.85	0.25	0.00	0.25	52.45	17.57	17.16	0.41
49.90	0.25	0.00	0.25	52.50	18.72	18.30	0.41
49.95	0.25	0.00	0.25	52.55	19.89	19.47	0.42
50.00	0.26	0.00	0.26	52.60	21.10	20.68	0.42
50.05	0.26	0.00	0.26	52.65	22.33	21.91	0.42
50.10	0.26	0.00	0.26	52.70	23.59	23.16	0.43
50.15	0.26	0.00	0.26	52.75	24.88	24.45	0.43
50.20	0.27	0.00	0.27	52.80	26.20	25.76	0.43
50.25	0.27	0.00	0.27	52.85	27.54	27.10	0.44
50.30	0.27	0.00	0.27	52.90	28.91	28.47	0.44
50.35	0.29	0.01	0.28	52.95	30.30	29.86	0.44
50.40	0.32	0.04	0.28	53.00	31.72	31.27	0.45
50.45	0.36	0.08	0.28	53.05	33.17	32.72	0.45
50.50	0.42	0.13	0.29	53.10	34.64	34.18	0.45
50.55	0.49	0.20	0.29	53.15	36.13	35.67	0.46
50.60	0.58	0.28	0.29	53.20	37.65	37.19	0.46
50.65	0.67	0.37	0.30	53.25	39.19	38.73	0.46
50.70	0.77	0.47	0.30	53.30	40.76	40.30	0.47
50.75	0.88	0.57	0.30	53.35	42.35	41.89	0.47
50.80	0.98	0.68	0.31	53.40	43.97	43.50	0.47
50.85	1.09	0.78	0.31	53.45	45.61	45.13	0.48
50.90	1.19	0.87	0.31	53.50	47.27	46.79	0.48
50.95	1.27	0.95	0.32	53.55	48.95	48.47	0.48
51.00	1.34	1.02	0.32	53.60	50.66	50.18	0.49
51.05	1.41	1.08	0.32	53.65	52.39	51.90	0.49
51.10	1.47	1.15	0.33	53.70	54.14	53.65	0.49
51.15	1.54	1.21	0.33	53.75	55.91	55.42	0.49
51.20	1.60	1.27	0.33	53.80	57.71	57.21	0.50
51.25	1.65	1.32	0.34	53.85	59.52	59.02	0.50
51.30	1.71	1.37	0.34	53.90	61.36	60.86	0.50
51.35	1.76	1.42	0.34	53.95	63.22	62.71	0.51
51.40	1.82	1.47	0.34	54.00	65.10	64.59	0.51
51.45	2.01	1.67	0.35				
51.50	2.33	1.98	0.35				
51.55	2.73	2.38	0.35				
51.60	3.19	2.84	0.36				
51.65	3.71	3.35	0.36				
51.70	4.29	3.92	0.36				
51.75	4.91	4.54	0.37				
51.80	5.57	5.20	0.37				
51.85	6.28	5.91	0.37				
51.90	7.03	6.65	0.38				
51.95	7.81	7.43	0.38				
52.00	8.64	8.25	0.38				
52.05	9.50	9.11	0.39				
52.10	10.39	10.00	0.39				
52.15	11.32	10.93	0.39				
52.20	12.28	11.89	0.40				
52.25	13.28	12.88	0.40				
52.30	14.30	13.90	0.40				
52.35	15.36	14.96	0.41				

Stage-Area-Storage for Pond P-103: SWMB P-103

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.80	2,096	0	52.40	2,096	2,664
49.85	2,096	42	52.45	2,096	2,664
49.90	2,096	84	52.50	2,096	2,664
49.95	2,096	126	52.55	2,096	2,664
50.00	2,096	168	52.60	2,096	2,664
50.05	2,096	210	52.65	2,096	2,664
50.10	2,096	251	52.70	2,096	2,664
50.15	2,096	293	52.75	2,096	2,664
50.20	2,096	335	52.80	2,096	2,664
50.25	2,096	377	52.85	2,096	2,664
50.30	2,096	419	52.90	2,096	2,664
50.35	2,096	502	52.95	2,096	2,664
50.40	2,096	585	53.00	2,096	2,664
50.45	2,096	667	53.05	2,096	2,664
50.50	2,096	749	53.10	2,096	2,664
50.55	2,096	830	53.15	2,096	2,664
50.60	2,096	910	53.20	2,096	2,664
50.65	2,096	990	53.25	2,096	2,664
50.70	2,096	1,068	53.30	2,096	2,664
50.75	2,096	1,146	53.35	2,096	2,664
50.80	2,096	1,222	53.40	2,096	2,664
50.85	2,096	1,298	53.45	2,096	2,664
50.90	2,096	1,372	53.50	2,096	2,664
50.95	2,096	1,446	53.55	2,096	2,664
51.00	2,096	1,518	53.60	2,096	2,664
51.05	2,096	1,588	53.65	2,096	2,664
51.10	2,096	1,657	53.70	2,096	2,664
51.15	2,096	1,725	53.75	2,096	2,664
51.20	2,096	1,790	53.80	2,096	2,664
51.25	2,096	1,854	53.85	2,096	2,664
51.30	2,096	1,915	53.90	2,096	2,664
51.35	2,096	1,973	53.95	2,096	2,664
51.40	2,096	2,027	54.00	2,096	2,664
51.45	2,096	2,078			
51.50	2,096	2,126			
51.55	2,096	2,172			
51.60	2,096	2,216			
51.65	2,096	2,258			
51.70	2,096	2,300			
51.75	2,096	2,342			
51.80	2,096	2,384			
51.85	2,096	2,426			
51.90	2,096	2,468			
51.95	2,096	2,510			
52.00	2,096	2,552			
52.05	2,096	2,594			
52.10	2,096	2,636			
52.15	2,096	2,664			
52.20	2,096	2,664			
52.25	2,096	2,664			
52.30	2,096	2,664			
52.35	2,096	2,664			

Summary for Pond P-104: P-104

Inflow Area = 17,421 sf, 91.84% Impervious, Inflow Depth = 5.63" for Custom event
 Inflow = 2.69 cfs @ 12.02 hrs, Volume= 8,174 cf
 Outflow = 1.02 cfs @ 12.17 hrs, Volume= 8,174 cf, Atten= 62%, Lag= 8.9 min
 Primary = 0.55 cfs @ 12.17 hrs, Volume= 1,015 cf
 Routed to Pond 5R : MH-102 to MH-103
 Secondary = 0.47 cfs @ 12.17 hrs, Volume= 7,159 cf
 Routed to Pond 5R : MH-102 to MH-103

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 49.76' @ 12.17 hrs Surf.Area= 2,096 sf Storage= 1,351 cf

Plug-Flow detention time= 10.7 min calculated for 8,160 cf (100% of inflow)
 Center-of-Mass det. time= 10.7 min (776.3 - 765.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	48.67'	1,484 cf	28.17'W x 74.40'L x 2.33'H Field A 4,890 cf Overall - 1,179 cf Embedded = 3,710 cf x 40.0% Voids
#2A	49.17'	1,179 cf	ADS_StormTech SC-310 +Cap x 80 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 80 Chambers in 8 Rows
		2,664 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	49.17'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	50.25'	4.0' long x 2.60' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.1' Crest Height
#3	Secondary	48.67'	5.000 in/hr Underdrain over Surface area Conductivity to Groundwater Elevation = 47.50'

Primary OutFlow Max=0.54 cfs @ 12.17 hrs HW=49.75' (Free Discharge)
 ↑1=Low Level Orifice (Orifice Controls 0.54 cfs @ 2.77 fps)
 ↓2=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.47 cfs @ 12.17 hrs HW=49.75' (Free Discharge)
 ↑3=Underdrain (Controls 0.47 cfs)

Pond P-104: P-104 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +12.0" End Stone x 2 = 74.40' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

80 Chambers x 14.7 cf = 1,179.4 cf Chamber Storage

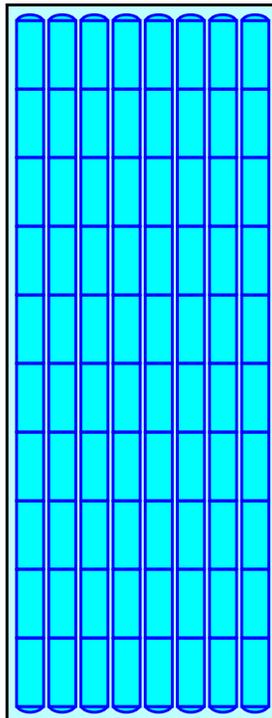
4,889.7 cf Field - 1,179.4 cf Chambers = 3,710.4 cf Stone x 40.0% Voids = 1,484.2 cf Stone Storage

Chamber Storage + Stone Storage = 2,663.5 cf = 0.061 af

Overall Storage Efficiency = 54.5%

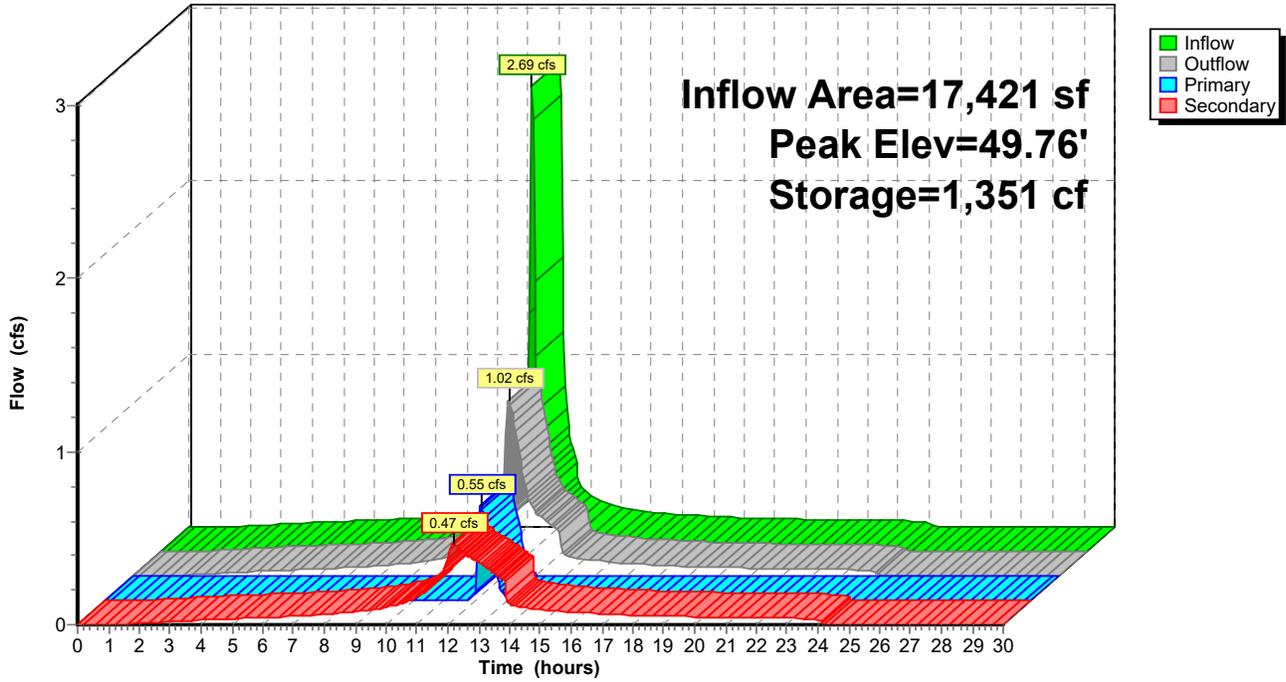
Overall System Size = 74.40' x 28.17' x 2.33'

80 Chambers
181.1 cy Field
137.4 cy Stone



Pond P-104: P-104

Hydrograph



Stage-Discharge for Pond P-104: P-104

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
48.67	0.00	0.00	0.00	51.27	16.31	15.52	0.78
48.72	0.25	0.00	0.25	51.32	17.43	16.64	0.79
48.77	0.26	0.00	0.26	51.37	18.58	17.78	0.80
48.82	0.27	0.00	0.27	51.42	19.76	18.95	0.81
48.87	0.28	0.00	0.28	51.47	20.97	20.15	0.82
48.92	0.29	0.00	0.29	51.52	22.21	21.38	0.83
48.97	0.30	0.00	0.30	51.57	23.48	22.63	0.84
49.02	0.32	0.00	0.32	51.62	24.77	23.92	0.85
49.07	0.33	0.00	0.33	51.67	26.09	25.23	0.86
49.12	0.34	0.00	0.34	51.72	27.44	26.56	0.87
49.17	0.35	0.00	0.35	51.77	28.81	27.93	0.89
49.22	0.36	0.01	0.36	51.82	30.21	29.32	0.90
49.27	0.40	0.03	0.37	51.87	31.64	30.73	0.91
49.32	0.44	0.07	0.38	51.92	33.09	32.17	0.92
49.37	0.50	0.11	0.39	51.97	34.56	33.64	0.93
49.42	0.57	0.17	0.40	52.02	36.06	35.13	0.94
49.47	0.64	0.23	0.41	52.07	37.59	36.64	0.95
49.52	0.71	0.30	0.42	52.12	39.14	38.18	0.96
49.57	0.79	0.36	0.43	52.17	40.71	39.74	0.97
49.62	0.86	0.43	0.44	52.22	42.31	41.33	0.98
49.67	0.92	0.47	0.45	52.27	43.93	42.94	0.99
49.72	0.98	0.52	0.46	52.32	45.57	44.57	1.00
49.77	1.03	0.56	0.47	52.37	47.24	46.23	1.01
49.82	1.08	0.60	0.48	52.42	48.93	47.91	1.02
49.87	1.13	0.63	0.49	52.47	50.64	49.61	1.03
49.92	1.17	0.67	0.50	52.52	52.37	51.33	1.04
49.97	1.21	0.70	0.51	52.57	54.13	53.08	1.05
50.02	1.25	0.73	0.52	52.62	55.91	54.85	1.06
50.07	1.29	0.76	0.53	52.67	57.71	56.64	1.07
50.12	1.33	0.79	0.54	52.72	59.53	58.45	1.08
50.17	1.37	0.82	0.55	52.77	61.37	60.28	1.09
50.22	1.41	0.85	0.56	52.82	63.23	62.13	1.10
50.27	1.48	0.91	0.57				
50.32	1.72	1.14	0.58				
50.37	2.06	1.47	0.59				
50.42	2.48	1.87	0.61				
50.47	2.95	2.34	0.62				
50.52	3.48	2.86	0.63				
50.57	4.06	3.43	0.64				
50.62	4.69	4.04	0.65				
50.67	5.36	4.71	0.66				
50.72	6.08	5.41	0.67				
50.77	6.83	6.15	0.68				
50.82	7.62	6.93	0.69				
50.87	8.45	7.75	0.70				
50.92	9.32	8.61	0.71				
50.97	10.22	9.50	0.72				
51.02	11.15	10.42	0.73				
51.07	12.12	11.38	0.74				
51.12	13.12	12.37	0.75				
51.17	14.15	13.39	0.76				
51.22	15.21	14.44	0.77				

Stage-Area-Storage for Pond P-104: P-104

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
48.67	2,096	0	51.27	2,096	2,664
48.72	2,096	42	51.32	2,096	2,664
48.77	2,096	84	51.37	2,096	2,664
48.82	2,096	126	51.42	2,096	2,664
48.87	2,096	168	51.47	2,096	2,664
48.92	2,096	210	51.52	2,096	2,664
48.97	2,096	251	51.57	2,096	2,664
49.02	2,096	293	51.62	2,096	2,664
49.07	2,096	335	51.67	2,096	2,664
49.12	2,096	377	51.72	2,096	2,664
49.17	2,096	419	51.77	2,096	2,664
49.22	2,096	502	51.82	2,096	2,664
49.27	2,096	585	51.87	2,096	2,664
49.32	2,096	667	51.92	2,096	2,664
49.37	2,096	749	51.97	2,096	2,664
49.42	2,096	830	52.02	2,096	2,664
49.47	2,096	910	52.07	2,096	2,664
49.52	2,096	990	52.12	2,096	2,664
49.57	2,096	1,068	52.17	2,096	2,664
49.62	2,096	1,146	52.22	2,096	2,664
49.67	2,096	1,222	52.27	2,096	2,664
49.72	2,096	1,298	52.32	2,096	2,664
49.77	2,096	1,372	52.37	2,096	2,664
49.82	2,096	1,446	52.42	2,096	2,664
49.87	2,096	1,518	52.47	2,096	2,664
49.92	2,096	1,588	52.52	2,096	2,664
49.97	2,096	1,657	52.57	2,096	2,664
50.02	2,096	1,725	52.62	2,096	2,664
50.07	2,096	1,790	52.67	2,096	2,664
50.12	2,096	1,854	52.72	2,096	2,664
50.17	2,096	1,915	52.77	2,096	2,664
50.22	2,096	1,973	52.82	2,096	2,664
50.27	2,096	2,027			
50.32	2,096	2,078			
50.37	2,096	2,126			
50.42	2,096	2,172			
50.47	2,096	2,216			
50.52	2,096	2,258			
50.57	2,096	2,300			
50.62	2,096	2,342			
50.67	2,096	2,384			
50.72	2,096	2,426			
50.77	2,096	2,468			
50.82	2,096	2,510			
50.87	2,096	2,552			
50.92	2,096	2,594			
50.97	2,096	2,636			
51.02	2,096	2,664			
51.07	2,096	2,664			
51.12	2,096	2,664			
51.17	2,096	2,664			
51.22	2,096	2,664			

Summary for Pond P-105: SWMB P-105

Inflow Area = 184,140 sf, 100.00% Impervious, Inflow Depth = 5.98" for Custom event
 Inflow = 29.00 cfs @ 12.02 hrs, Volume= 91,788 cf
 Outflow = 4.24 cfs @ 12.52 hrs, Volume= 91,788 cf, Atten= 85%, Lag= 29.9 min
 Discarded = 3.20 cfs @ 12.52 hrs, Volume= 89,861 cf
 Primary = 1.05 cfs @ 12.52 hrs, Volume= 1,927 cf
 Routed to Reach 2R : 18" HDPE

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 51.13' @ 12.52 hrs Surf.Area= 16,134 sf Storage= 24,042 cf

Plug-Flow detention time= 45.8 min calculated for 91,635 cf (100% of inflow)
 Center-of-Mass det. time= 45.7 min (790.0 - 744.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	49.00'	14,226 cf	167.75'W x 96.18'L x 3.50'H Field A 56,468 cf Overall - 20,903 cf Embedded = 35,565 cf x 40.0% Voids
#2A	49.50'	20,903 cf	ADS_StormTech SC-740 +Cap x 455 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 455 Chambers in 35 Rows
		35,129 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.00'	4.0' long x 2.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 2.5' Crest Height
#2	Primary	50.70'	6.0" Vert. 6" Low Level Orifice C= 0.600 Limited to weir flow at low heads
#3	Discarded	49.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 46.00'

Discarded OutFlow Max=3.19 cfs @ 12.52 hrs HW=51.13' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 3.19 cfs)

Primary OutFlow Max=1.04 cfs @ 12.52 hrs HW=51.13' (Free Discharge)
 ↑ **1=Sharp-Crested Rectangular Weir** (Weir Controls 0.63 cfs @ 1.20 fps)
 ↓ **2=6" Low Level Orifice** (Orifice Controls 0.40 cfs @ 2.24 fps)

Pond P-105: SWMB P-105 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-740 +Cap (ADS StormTech®SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 94.18' Row Length +12.0" End Stone x 2 = 96.18' Base Length

35 Rows x 51.0" Wide + 6.0" Spacing x 34 + 12.0" Side Stone x 2 = 167.75' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

455 Chambers x 45.9 cf = 20,902.7 cf Chamber Storage

56,467.7 cf Field - 20,902.7 cf Chambers = 35,565.0 cf Stone x 40.0% Voids = 14,226.0 cf Stone Storage

Chamber Storage + Stone Storage = 35,128.7 cf = 0.806 af

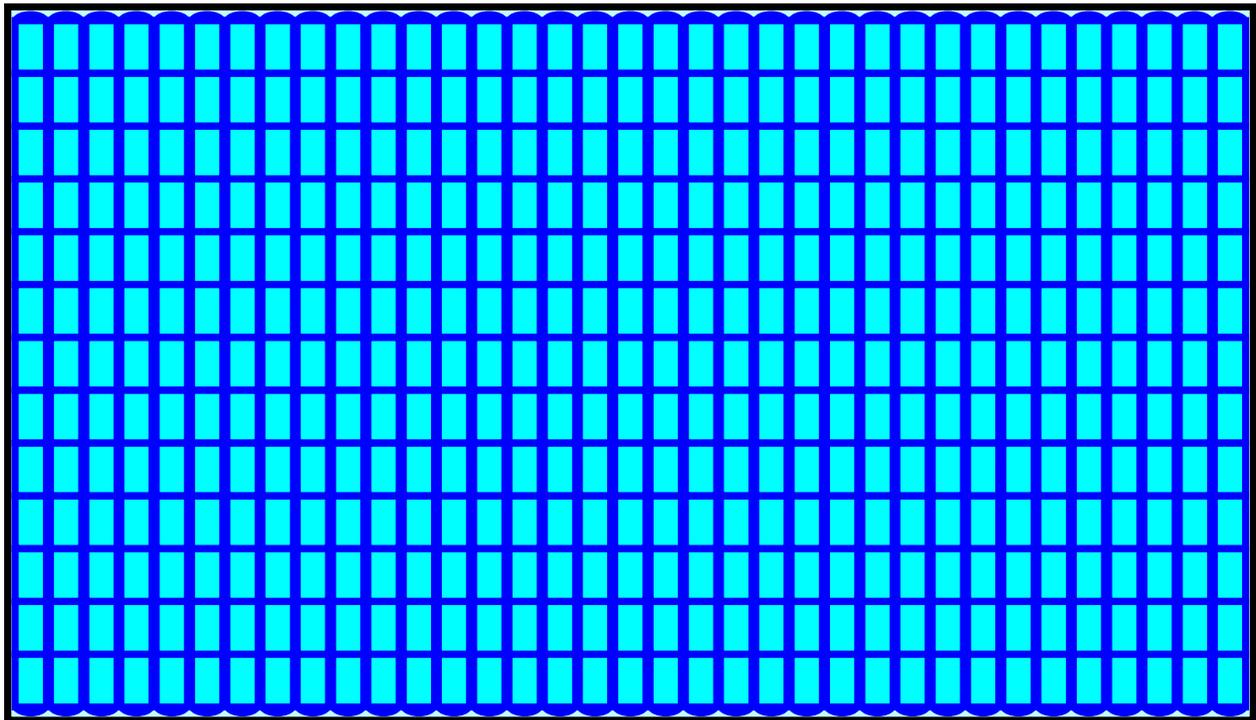
Overall Storage Efficiency = 62.2%

Overall System Size = 96.18' x 167.75' x 3.50'

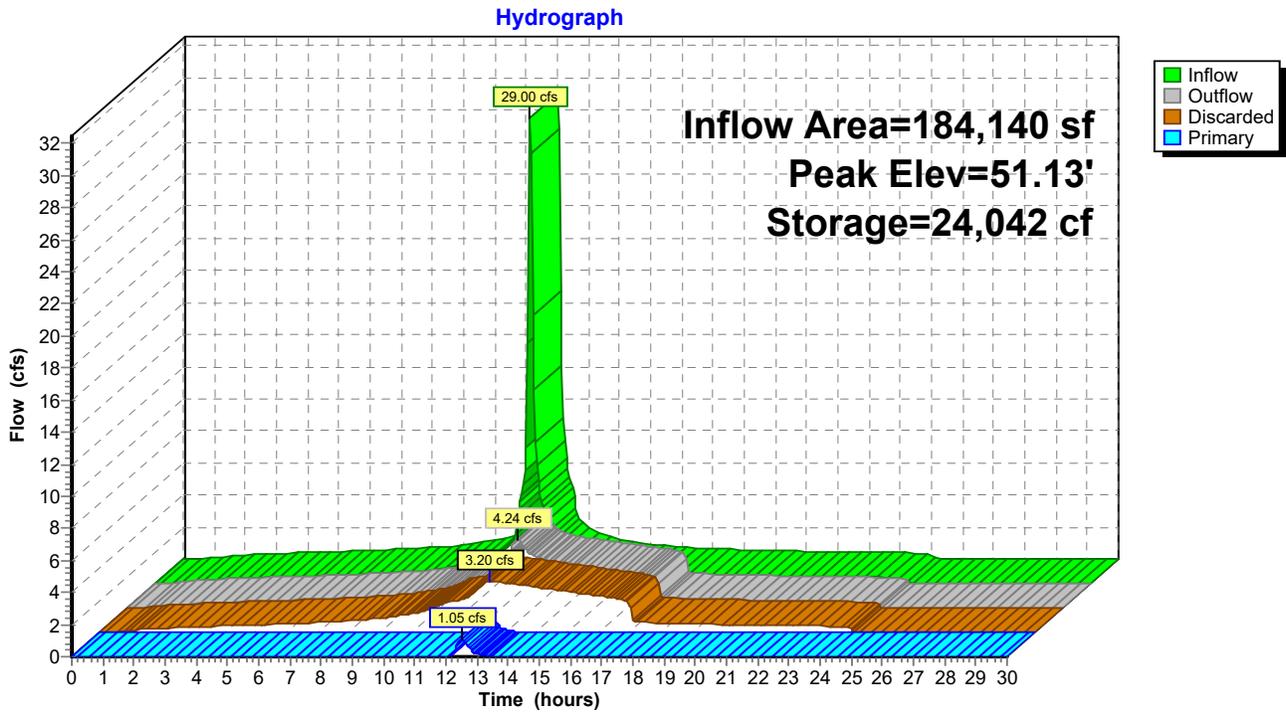
455 Chambers

2,091.4 cy Field

1,317.2 cy Stone



Pond P-105: SWMB P-105



Stage-Discharge for Pond P-105: SWMB P-105

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
49.00	0.00	0.00	0.00	51.60	10.32	3.49	6.83
49.05	1.90	1.90	0.00	51.65	11.15	3.52	7.63
49.10	1.93	1.93	0.00	51.70	12.01	3.55	8.46
49.15	1.96	1.96	0.00	51.75	12.90	3.58	9.32
49.20	1.99	1.99	0.00	51.80	13.82	3.61	10.21
49.25	2.02	2.02	0.00	51.85	14.76	3.64	11.12
49.30	2.05	2.05	0.00	51.90	15.73	3.67	12.06
49.35	2.09	2.09	0.00	51.95	16.72	3.70	13.02
49.40	2.12	2.12	0.00	52.00	17.74	3.73	14.00
49.45	2.15	2.15	0.00	52.05	18.78	3.77	15.01
49.50	2.18	2.18	0.00	52.10	19.84	3.80	16.04
49.55	2.21	2.21	0.00	52.15	20.92	3.83	17.09
49.60	2.24	2.24	0.00	52.20	22.03	3.86	18.17
49.65	2.27	2.27	0.00	52.25	23.15	3.89	19.26
49.70	2.30	2.30	0.00	52.30	24.30	3.92	20.38
49.75	2.33	2.33	0.00	52.35	25.47	3.95	21.51
49.80	2.37	2.37	0.00	52.40	26.65	3.98	22.67
49.85	2.40	2.40	0.00	52.45	27.86	4.01	23.84
49.90	2.43	2.43	0.00	52.50	29.08	4.05	25.04
49.95	2.46	2.46	0.00	52.55	30.32	4.08	26.25
50.00	2.49	2.49	0.00	52.60	31.58	4.11	27.48
50.05	2.52	2.52	0.00	52.65	32.86	4.14	28.72
50.10	2.55	2.55	0.00	52.70	34.16	4.17	29.99
50.15	2.58	2.58	0.00	52.75	35.47	4.20	31.27
50.20	2.61	2.61	0.00	52.80	36.79	4.23	32.56
50.25	2.65	2.65	0.00	52.85	38.14	4.26	33.88
50.30	2.68	2.68	0.00	52.90	39.50	4.29	35.20
50.35	2.71	2.71	0.00	52.95	40.87	4.33	36.55
50.40	2.74	2.74	0.00	53.00	42.27	4.36	37.91
50.45	2.77	2.77	0.00				
50.50	2.80	2.80	0.00				
50.55	2.83	2.83	0.00				
50.60	2.86	2.86	0.00				
50.65	2.89	2.89	0.00				
50.70	2.93	2.93	0.00				
50.75	2.96	2.96	0.01				
50.80	3.02	2.99	0.03				
50.85	3.08	3.02	0.07				
50.90	3.16	3.05	0.11				
50.95	3.25	3.08	0.17				
51.00	3.34	3.11	0.23				
51.05	3.59	3.14	0.44				
51.10	3.95	3.17	0.78				
51.15	4.39	3.21	1.18				
51.20	4.88	3.24	1.64				
51.25	5.42	3.27	2.15				
51.30	6.01	3.30	2.71				
51.35	6.63	3.33	3.30				
51.40	7.30	3.36	3.94				
51.45	8.01	3.39	4.61				
51.50	8.74	3.42	5.32				
51.55	9.51	3.45	6.06				

Stage-Area-Storage for Pond P-105: SWMB P-105

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
49.00	16,134	0	51.60	16,134	28,842
49.05	16,134	323	51.65	16,134	29,294
49.10	16,134	645	51.70	16,134	29,728
49.15	16,134	968	51.75	16,134	30,136
49.20	16,134	1,291	51.80	16,134	30,521
49.25	16,134	1,613	51.85	16,134	30,884
49.30	16,134	1,936	51.90	16,134	31,234
49.35	16,134	2,259	51.95	16,134	31,573
49.40	16,134	2,581	52.00	16,134	31,902
49.45	16,134	2,904	52.05	16,134	32,225
49.50	16,134	3,227	52.10	16,134	32,547
49.55	16,134	3,911	52.15	16,134	32,870
49.60	16,134	4,594	52.20	16,134	33,193
49.65	16,134	5,277	52.25	16,134	33,515
49.70	16,134	5,958	52.30	16,134	33,838
49.75	16,134	6,637	52.35	16,134	34,161
49.80	16,134	7,313	52.40	16,134	34,483
49.85	16,134	7,987	52.45	16,134	34,806
49.90	16,134	8,659	52.50	16,134	35,129
49.95	16,134	9,328	52.55	16,134	35,129
50.00	16,134	9,994	52.60	16,134	35,129
50.05	16,134	10,658	52.65	16,134	35,129
50.10	16,134	11,318	52.70	16,134	35,129
50.15	16,134	11,975	52.75	16,134	35,129
50.20	16,134	12,629	52.80	16,134	35,129
50.25	16,134	13,279	52.85	16,134	35,129
50.30	16,134	13,926	52.90	16,134	35,129
50.35	16,134	14,570	52.95	16,134	35,129
50.40	16,134	15,209	53.00	16,134	35,129
50.45	16,134	15,845			
50.50	16,134	16,477			
50.55	16,134	17,105			
50.60	16,134	17,728			
50.65	16,134	18,346			
50.70	16,134	18,959			
50.75	16,134	19,567			
50.80	16,134	20,170			
50.85	16,134	20,767			
50.90	16,134	21,359			
50.95	16,134	21,945			
51.00	16,134	22,525			
51.05	16,134	23,098			
51.10	16,134	23,666			
51.15	16,134	24,225			
51.20	16,134	24,776			
51.25	16,134	25,318			
51.30	16,134	25,851			
51.35	16,134	26,376			
51.40	16,134	26,891			
51.45	16,134	27,396			
51.50	16,134	27,891			
51.55	16,134	28,373			

Summary for Pond P-106: SWMB-106

Inflow Area = 60,202 sf, 78.09% Impervious, Inflow Depth = 4.73" for Custom event
 Inflow = 8.08 cfs @ 12.03 hrs, Volume= 23,720 cf
 Outflow = 7.65 cfs @ 12.06 hrs, Volume= 23,738 cf, Atten= 5%, Lag= 1.6 min
 Discarded = 0.53 cfs @ 12.06 hrs, Volume= 16,357 cf
 Primary = 7.12 cfs @ 12.06 hrs, Volume= 7,381 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 48.10' @ 12.06 hrs Surf.Area= 2,697 sf Storage= 3,190 cf

Plug-Flow detention time= 23.8 min calculated for 23,698 cf (100% of inflow)
 Center-of-Mass det. time= 24.2 min (828.2 - 804.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.00'	1,904 cf	28.17'W x 95.76'L x 2.33'H Field A 6,294 cf Overall - 1,533 cf Embedded = 4,760 cf x 40.0% Voids
#2A	46.50'	1,533 cf	ADS_StormTech SC-310 +Cap x 104 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 104 Chambers in 8 Rows
		3,437 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	47.50'	4.0' long x 5.00' rise Weir Wall 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.00'

Discarded OutFlow Max=0.53 cfs @ 12.06 hrs HW=48.08' (Free Discharge)
 ↑ **3=Exfiltration** (Controls 0.53 cfs)

Primary OutFlow Max=6.82 cfs @ 12.06 hrs HW=48.09' (Free Discharge)
 ↑ **1=Low Level Orifice** (Orifice Controls 0.86 cfs @ 4.40 fps)
 ↓ **2=Weir Wall** (Weir Controls 5.95 cfs @ 2.62 fps)

Pond P-106: SWMB-106 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

8 Rows x 34.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 28.17' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

104 Chambers x 14.7 cf = 1,533.2 cf Chamber Storage

6,293.6 cf Field - 1,533.2 cf Chambers = 4,760.4 cf Stone x 40.0% Voids = 1,904.2 cf Stone Storage

Chamber Storage + Stone Storage = 3,437.3 cf = 0.079 af

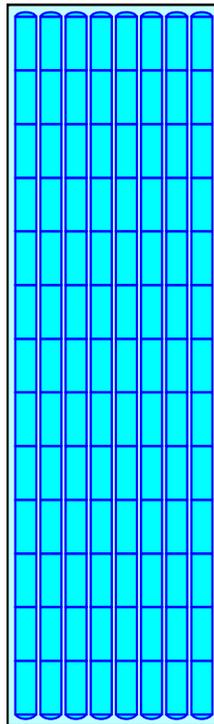
Overall Storage Efficiency = 54.6%

Overall System Size = 95.76' x 28.17' x 2.33'

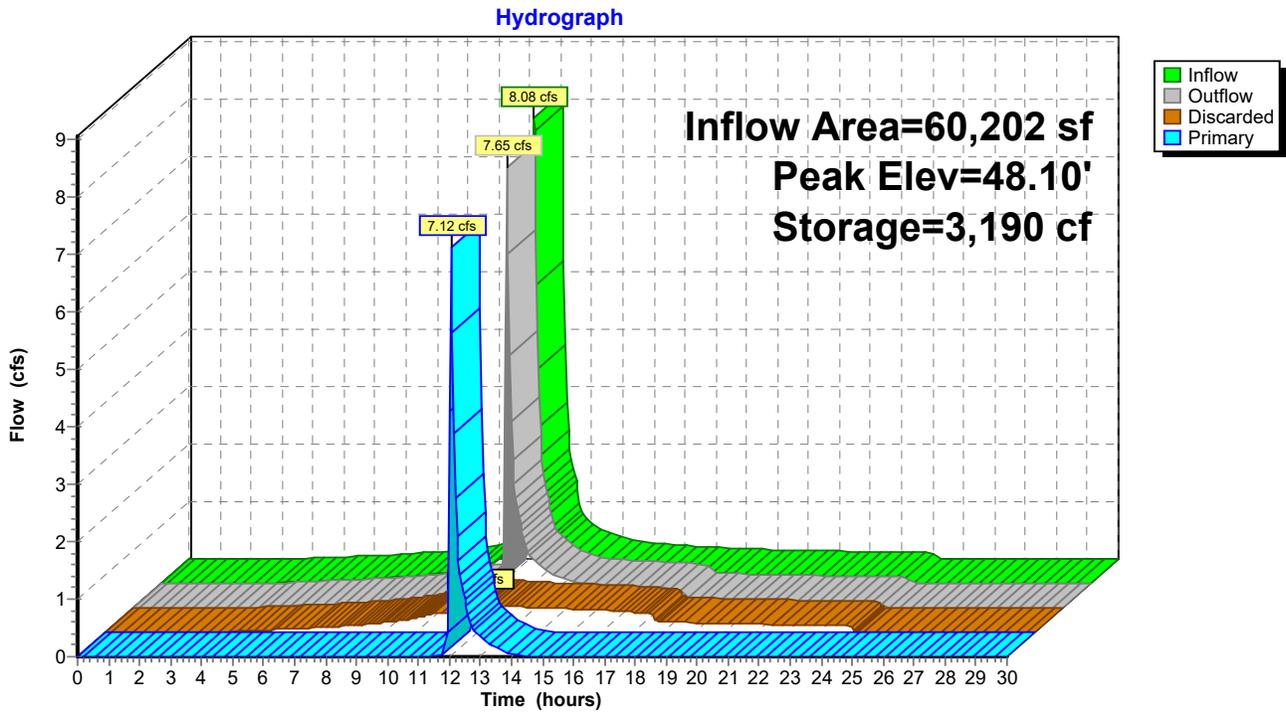
104 Chambers

233.1 cy Field

176.3 cy Stone



Pond P-106: SWMB-106



Stage-Discharge for Pond P-106: SWMB-106

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.00	0.00	0.00	0.00	51.20	101.49	0.85	100.64
46.10	0.32	0.32	0.00	51.30	105.57	0.86	104.70
46.20	0.33	0.33	0.00	51.40	109.69	0.87	108.81
46.30	0.34	0.34	0.00	51.50	113.85	0.88	112.97
46.40	0.35	0.35	0.00	51.60	118.06	0.89	117.16
46.50	0.36	0.36	0.00	51.70	122.31	0.91	121.40
46.60	0.37	0.37	0.00	51.80	126.59	0.92	125.68
46.70	0.39	0.39	0.00	51.90	130.92	0.93	129.99
46.80	0.40	0.40	0.00	52.00	135.28	0.94	134.34
46.90	0.41	0.41	0.00	52.10	139.67	0.95	138.72
47.00	0.42	0.42	0.00	52.20	144.10	0.96	143.14
47.10	0.46	0.43	0.03	52.30	148.55	0.97	147.59
47.20	0.55	0.44	0.11	52.40	153.04	0.98	152.06
47.30	0.68	0.45	0.23	52.50	157.56	0.99	156.57
47.40	0.82	0.46	0.36				
47.50	0.94	0.47	0.47				
47.60	1.45	0.48	0.97				
47.70	2.30	0.49	1.81				
47.80	3.37	0.50	2.87				
47.90	4.62	0.51	4.11				
48.00	6.03	0.52	5.51				
48.10	7.59	0.53	7.06				
48.20	9.28	0.54	8.74				
48.30	11.09	0.55	10.54				
48.40	13.02	0.56	12.46				
48.50	15.07	0.57	14.50				
48.60	17.22	0.58	16.64				
48.70	19.48	0.59	18.88				
48.80	21.83	0.60	21.23				
48.90	24.28	0.61	23.67				
49.00	26.82	0.62	26.20				
49.10	29.45	0.63	28.82				
49.20	32.17	0.65	31.53				
49.30	34.97	0.66	34.32				
49.40	37.86	0.67	37.19				
49.50	40.82	0.68	40.14				
49.60	43.86	0.69	43.18				
49.70	46.98	0.70	46.28				
49.80	50.17	0.71	49.46				
49.90	53.43	0.72	52.71				
50.00	56.76	0.73	56.03				
50.10	60.16	0.74	59.42				
50.20	63.62	0.75	62.87				
50.30	67.15	0.76	66.39				
50.40	70.74	0.77	69.97				
50.50	74.39	0.78	73.61				
50.60	78.10	0.79	77.31				
50.70	81.86	0.80	81.06				
50.80	85.69	0.81	84.87				
50.90	89.56	0.82	88.74				
51.00	93.49	0.83	92.66				
51.10	97.47	0.84	96.62				

Stage-Area-Storage for Pond P-106: SWMB-106

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.00	2,697	0	51.20	2,697	3,437
46.10	2,697	108	51.30	2,697	3,437
46.20	2,697	216	51.40	2,697	3,437
46.30	2,697	324	51.50	2,697	3,437
46.40	2,697	432	51.60	2,697	3,437
46.50	2,697	539	51.70	2,697	3,437
46.60	2,697	754	51.80	2,697	3,437
46.70	2,697	966	51.90	2,697	3,437
46.80	2,697	1,174	52.00	2,697	3,437
46.90	2,697	1,379	52.10	2,697	3,437
47.00	2,697	1,578	52.20	2,697	3,437
47.10	2,697	1,772	52.30	2,697	3,437
47.20	2,697	1,960	52.40	2,697	3,437
47.30	2,697	2,141	52.50	2,697	3,437
47.40	2,697	2,312			
47.50	2,697	2,473			
47.60	2,697	2,618			
47.70	2,697	2,745			
47.80	2,697	2,861			
47.90	2,697	2,970			
48.00	2,697	3,078			
48.10	2,697	3,186			
48.20	2,697	3,293			
48.30	2,697	3,401			
48.40	2,697	3,437			
48.50	2,697	3,437			
48.60	2,697	3,437			
48.70	2,697	3,437			
48.80	2,697	3,437			
48.90	2,697	3,437			
49.00	2,697	3,437			
49.10	2,697	3,437			
49.20	2,697	3,437			
49.30	2,697	3,437			
49.40	2,697	3,437			
49.50	2,697	3,437			
49.60	2,697	3,437			
49.70	2,697	3,437			
49.80	2,697	3,437			
49.90	2,697	3,437			
50.00	2,697	3,437			
50.10	2,697	3,437			
50.20	2,697	3,437			
50.30	2,697	3,437			
50.40	2,697	3,437			
50.50	2,697	3,437			
50.60	2,697	3,437			
50.70	2,697	3,437			
50.80	2,697	3,437			
50.90	2,697	3,437			
51.00	2,697	3,437			
51.10	2,697	3,437			

Summary for Pond P-107: SWMB P-107

Inflow Area = 90,871 sf, 92.92% Impervious, Inflow Depth = 5.51" for Custom event
 Inflow = 13.89 cfs @ 12.02 hrs, Volume= 41,760 cf
 Outflow = 18.82 cfs @ 12.02 hrs, Volume= 43,949 cf, Atten= 0%, Lag= 0.1 min
 Discarded = 0.98 cfs @ 12.02 hrs, Volume= 28,460 cf
 Primary = 17.84 cfs @ 12.02 hrs, Volume= 15,489 cf
 Routed to Pond P-108 : SWMB P-108

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 49.18' @ 12.02 hrs Surf.Area= 3,974 sf Storage= 5,089 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 20.1 min (791.5 - 771.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	46.10'	2,789 cf	41.50'W x 95.76'L x 2.33'H Field A 9,273 cf Overall - 2,300 cf Embedded = 6,973 cf x 40.0% Voids
#2A	46.60'	2,300 cf	ADS_StormTech SC-310 +Cap x 156 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 156 Chambers in 12 Rows
		5,089 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	47.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	48.00'	4.0' long x 5.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s) 1.5' Crest Height
#3	Discarded	46.10'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 43.40'

Discarded OutFlow Max=0.96 cfs @ 12.02 hrs HW=49.06' (Free Discharge)
 ↳ **3=Exfiltration** (Controls 0.96 cfs)

Primary OutFlow Max=15.97 cfs @ 12.02 hrs HW=49.06' (Free Discharge)
 ↳ **1=Low Level Orifice** (Orifice Controls 1.27 cfs @ 6.48 fps)
 ↳ **2=Sharp-Crested Rectangular Weir** (Weir Controls 14.70 cfs @ 3.66 fps)

Pond P-107: SWMB P-107 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)

Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf

Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 6.0" Spacing = 40.0" C-C Row Spacing

13 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 93.76' Row Length +12.0" End Stone x 2 = 95.76' Base Length

12 Rows x 34.0" Wide + 6.0" Spacing x 11 + 12.0" Side Stone x 2 = 41.50' Base Width

6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

156 Chambers x 14.7 cf = 2,299.7 cf Chamber Storage

9,272.8 cf Field - 2,299.7 cf Chambers = 6,973.0 cf Stone x 40.0% Voids = 2,789.2 cf Stone Storage

Chamber Storage + Stone Storage = 5,089.0 cf = 0.117 af

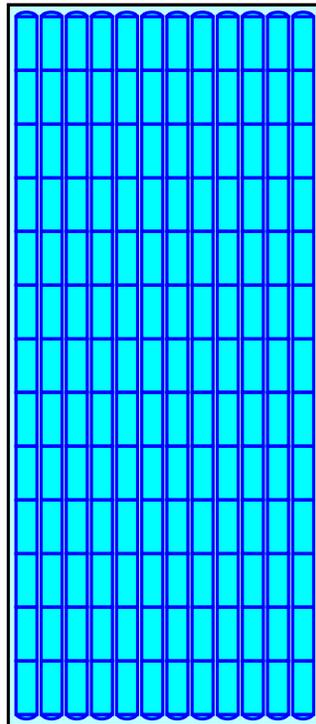
Overall Storage Efficiency = 54.9%

Overall System Size = 95.76' x 41.50' x 2.33'

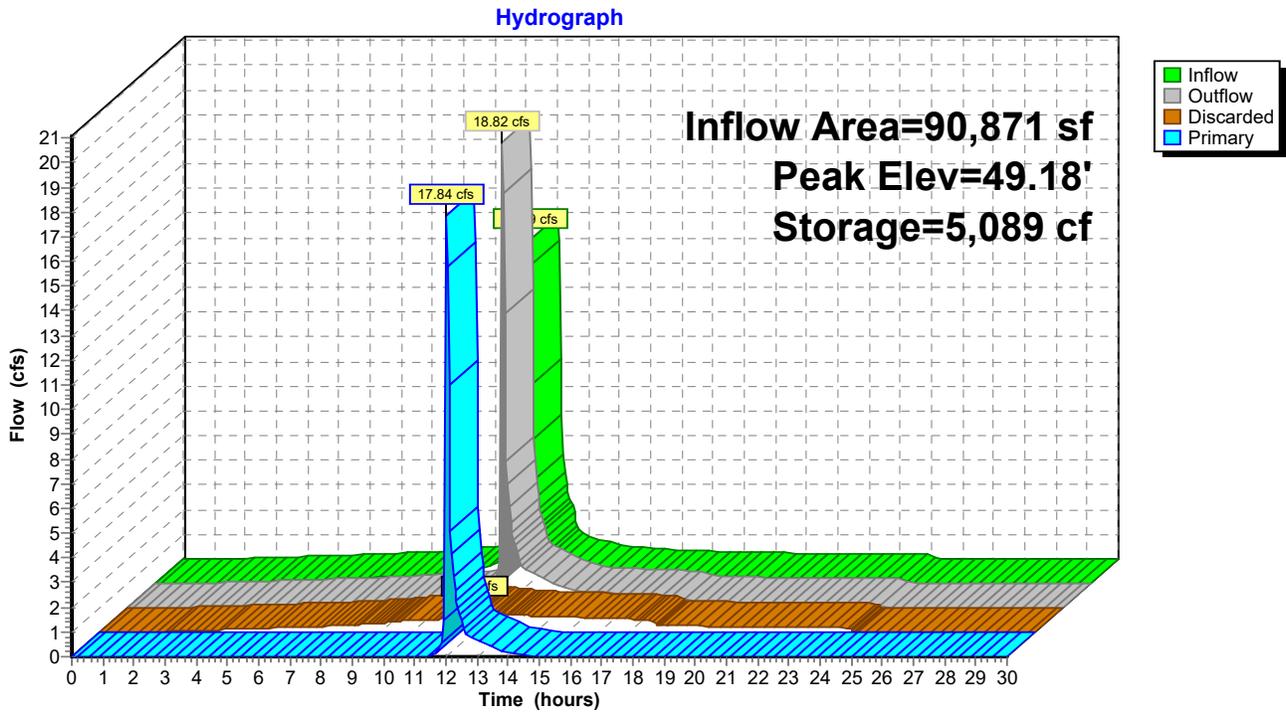
156 Chambers

343.4 cy Field

258.3 cy Stone



Pond P-107: SWMB P-107



Stage-Discharge for Pond P-107: SWMB P-107

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
46.10	0.00	0.00	0.00	51.30	86.34	1.35	85.00
46.20	0.48	0.48	0.00	51.40	90.22	1.36	88.86
46.30	0.49	0.49	0.00	51.50	94.15	1.38	92.77
46.40	0.51	0.51	0.00	51.60	98.14	1.40	96.74
46.50	0.53	0.53	0.00	51.70	102.17	1.41	100.76
46.60	0.55	0.55	0.00	51.80	106.25	1.43	104.82
46.70	0.56	0.56	0.00	51.90	110.37	1.45	108.93
46.80	0.58	0.58	0.00	52.00	114.54	1.47	113.08
46.90	0.60	0.60	0.00	52.10	118.76	1.48	117.27
47.00	0.61	0.61	0.00	52.20	123.01	1.50	121.51
47.10	0.66	0.63	0.03	52.30	127.30	1.52	125.78
47.20	0.76	0.65	0.11	52.40	131.63	1.53	130.10
47.30	0.89	0.66	0.23	52.50	135.99	1.55	134.44
47.40	1.04	0.68	0.36	52.60	140.39	1.57	138.83
47.50	1.17	0.70	0.47	52.70	144.83	1.58	143.24
47.60	1.27	0.72	0.56	52.80	149.29	1.60	147.69
47.70	1.37	0.73	0.63	52.90	153.78	1.62	152.16
47.80	1.45	0.75	0.70	53.00	158.30	1.64	156.67
47.90	1.53	0.77	0.76				
48.00	1.60	0.78	0.82				
48.10	2.09	0.80	1.29				
48.20	2.92	0.82	2.10				
48.30	3.97	0.83	3.14				
48.40	5.21	0.85	4.36				
48.50	6.62	0.87	5.75				
48.60	8.17	0.89	7.28				
48.70	9.86	0.90	8.95				
48.80	11.67	0.92	10.75				
48.90	13.60	0.94	12.66				
49.00	15.64	0.95	14.69				
49.10	17.80	0.97	16.83				
49.20	20.05	0.99	19.06				
49.30	22.41	1.01	21.40				
49.40	24.86	1.02	23.84				
49.50	27.40	1.04	26.36				
49.60	30.04	1.06	28.98				
49.70	32.76	1.07	31.69				
49.80	35.56	1.09	34.47				
49.90	38.45	1.11	37.34				
50.00	41.42	1.12	40.29				
50.10	44.46	1.14	43.32				
50.20	47.58	1.16	46.43				
50.30	50.78	1.18	49.60				
50.40	54.04	1.19	52.85				
50.50	57.38	1.21	56.17				
50.60	60.78	1.23	59.55				
50.70	64.25	1.24	63.00				
50.80	67.78	1.26	66.52				
50.90	71.37	1.28	70.10				
51.00	75.03	1.29	73.74				
51.10	78.74	1.31	77.43				
51.20	82.51	1.33	81.19				

Stage-Area-Storage for Pond P-107: SWMB P-107

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
46.10	3,974	0	51.30	3,974	5,089
46.20	3,974	159	51.40	3,974	5,089
46.30	3,974	318	51.50	3,974	5,089
46.40	3,974	477	51.60	3,974	5,089
46.50	3,974	636	51.70	3,974	5,089
46.60	3,974	795	51.80	3,974	5,089
46.70	3,974	1,114	51.90	3,974	5,089
46.80	3,974	1,429	52.00	3,974	5,089
46.90	3,974	1,739	52.10	3,974	5,089
47.00	3,974	2,042	52.20	3,974	5,089
47.10	3,974	2,339	52.30	3,974	5,089
47.20	3,974	2,627	52.40	3,974	5,089
47.30	3,974	2,906	52.50	3,974	5,089
47.40	3,974	3,174	52.60	3,974	5,089
47.50	3,974	3,428	52.70	3,974	5,089
47.60	3,974	3,667	52.80	3,974	5,089
47.70	3,974	3,881	52.90	3,974	5,089
47.80	3,974	4,069	53.00	3,974	5,089
47.90	3,974	4,240			
48.00	3,974	4,400			
48.10	3,974	4,559			
48.20	3,974	4,718			
48.30	3,974	4,877			
48.40	3,974	5,036			
48.50	3,974	5,089			
48.60	3,974	5,089			
48.70	3,974	5,089			
48.80	3,974	5,089			
48.90	3,974	5,089			
49.00	3,974	5,089			
49.10	3,974	5,089			
49.20	3,974	5,089			
49.30	3,974	5,089			
49.40	3,974	5,089			
49.50	3,974	5,089			
49.60	3,974	5,089			
49.70	3,974	5,089			
49.80	3,974	5,089			
49.90	3,974	5,089			
50.00	3,974	5,089			
50.10	3,974	5,089			
50.20	3,974	5,089			
50.30	3,974	5,089			
50.40	3,974	5,089			
50.50	3,974	5,089			
50.60	3,974	5,089			
50.70	3,974	5,089			
50.80	3,974	5,089			
50.90	3,974	5,089			
51.00	3,974	5,089			
51.10	3,974	5,089			
51.20	3,974	5,089			

Summary for Pond P-108: SWMB P-108

Inflow Area = 370,807 sf, 93.15% Impervious, Inflow Depth = 1.31" for Custom event
 Inflow = 24.63 cfs @ 12.04 hrs, Volume= 40,528 cf
 Outflow = 0.14 cfs @ 16.20 hrs, Volume= 11,151 cf, Atten= 99%, Lag= 249.2 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12
 Secondary = 0.14 cfs @ 16.20 hrs, Volume= 11,151 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 46.57' @ 16.20 hrs Surf.Area= 22,829 sf Storage= 33,692 cf

Plug-Flow detention time= 476.9 min calculated for 11,151 cf (28% of inflow)
 Center-of-Mass det. time= 374.6 min (1,136.5 - 761.8)

Volume	Invert	Avail.Storage	Storage Description
#1	45.00'	153,555 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	20,005	0	0
46.00	21,777	20,891	20,891
47.00	23,610	22,694	43,585
48.00	25,502	24,556	68,141
49.00	27,451	26,477	94,617
50.00	29,456	28,454	123,071
51.00	31,513	30,485	153,555

Device	Routing	Invert	Outlet Devices
#1	Primary	50.00'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	49.00'	24.0" x 36.0" Horiz. OCS-203 Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	48.00'	6.0" Vert. Low Level Orifice C= 0.600 Limited to weir flow at low heads
#4	Secondary	45.00'	0.270 in/hr Underdrain over Surface area

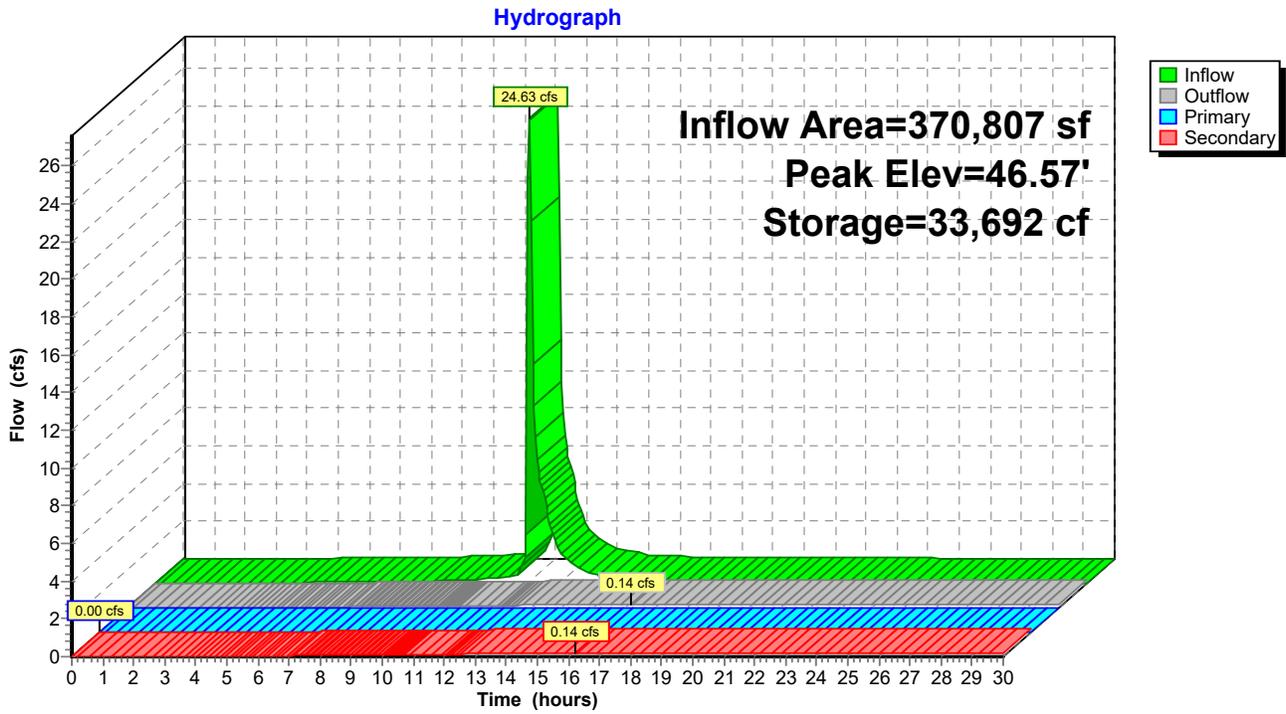
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.00' (Free Discharge)

- ↑1=Overflow Spillway (Controls 0.00 cfs)
- ↑2=OCS-203 Grate (Controls 0.00 cfs)
- ↑3=Low Level Orifice (Controls 0.00 cfs)

Secondary OutFlow Max=0.14 cfs @ 16.20 hrs HW=46.57' (Free Discharge)

- ↑4=Underdrain (Exfiltration Controls 0.14 cfs)

Pond P-108: SWMB P-108



Stage-Discharge for Pond P-108: SWMB P-108

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
45.00	0.00	0.00	0.00	50.20	35.43	35.25	0.19
45.10	0.13	0.00	0.13	50.30	38.86	38.67	0.19
45.20	0.13	0.00	0.13	50.40	42.80	42.61	0.19
45.30	0.13	0.00	0.13	50.50	47.37	47.18	0.19
45.40	0.13	0.00	0.13	50.60	52.54	52.35	0.19
45.50	0.13	0.00	0.13	50.70	57.78	57.58	0.19
45.60	0.13	0.00	0.13	50.80	63.41	63.21	0.19
45.70	0.13	0.00	0.13	50.90	69.43	69.24	0.20
45.80	0.13	0.00	0.13	51.00	75.85	75.66	0.20
45.90	0.13	0.00	0.13				
46.00	0.14	0.00	0.14				
46.10	0.14	0.00	0.14				
46.20	0.14	0.00	0.14				
46.30	0.14	0.00	0.14				
46.40	0.14	0.00	0.14				
46.50	0.14	0.00	0.14				
46.60	0.14	0.00	0.14				
46.70	0.14	0.00	0.14				
46.80	0.15	0.00	0.15				
46.90	0.15	0.00	0.15				
47.00	0.15	0.00	0.15				
47.10	0.15	0.00	0.15				
47.20	0.15	0.00	0.15				
47.30	0.15	0.00	0.15				
47.40	0.15	0.00	0.15				
47.50	0.15	0.00	0.15				
47.60	0.15	0.00	0.15				
47.70	0.16	0.00	0.16				
47.80	0.16	0.00	0.16				
47.90	0.16	0.00	0.16				
48.00	0.16	0.00	0.16				
48.10	0.19	0.03	0.16				
48.20	0.27	0.11	0.16				
48.30	0.39	0.23	0.16				
48.40	0.53	0.36	0.16				
48.50	0.64	0.47	0.17				
48.60	0.73	0.56	0.17				
48.70	0.80	0.63	0.17				
48.80	0.87	0.70	0.17				
48.90	0.93	0.76	0.17				
49.00	0.99	0.82	0.17				
49.10	2.08	1.91	0.17				
49.20	4.02	3.85	0.17				
49.30	6.52	6.34	0.18				
49.40	9.46	9.29	0.18				
49.50	12.80	12.62	0.18				
49.60	16.48	16.30	0.18				
49.70	20.47	20.29	0.18				
49.80	24.76	24.58	0.18				
49.90	28.80	28.62	0.18				
50.00	30.32	30.14	0.18				
50.10	32.56	32.37	0.19				

Stage-Area-Storage for Pond P-108: SWMB P-108

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
45.00	20,005	0	50.20	29,867	129,003
45.10	20,182	2,009	50.30	30,073	132,000
45.20	20,359	4,036	50.40	30,279	135,017
45.30	20,537	6,081	50.50	30,485	138,056
45.40	20,714	8,144	50.60	30,690	141,114
45.50	20,891	10,224	50.70	30,896	144,194
45.60	21,068	12,322	50.80	31,102	147,294
45.70	21,245	14,438	50.90	31,307	150,414
45.80	21,423	16,571	51.00	31,513	153,555
45.90	21,600	18,722			
46.00	21,777	20,891			
46.10	21,960	23,078			
46.20	22,144	25,283			
46.30	22,327	27,507			
46.40	22,510	29,748			
46.50	22,694	32,009			
46.60	22,877	34,287			
46.70	23,060	36,584			
46.80	23,243	38,899			
46.90	23,427	41,233			
47.00	23,610	43,585			
47.10	23,799	45,955			
47.20	23,988	48,344			
47.30	24,178	50,753			
47.40	24,367	53,180			
47.50	24,556	55,626			
47.60	24,745	58,091			
47.70	24,934	60,575			
47.80	25,124	63,078			
47.90	25,313	65,600			
48.00	25,502	68,141			
48.10	25,697	70,700			
48.20	25,892	73,280			
48.30	26,087	75,879			
48.40	26,282	78,497			
48.50	26,477	81,135			
48.60	26,671	83,793			
48.70	26,866	86,469			
48.80	27,061	89,166			
48.90	27,256	91,882			
49.00	27,451	94,617			
49.10	27,652	97,372			
49.20	27,852	100,147			
49.30	28,052	102,943			
49.40	28,253	105,758			
49.50	28,454	108,593			
49.60	28,654	111,449			
49.70	28,855	114,324			
49.80	29,055	117,219			
49.90	29,255	120,135			
50.00	29,456	123,071			
50.10	29,662	126,026			

Summary for Pond P-109: SWMB P-109

Inflow Area = 203,282 sf, 65.33% Impervious, Inflow Depth = 4.35" for Custom event
 Inflow = 5.20 cfs @ 12.37 hrs, Volume= 73,625 cf
 Outflow = 4.10 cfs @ 13.27 hrs, Volume= 73,625 cf, Atten= 21%, Lag= 53.9 min
 Discarded = 1.42 cfs @ 13.27 hrs, Volume= 58,103 cf
 Primary = 2.69 cfs @ 13.27 hrs, Volume= 15,522 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 44.32' @ 13.27 hrs Surf.Area= 8,246 sf Storage= 16,428 cf

Plug-Flow detention time= 83.4 min calculated for 73,625 cf (100% of inflow)
 Center-of-Mass det. time= 83.4 min (910.1 - 826.7)

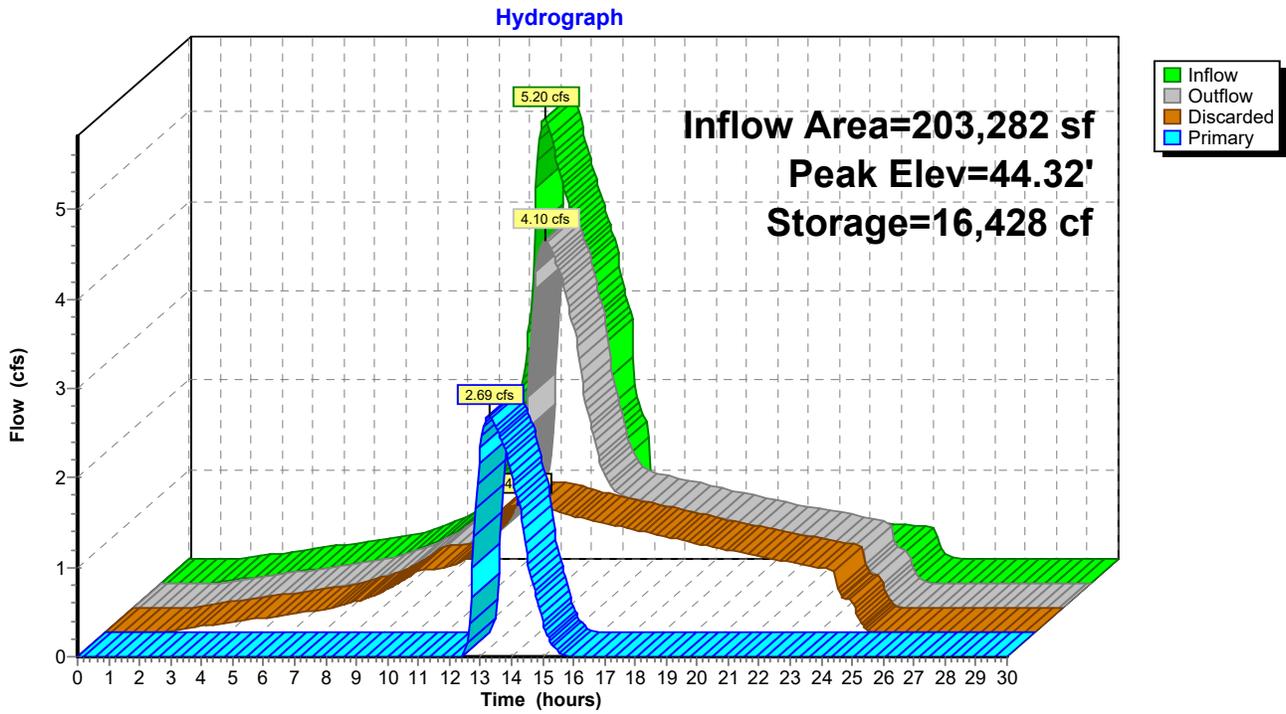
Volume	Invert	Avail.Storage	Storage Description
#1	42.00'	26,865 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.00	5,939	0	0
43.00	6,891	6,415	6,415
44.00	7,900	7,396	13,811
45.00	8,966	8,433	22,244
45.50	9,519	4,621	26,865

Device	Routing	Invert	Outlet Devices
#1	Primary	44.50'	10.0' long + 3.0 ' SideZ x 8.0' breadth Overflow Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#2	Primary	43.80'	1.0' long + 4.0 ' SideZ x 8.0' breadth Outlet Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74
#3	Discarded	42.00'	5.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 38.00'

Discarded OutFlow Max=1.42 cfs @ 13.27 hrs HW=44.32' (Free Discharge)
 ↑**3=Exfiltration** (Controls 1.42 cfs)

Primary OutFlow Max=2.68 cfs @ 13.27 hrs HW=44.32' (Free Discharge)
 ↑**1=Overflow Spillway** (Controls 0.00 cfs)
 ↑**2=Outlet Spillway** (Weir Controls 2.68 cfs @ 1.65 fps)

Pond P-109: SWMB P-109



Stage-Discharge for Pond P-109: SWMB P-109

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
42.00	0.00	0.00	0.00	44.60	9.15	1.51	7.64
42.05	0.70	0.70	0.00	44.65	10.83	1.53	9.30
42.10	0.72	0.72	0.00	44.70	12.72	1.55	11.17
42.15	0.73	0.73	0.00	44.75	14.86	1.57	13.29
42.20	0.74	0.74	0.00	44.80	17.22	1.58	15.63
42.25	0.76	0.76	0.00	44.85	19.81	1.60	18.21
42.30	0.77	0.77	0.00	44.90	22.64	1.62	21.02
42.35	0.79	0.79	0.00	44.95	25.73	1.64	24.10
42.40	0.80	0.80	0.00	45.00	29.08	1.66	27.43
42.45	0.82	0.82	0.00	45.05	32.65	1.67	30.97
42.50	0.83	0.83	0.00	45.10	36.47	1.69	34.78
42.55	0.85	0.85	0.00	45.15	40.29	1.71	38.58
42.60	0.86	0.86	0.00	45.20	44.31	1.73	42.58
42.65	0.88	0.88	0.00	45.25	48.53	1.75	46.78
42.70	0.89	0.89	0.00	45.30	52.95	1.77	51.18
42.75	0.91	0.91	0.00	45.35	57.56	1.78	55.78
42.80	0.92	0.92	0.00	45.40	62.38	1.80	60.58
42.85	0.94	0.94	0.00	45.45	67.46	1.82	65.64
42.90	0.95	0.95	0.00	45.50	72.76	1.84	70.92
42.95	0.97	0.97	0.00				
43.00	0.98	0.98	0.00				
43.05	1.00	1.00	0.00				
43.10	1.01	1.01	0.00				
43.15	1.03	1.03	0.00				
43.20	1.04	1.04	0.00				
43.25	1.06	1.06	0.00				
43.30	1.08	1.08	0.00				
43.35	1.09	1.09	0.00				
43.40	1.11	1.11	0.00				
43.45	1.12	1.12	0.00				
43.50	1.14	1.14	0.00				
43.55	1.16	1.16	0.00				
43.60	1.17	1.17	0.00				
43.65	1.19	1.19	0.00				
43.70	1.21	1.21	0.00				
43.75	1.22	1.22	0.00				
43.80	1.24	1.24	0.00				
43.85	1.29	1.26	0.03				
43.90	1.37	1.27	0.10				
43.95	1.50	1.29	0.21				
44.00	1.66	1.31	0.36				
44.05	1.88	1.32	0.55				
44.10	2.14	1.34	0.80				
44.15	2.46	1.36	1.10				
44.20	2.84	1.37	1.47				
44.25	3.29	1.39	1.90				
44.30	3.82	1.41	2.41				
44.35	4.42	1.43	2.99				
44.40	5.11	1.44	3.66				
44.45	5.81	1.46	4.35				
44.50	6.59	1.48	5.11				
44.55	7.72	1.50	6.22				

Stage-Area-Storage for Pond P-109: SWMB P-109

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
42.00	5,939	0	44.60	8,540	18,742
42.05	5,987	298	44.65	8,593	19,171
42.10	6,034	599	44.70	8,646	19,602
42.15	6,082	902	44.75	8,700	20,035
42.20	6,129	1,207	44.80	8,753	20,472
42.25	6,177	1,515	44.85	8,806	20,911
42.30	6,225	1,825	44.90	8,859	21,352
42.35	6,272	2,137	44.95	8,913	21,797
42.40	6,320	2,452	45.00	8,966	22,244
42.45	6,367	2,769	45.05	9,021	22,693
42.50	6,415	3,089	45.10	9,077	23,146
42.55	6,463	3,410	45.15	9,132	23,601
42.60	6,510	3,735	45.20	9,187	24,059
42.65	6,558	4,061	45.25	9,243	24,520
42.70	6,605	4,391	45.30	9,298	24,983
42.75	6,653	4,722	45.35	9,353	25,449
42.80	6,701	5,056	45.40	9,408	25,918
42.85	6,748	5,392	45.45	9,464	26,390
42.90	6,796	5,731	45.50	9,519	26,865
42.95	6,843	6,072			
43.00	6,891	6,415			
43.05	6,941	6,761			
43.10	6,992	7,109			
43.15	7,042	7,460			
43.20	7,093	7,813			
43.25	7,143	8,169			
43.30	7,194	8,528			
43.35	7,244	8,889			
43.40	7,295	9,252			
43.45	7,345	9,618			
43.50	7,396	9,987			
43.55	7,446	10,358			
43.60	7,496	10,731			
43.65	7,547	11,107			
43.70	7,597	11,486			
43.75	7,648	11,867			
43.80	7,698	12,251			
43.85	7,749	12,637			
43.90	7,799	13,026			
43.95	7,850	13,417			
44.00	7,900	13,811			
44.05	7,953	14,207			
44.10	8,007	14,606			
44.15	8,060	15,007			
44.20	8,113	15,412			
44.25	8,167	15,819			
44.30	8,220	16,228			
44.35	8,273	16,641			
44.40	8,326	17,056			
44.45	8,380	17,473			
44.50	8,433	17,894			
44.55	8,486	18,317			

Summary for Pond SB-LS: SB-LS

Inflow Area = 49,920 sf, 0.00% Impervious, Inflow Depth = 1.03" for Custom event
 Inflow = 0.37 cfs @ 12.94 hrs, Volume= 4,290 cf
 Outflow = 0.07 cfs @ 17.25 hrs, Volume= 1,611 cf, Atten= 80%, Lag= 258.2 min
 Primary = 0.07 cfs @ 17.25 hrs, Volume= 1,611 cf
 Routed to Link DP-1 : Wetlands WA2 - WA12

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 43.51' @ 17.25 hrs Surf.Area= 1,750 sf Storage= 2,690 cf

Plug-Flow detention time= 450.2 min calculated for 1,609 cf (37% of inflow)
 Center-of-Mass det. time= 249.3 min (1,243.1 - 993.8)

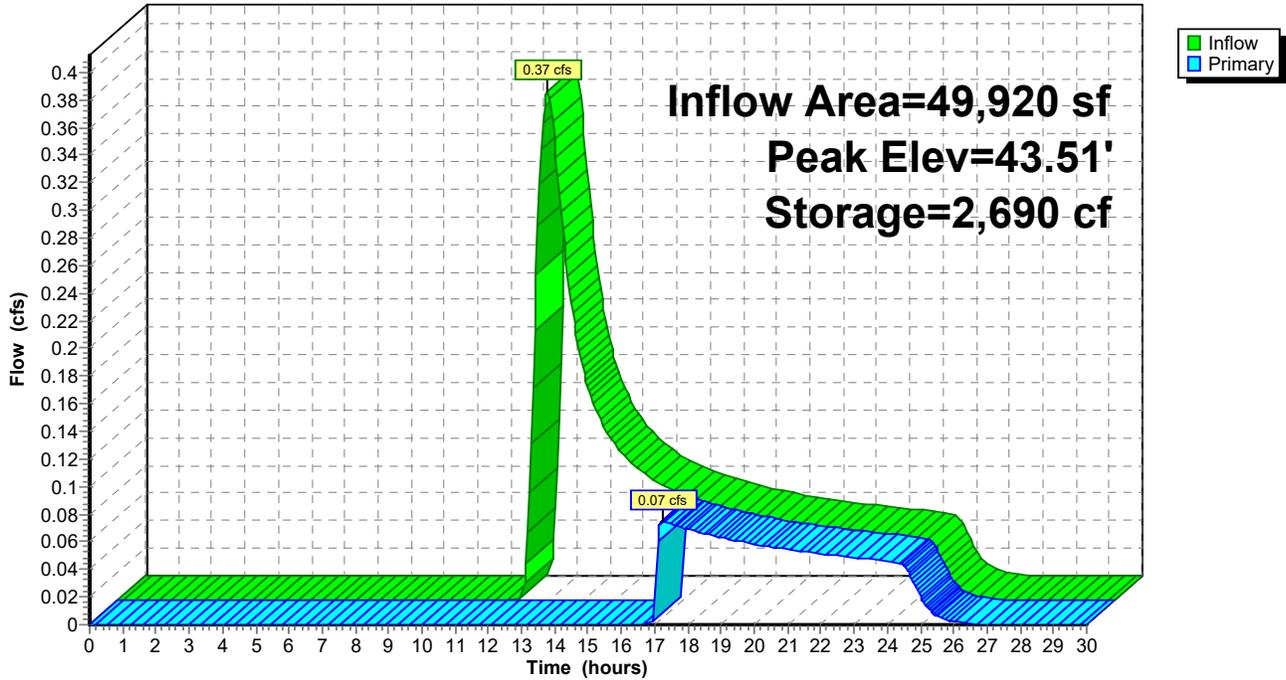
Volume	Invert	Avail.Storage	Storage Description
#1	40.50'	3,621 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
40.50	290	0	0
41.00	416	177	177
42.00	741	579	755
43.00	1,489	1,115	1,870
43.50	1,747	809	2,679
44.00	2,020	942	3,621

Device	Routing	Invert	Outlet Devices
#1	Primary	43.50'	50.0' long + 3.0 ' SideZ x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.06 cfs @ 17.25 hrs HW=43.51' (Free Discharge)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 0.06 cfs @ 0.19 fps)

Pond SB-LS: SB-LS

Hydrograph



Stage-Discharge for Pond SB-LS: SB-LS

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
40.50	0.00	41.54	0.00	42.58	0.00	43.62	4.95
40.52	0.00	41.56	0.00	42.60	0.00	43.64	6.25
40.54	0.00	41.58	0.00	42.62	0.00	43.66	7.64
40.56	0.00	41.60	0.00	42.64	0.00	43.68	9.13
40.58	0.00	41.62	0.00	42.66	0.00	43.70	10.70
40.60	0.00	41.64	0.00	42.68	0.00	43.72	12.43
40.62	0.00	41.66	0.00	42.70	0.00	43.74	14.26
40.64	0.00	41.68	0.00	42.72	0.00	43.76	16.19
40.66	0.00	41.70	0.00	42.74	0.00	43.78	18.21
40.68	0.00	41.72	0.00	42.76	0.00	43.80	20.34
40.70	0.00	41.74	0.00	42.78	0.00	43.82	22.55
40.72	0.00	41.76	0.00	42.80	0.00	43.84	24.86
40.74	0.00	41.78	0.00	42.82	0.00	43.86	27.27
40.76	0.00	41.80	0.00	42.84	0.00	43.88	29.77
40.78	0.00	41.82	0.00	42.86	0.00	43.90	32.36
40.80	0.00	41.84	0.00	42.88	0.00	43.92	35.11
40.82	0.00	41.86	0.00	42.90	0.00	43.94	37.97
40.84	0.00	41.88	0.00	42.92	0.00	43.96	40.93
40.86	0.00	41.90	0.00	42.94	0.00	43.98	43.99
40.88	0.00	41.92	0.00	42.96	0.00	44.00	47.16
40.90	0.00	41.94	0.00	42.98	0.00		
40.92	0.00	41.96	0.00	43.00	0.00		
40.94	0.00	41.98	0.00	43.02	0.00		
40.96	0.00	42.00	0.00	43.04	0.00		
40.98	0.00	42.02	0.00	43.06	0.00		
41.00	0.00	42.04	0.00	43.08	0.00		
41.02	0.00	42.06	0.00	43.10	0.00		
41.04	0.00	42.08	0.00	43.12	0.00		
41.06	0.00	42.10	0.00	43.14	0.00		
41.08	0.00	42.12	0.00	43.16	0.00		
41.10	0.00	42.14	0.00	43.18	0.00		
41.12	0.00	42.16	0.00	43.20	0.00		
41.14	0.00	42.18	0.00	43.22	0.00		
41.16	0.00	42.20	0.00	43.24	0.00		
41.18	0.00	42.22	0.00	43.26	0.00		
41.20	0.00	42.24	0.00	43.28	0.00		
41.22	0.00	42.26	0.00	43.30	0.00		
41.24	0.00	42.28	0.00	43.32	0.00		
41.26	0.00	42.30	0.00	43.34	0.00		
41.28	0.00	42.32	0.00	43.36	0.00		
41.30	0.00	42.34	0.00	43.38	0.00		
41.32	0.00	42.36	0.00	43.40	0.00		
41.34	0.00	42.38	0.00	43.42	0.00		
41.36	0.00	42.40	0.00	43.44	0.00		
41.38	0.00	42.42	0.00	43.46	0.00		
41.40	0.00	42.44	0.00	43.48	0.00		
41.42	0.00	42.46	0.00	43.50	0.00		
41.44	0.00	42.48	0.00	43.52	0.34		
41.46	0.00	42.50	0.00	43.54	0.95		
41.48	0.00	42.52	0.00	43.56	1.75		
41.50	0.00	42.54	0.00	43.58	2.69		
41.52	0.00	42.56	0.00	43.60	3.77		

Stage-Area-Storage for Pond SB-LS: SB-LS

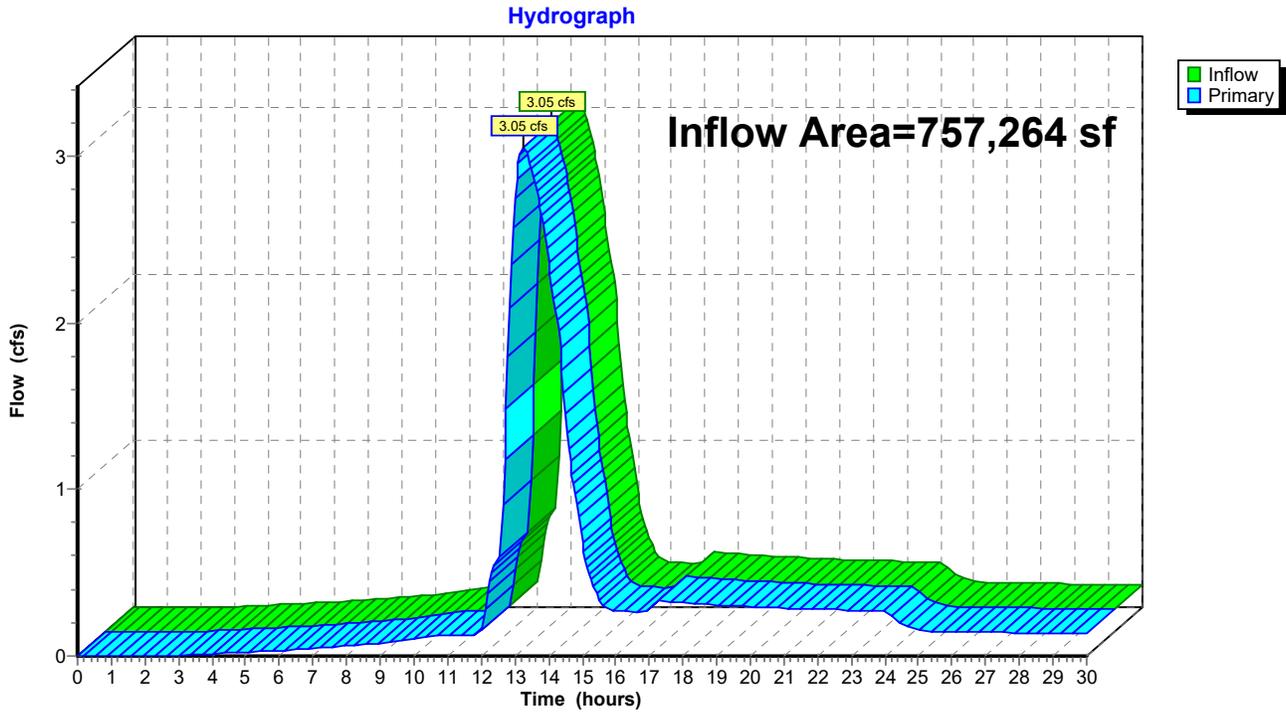
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
40.50	290	0	43.10	1,541	2,021
40.55	303	15	43.15	1,566	2,099
40.60	315	30	43.20	1,592	2,178
40.65	328	46	43.25	1,618	2,258
40.70	340	63	43.30	1,644	2,340
40.75	353	80	43.35	1,670	2,423
40.80	366	98	43.40	1,695	2,507
40.85	378	117	43.45	1,721	2,592
40.90	391	136	43.50	1,747	2,679
40.95	403	156	43.55	1,774	2,767
41.00	416	177	43.60	1,802	2,856
41.05	432	198	43.65	1,829	2,947
41.10	449	220	43.70	1,856	3,039
41.15	465	243	43.75	1,884	3,133
41.20	481	266	43.80	1,911	3,228
41.25	497	291	43.85	1,938	3,324
41.30	513	316	43.90	1,965	3,421
41.35	530	342	43.95	1,993	3,520
41.40	546	369	44.00	2,020	3,621
41.45	562	397			
41.50	579	425			
41.55	595	454			
41.60	611	485			
41.65	627	516			
41.70	644	547			
41.75	660	580			
41.80	676	613			
41.85	692	648			
41.90	708	683			
41.95	725	718			
42.00	741	755			
42.05	778	793			
42.10	816	833			
42.15	853	875			
42.20	891	918			
42.25	928	964			
42.30	965	1,011			
42.35	1,003	1,060			
42.40	1,040	1,111			
42.45	1,078	1,164			
42.50	1,115	1,219			
42.55	1,152	1,276			
42.60	1,190	1,334			
42.65	1,227	1,395			
42.70	1,265	1,457			
42.75	1,302	1,521			
42.80	1,339	1,587			
42.85	1,377	1,655			
42.90	1,414	1,725			
42.95	1,452	1,796			
43.00	1,489	1,870			
43.05	1,515	1,945			

Summary for Link DP-1: Wetlands WA2 - WA12

Inflow Area = 757,264 sf, 63.15% Impervious, Inflow Depth > 0.54" for Custom event
Inflow = 3.05 cfs @ 13.25 hrs, Volume= 34,156 cf
Primary = 3.05 cfs @ 13.25 hrs, Volume= 34,156 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-1: Wetlands WA2 - WA12



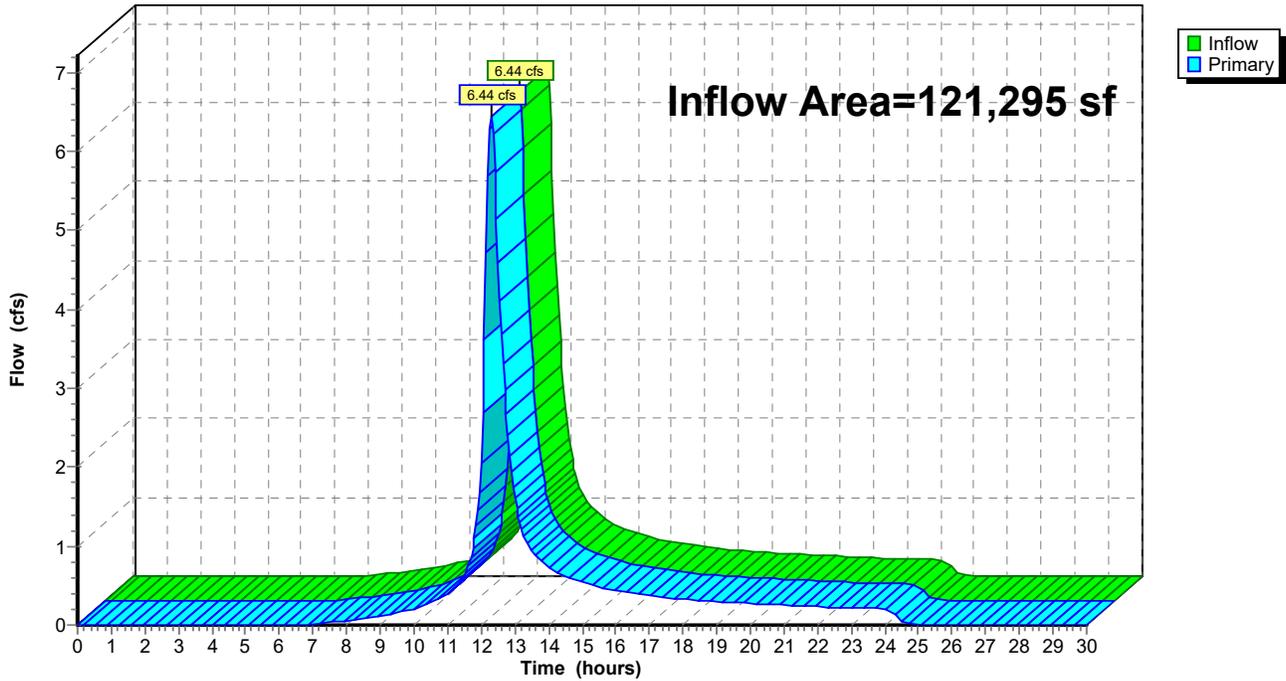
Summary for Link DP-2: Frontage Road

Inflow Area = 121,295 sf, 29.98% Impervious, Inflow Depth = 3.47" for Custom event
Inflow = 6.44 cfs @ 12.30 hrs, Volume= 35,078 cf
Primary = 6.44 cfs @ 12.30 hrs, Volume= 35,078 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link DP-2: Frontage Road

Hydrograph



APPENDIX E

CONVEYANCE MODELING RESULTS

FlexTable: Conduit Table

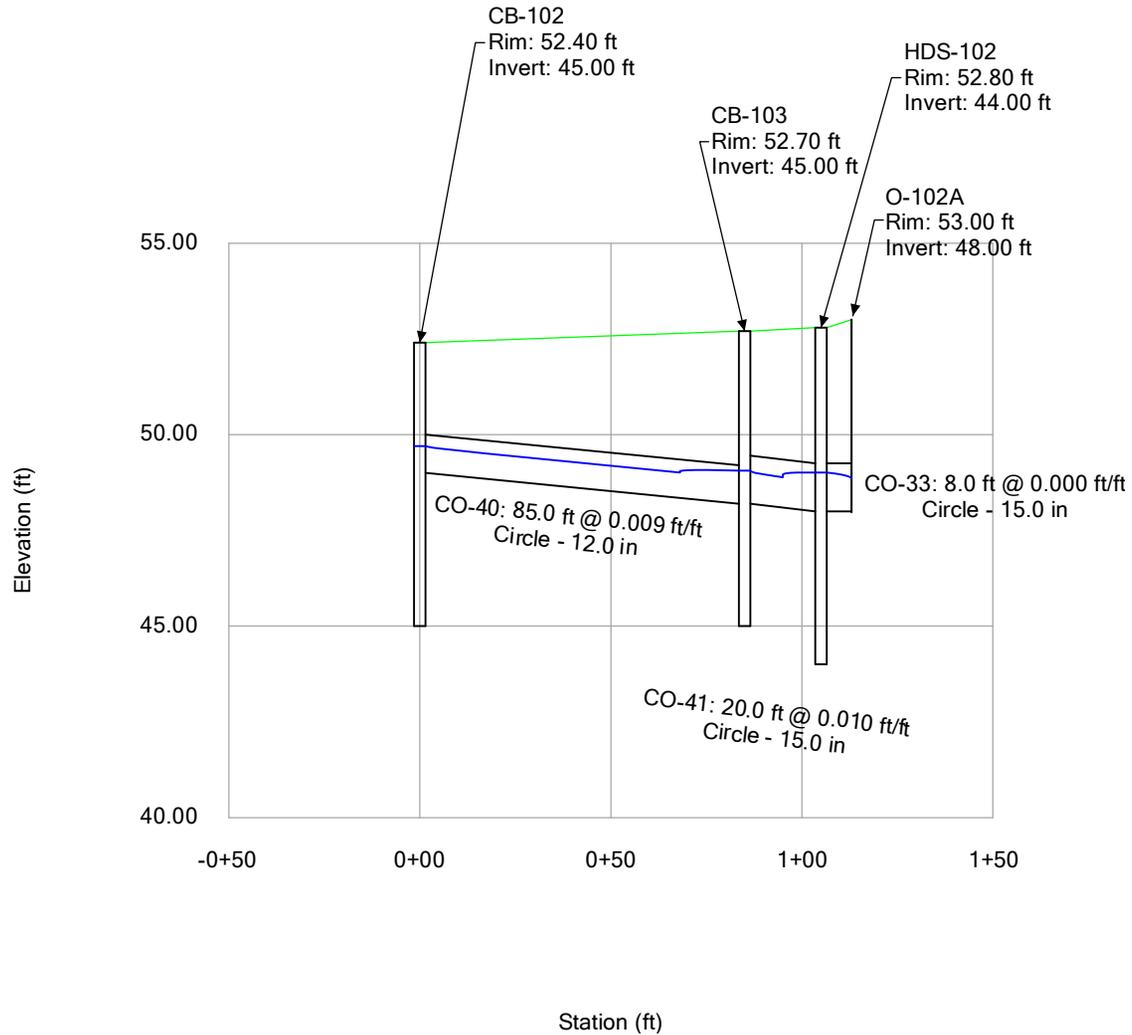
ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (User Defined) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)	Depth (Normal) / Rise (%)	Notes
35	CO-1	CB-117	48.25	CB-118	48.00	30.0	0.008	Circle	12.0	0.013	1.38	3.98	0.64	3.25	42.5	45.5	
37	CO-2	CB-118	48.00	CB-119	47.50	56.0	0.009	Circle	12.0	0.013	2.24	4.59	0.94	3.37	66.5	59.6	
39	CO-3	CB-119	47.50	MH-109	47.20	28.0	0.011	Circle	15.0	0.013	5.38	6.06	1.12	6.69	80.5	68.0	
41	CO-4	MH-109	47.20	MH-110	47.10	10.0	0.010	Circle	15.0	0.013	6.40	6.00	1.15	6.46	99.1	81.1	
43	CO-5	MH-110	47.10	O-109	47.10	4.0	0.000	Circle	15.0	0.013	6.39	5.21	1.02	0.06	9,890.3	(N/A)	
45	CO-6	TD- 100	49.40	MH-109	47.50	130.0	0.015	Circle	10.0	0.013	1.09	4.63	0.82	2.65	41.2	44.7	
48	CO-7	CB-121	47.50	CB-122	47.30	30.0	0.007	Circle	15.0	0.013	0.80	0.65	1.55	5.27	15.2	26.3	
50	CO-8	CB-122	47.30	CB-123	46.90	76.0	0.005	Circle	15.0	0.013	1.53	1.25	1.91	4.69	32.6	39.3	
52	CO-9	CB-123	46.90	MH-111	46.65	42.0	0.006	Circle	15.0	0.013	7.24	5.90	1.63	4.98	145.3	(N/A)	
54	CO-10	MH-111	46.65	MH-112	46.60	9.0	0.006	Circle	15.0	0.013	11.52	9.39	1.39	4.81	239.3	(N/A)	
56	CO-11	MH-112	46.60	O-110	46.60	5.0	0.000	Circle	15.0	0.013	11.51	9.38	1.21	0.06	17,818.3	(N/A)	
59	CO-12	TD-101 & 102	49.40	CB-120	48.10	115.0	0.011	Circle	10.0	0.013	0.95	4.05	0.49	2.33	40.6	44.3	
60	CO-13	CB-120	47.60	MH-111	46.60	108.0	0.009	Circle	15.0	0.013	3.82	5.32	1.68	6.22	61.5	56.7	
62	CO-14	TD-103	49.40	MH-111	47.50	114.0	0.017	Circle	10.0	0.013	0.95	4.67	0.78	2.83	33.5	39.9	
64	CO-15	TD- 104 & 105	49.20	CB-123	47.40	138.0	0.013	Circle	12.0	0.013	2.98	5.66	1.41	4.07	73.3	63.6	
72	CO-18	OCS-106	46.50	OCS-107	46.10	66.0	0.006	Circle	15.0	0.013	5.00	4.67	1.13	5.03	99.4	81.5	
74	CO-19	OCS-107	45.85	FES-101	45.00	110.0	0.008	Circle	18.0	0.013	9.99	5.65	1.22	9.23	108.2	(N/A)	
77	CO-20	OCS-108	48.00	FES-103	47.80	40.0	0.005	Circle	15.0	0.013	0.08	1.42	0.11	4.57	1.8	9.2	
92	CO-23	CB-126	48.00	CB-119	47.50	99.0	0.005	Circle	12.0	0.013	0.44	2.41	0.94	2.53	17.2	28.1	
94	CO-24	MH-108	46.50	FES-102	45.00	268.0	0.006	Circle	18.0	0.013	5.57	4.82	0.91	7.86	70.8	62.2	
98	CO-25	CB-108	49.00	CB-107	48.70	30.0	0.010	Circle	12.0	0.013	2.47	4.90	1.09	3.56	69.5	61.3	
100	CO-26	CB-107	48.70	CB-106	48.00	58.0	0.012	Circle	12.0	0.013	3.26	4.15	1.31	3.91	83.2	69.7	
102	CO-27	CB-106	48.00	HDS-101	47.90	15.0	0.007	Circle	12.0	0.013	5.26	6.70	1.08	2.91	180.8	(N/A)	
104	CO-28	HDS-101	47.90	O-101	47.90	5.0	0.000	Circle	12.0	0.013	5.25	6.68	0.93	0.04	14,733.8	(N/A)	
106	CO-29	MH-107	48.10	MH-108	46.50	311.0	0.005	Circle	18.0	0.013	5.65	4.68	0.93	7.53	75.0	64.6	
116	CO-33	HDS-102	48.00	O-102A	48.00	8.0	0.000	Circle	15.0	0.013	4.49	3.66	0.86	0.06	6,945.6	(N/A)	
118	CO-34	CB-114	49.30	CB-113	49.10	30.0	0.007	Circle	12.0	0.013	0.58	2.89	0.91	2.91	20.0	30.3	
123	CO-36	CB-112	49.20	CB-111	49.05	30.0	0.005	Circle	12.0	0.013	0.58	2.61	0.47	2.52	23.1	32.7	
132	CO-38	CB-109	49.20	CB-110	49.00	30.0	0.007	Circle	12.0	0.013	0.77	3.13	0.54	2.91	26.6	35.2	
133	CO-39	CB-110	49.00	CB-106	48.00	201.0	0.005	Circle	12.0	0.013	1.26	3.20	1.31	2.51	50.3	50.1	
135	CO-40	CB-102	49.00	CB-103	48.20	85.0	0.009	Circle	12.0	0.013	2.69	4.86	0.86	3.46	77.9	66.4	
136	CO-41	CB-103	48.20	HDS-102	48.00	20.0	0.010	Circle	15.0	0.013	4.50	5.69	1.02	6.46	69.7	61.5	
137	CO-42	CB-111	49.05	CB-103	48.20	39.0	0.022	Circle	12.0	0.013	1.22	5.45	0.86	5.26	23.3	32.8	
138	CO-43	CB-113	49.10	CB-101	48.60	103.0	0.005	Circle	12.0	0.013	2.74	3.49	0.78	2.48	110.3	(N/A)	
140	CO-44	CB-101	48.60	O-103	48.50	9.0	0.011	Circle	12.0	0.013	3.29	5.39	0.73	3.76	87.6	72.5	
143	CO-45	CB-104	48.75	O-102B	48.00	33.0	0.023	Circle	15.0	0.013	7.42	8.74	0.85	9.74	76.2	65.4	
146	CO-46	OCS-102	47.50	MH-101	47.20	37.0	0.008	Circle	15.0	0.013	2.38	4.50	0.77	5.82	40.9	44.6	
152	CO-49	OCS-101	47.90	MH-101	47.70	13.0	0.015	Circle	15.0	0.013	1.49	4.99	0.38	8.01	18.6	29.2	
158	CO-50	CB-115	49.70	CB-116	49.40	33.0	0.009	Circle	12.0	0.013	0.36	2.82	0.48	3.40	10.7	22.1	
159	CO-51	CB-116	49.40	MH-107	49.00	46.0	0.009	Circle	12.0	0.013	1.30	3.97	0.43	3.32	39.0	43.3	
162	CO-52	MH-101	47.20	MH-102	46.83	75.0	0.005	Circle	18.0	0.013	3.87	4.23	0.83	7.38	52.5	51.4	
163	CO-53	MH-102	46.83	MH-103	46.00	128.0	0.006	Circle	18.0	0.013	4.68	4.91	0.89	8.46	55.3	53.1	

FlexTable: Conduit Table

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (User Defined) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Capacity (Full Flow) (cfs)	Flow / Capacity (Design) (%)	Depth (Normal) / Rise (%)	Notes
166	CO-54	CB-105	49.80	O-104	49.17	33.0	0.019	Circle	12.0	0.013	2.47	6.28	0.51	4.92	50.3	50.1	
169	CO-55	OCS-104	47.40	MH-102	47.30	7.0	0.014	Circle	12.0	0.013	0.81	4.17	0.31	4.26	19.0	29.6	
173	CO-56	ROOF	50.00	O-105	49.50	49.0	0.010	Circle	24.0	0.013	28.46	9.06	1.84	22.85	124.5	(N/A)	
176	CO-57	OCS-105	49.50	MH-106	49.00	89.0	0.006	Circle	18.0	0.013	3.01	4.16	0.82	7.87	38.2	42.9	
177	CO-58	MH-106	49.00	MH-107	48.10	175.0	0.005	Circle	18.0	0.013	4.37	4.42	0.97	7.53	58.0	54.7	
179	CO-59	OCS-103	50.30	MH-106	50.15	12.0	0.012	Circle	12.0	0.013	1.36	4.59	0.41	3.98	34.1	40.3	
185	CO-60	MH-103	46.00	MH-113	45.80	31.0	0.006	Circle	18.0	0.013	4.68	4.90	1.09	8.44	55.5	53.2	
187	CO-61	MH-113	45.80	MH-114	43.60	437.0	0.005	Circle	18.0	0.013	6.57	4.76	1.06	7.45	88.1	72.9	
189	CO-63	CB-125	49.70	MH-113	49.50	15.0	0.013	Circle	12.0	0.013	1.02	4.34	0.34	4.11	24.8	33.9	
190	CO-64	CB-124	49.70	MH-113	49.50	15.0	0.013	Circle	12.0	0.013	0.87	4.16	0.32	4.11	21.2	31.3	
192	CO-65	MH-114	43.60	MH-115	42.80	156.0	0.005	Circle	18.0	0.013	6.40	4.78	0.98	7.52	85.0	70.8	
193	CO-66	MH-115	42.80	FES-100	42.35	35.0	0.013	Circle	18.0	0.013	6.34	6.84	0.80	11.91	53.2	51.9	
198	CO-67	OCS-109	42.00	FES-104	0.00		1.350	Circle	12.0	0.013	0.00	0.00	0.00	41.39	0.0	(N/A)	

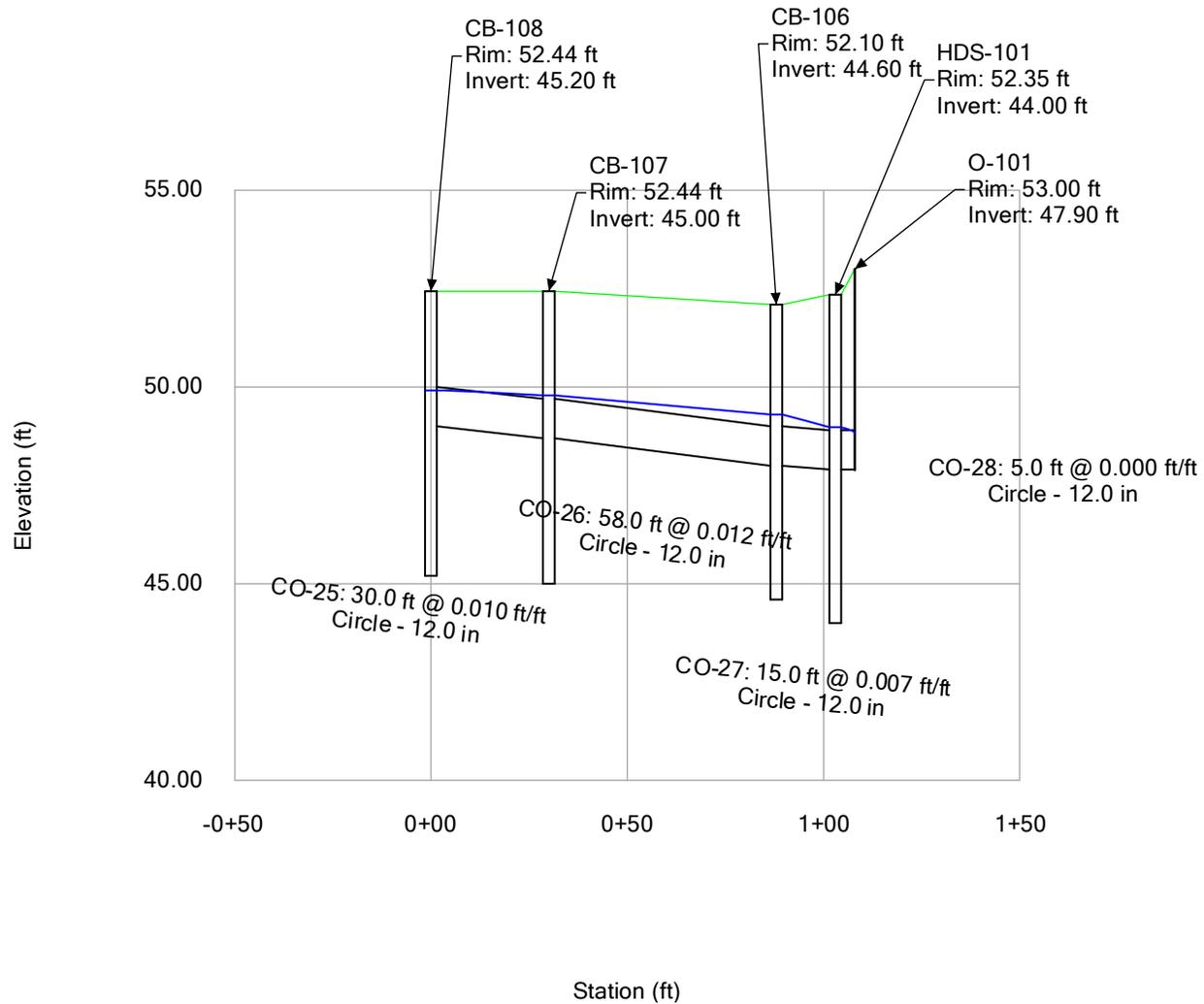
Profile Report

Engineering Profile - CB-102 to P-102 (C-STMC-2302349-2024-05-28.stsw)



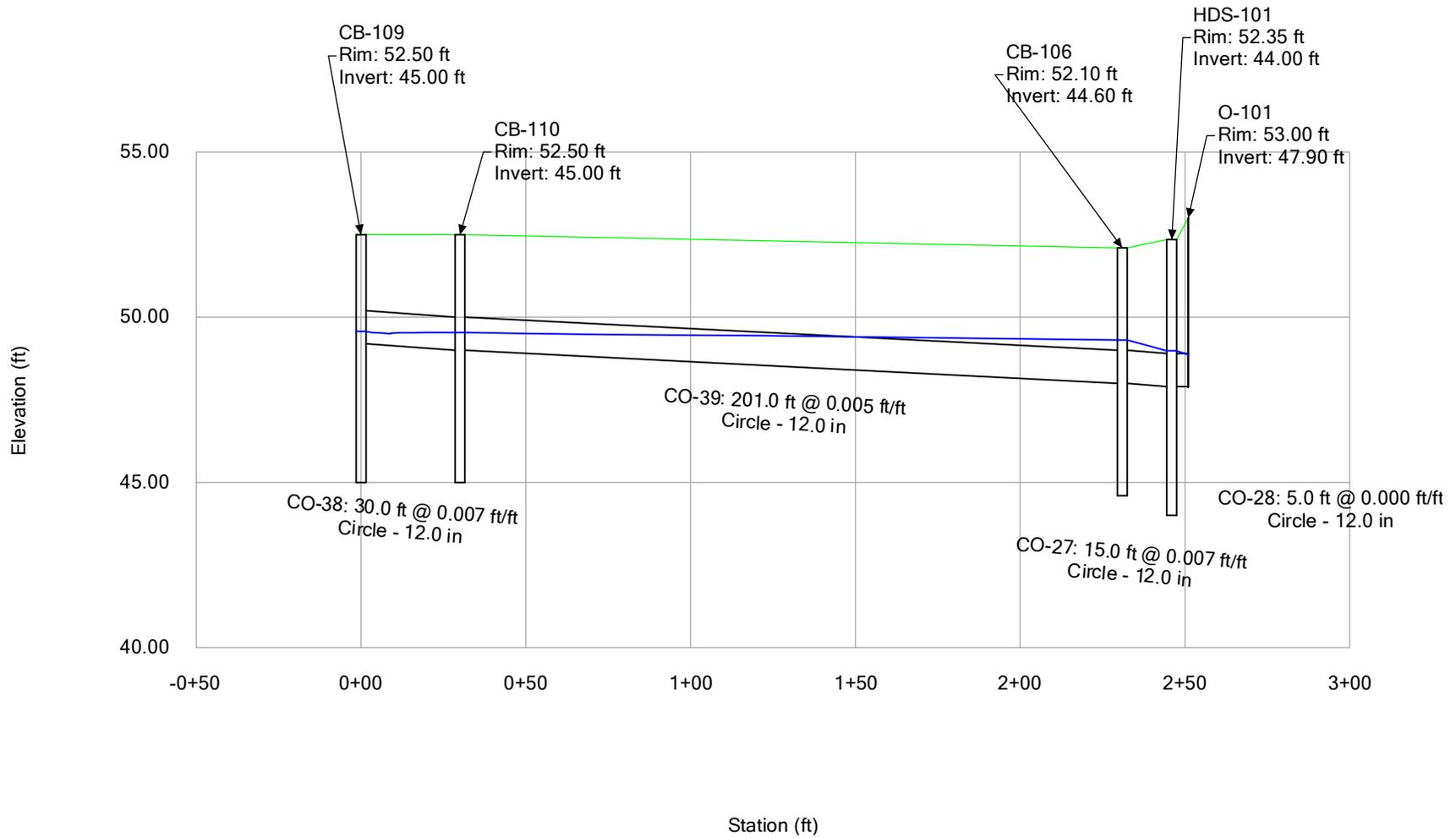
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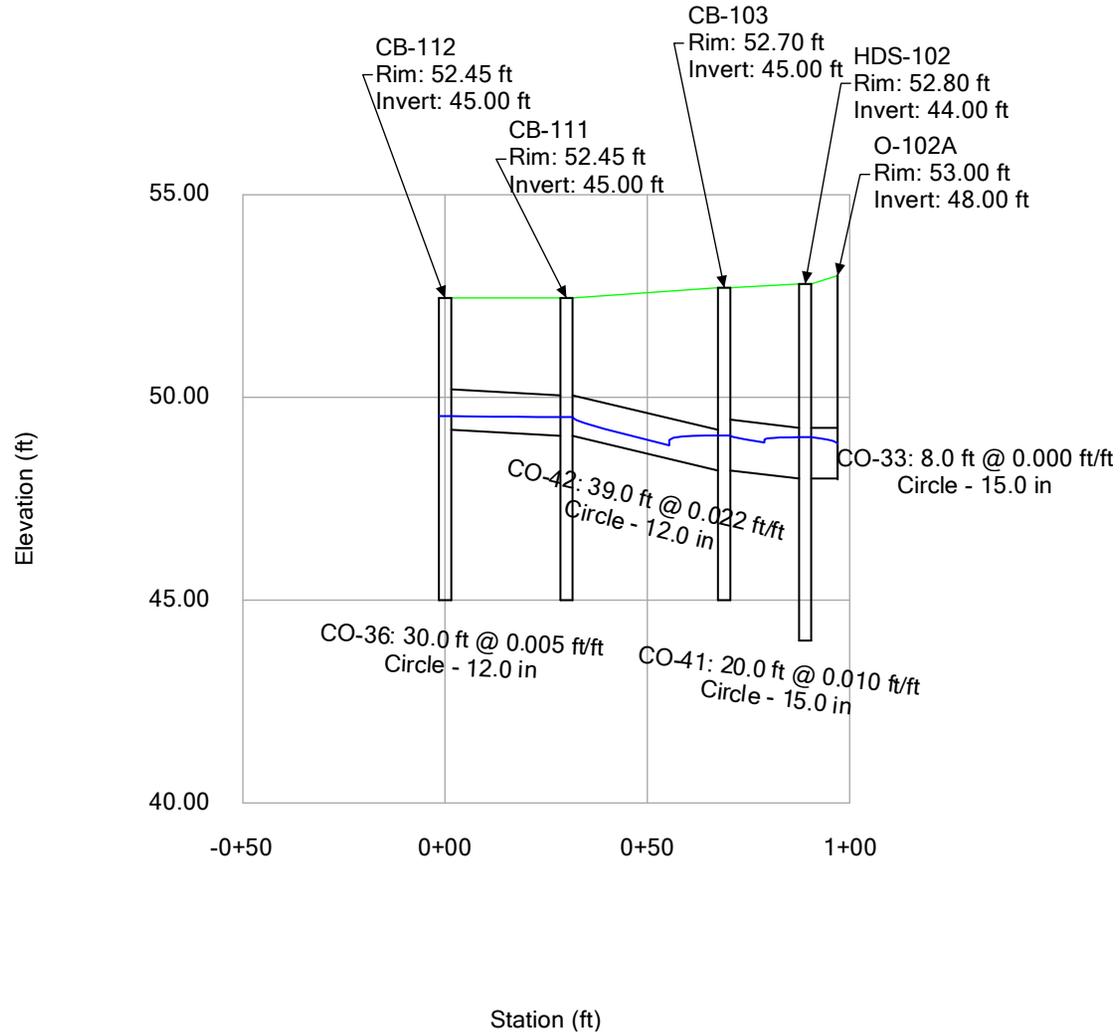
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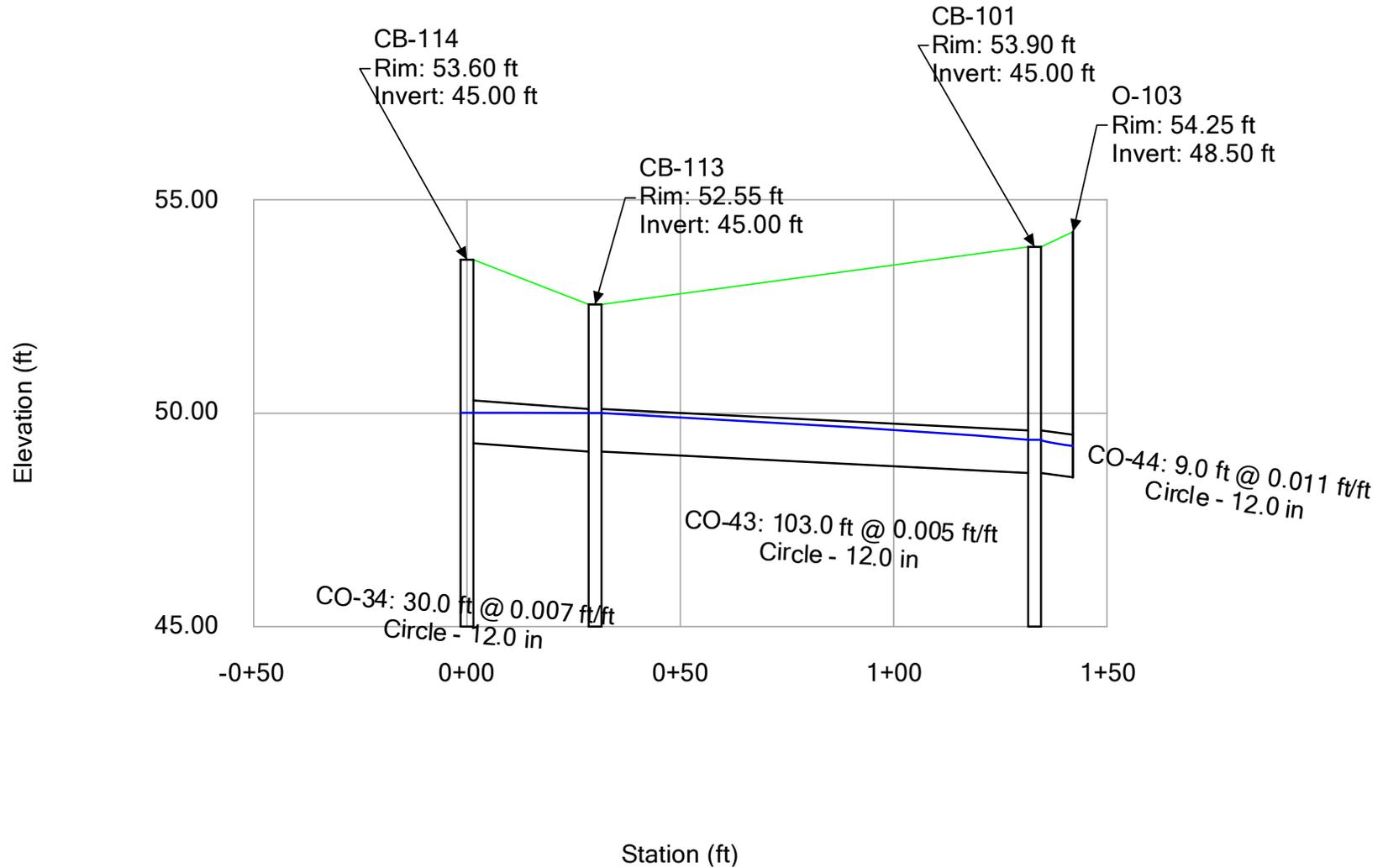
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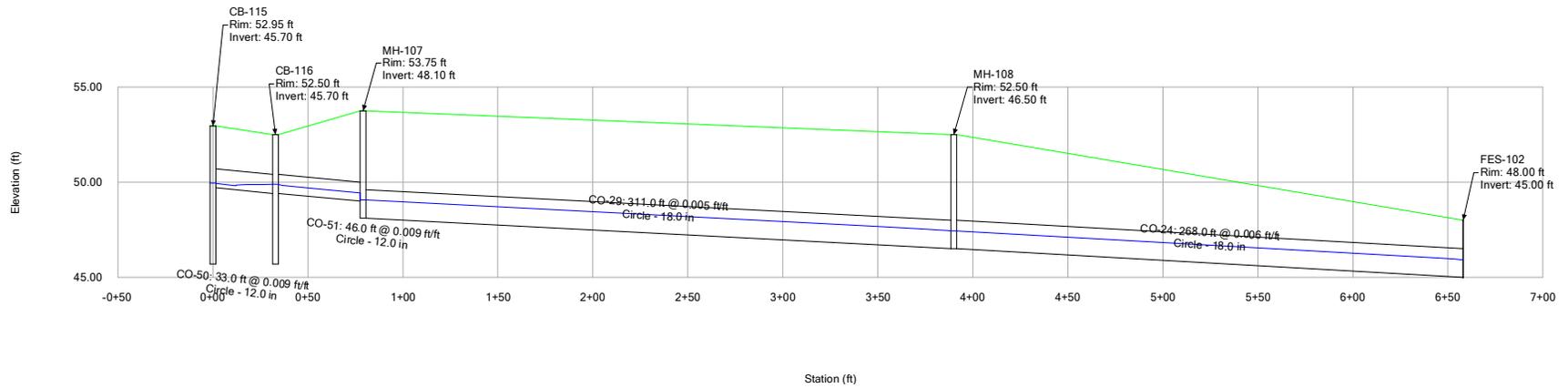
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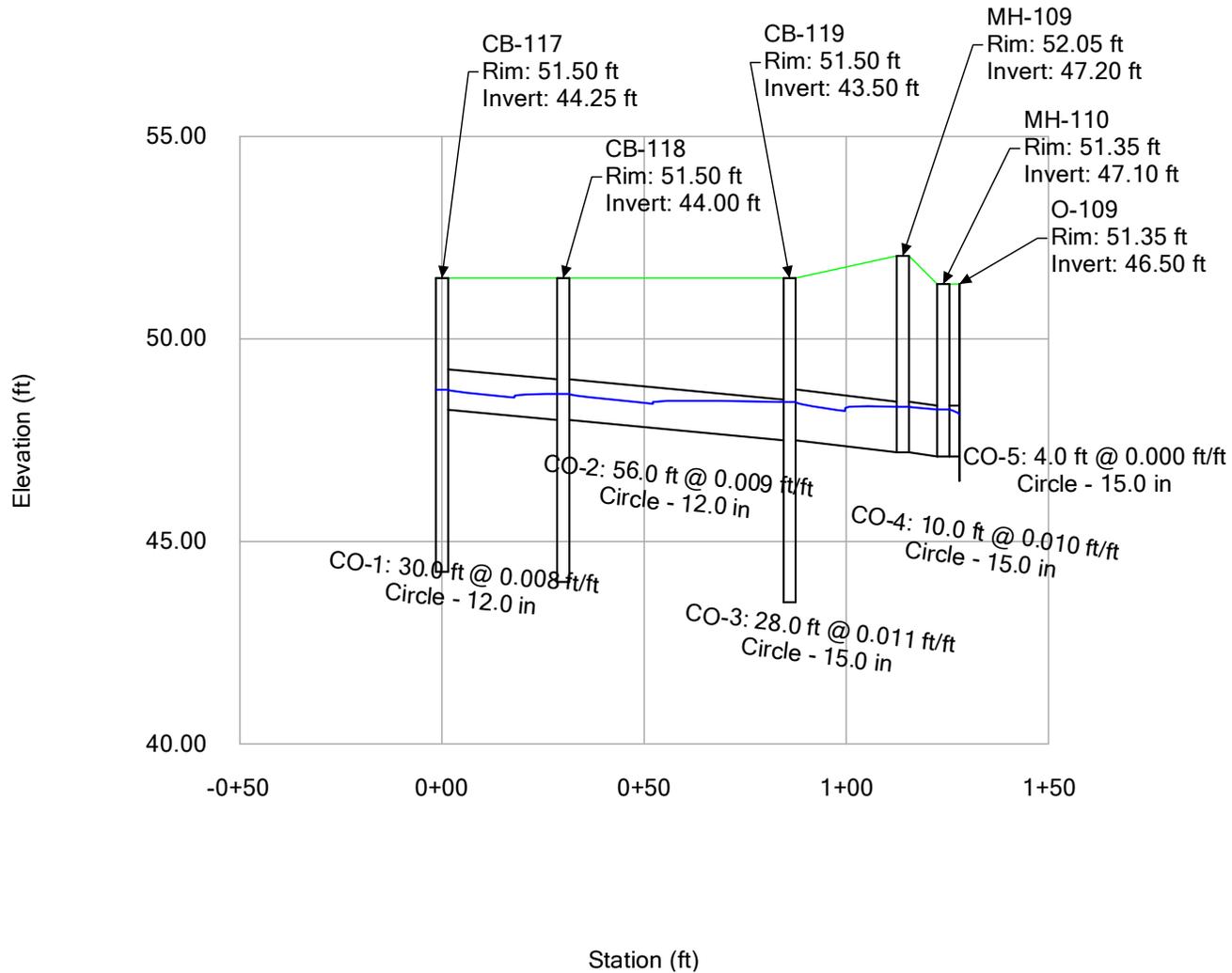
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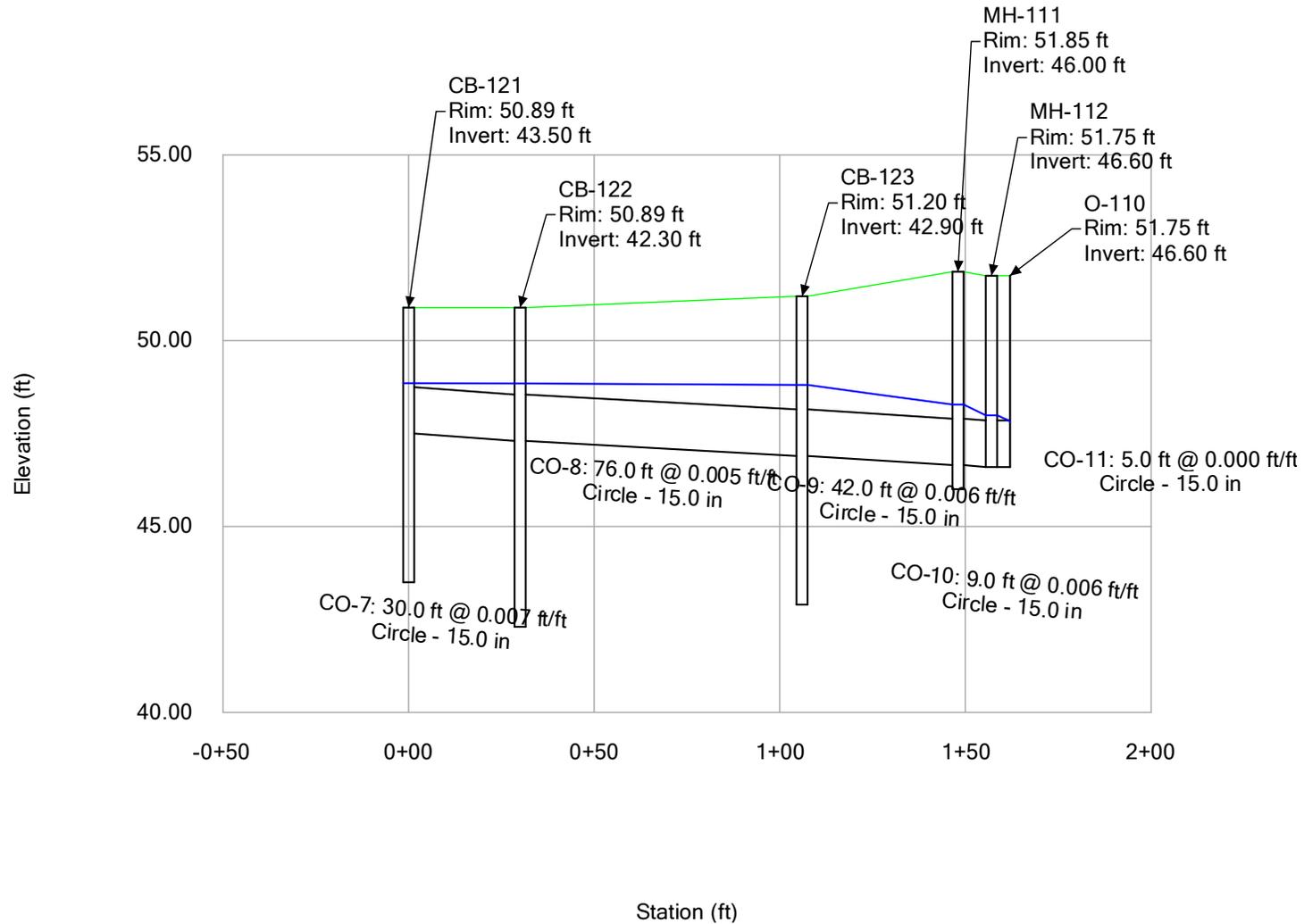
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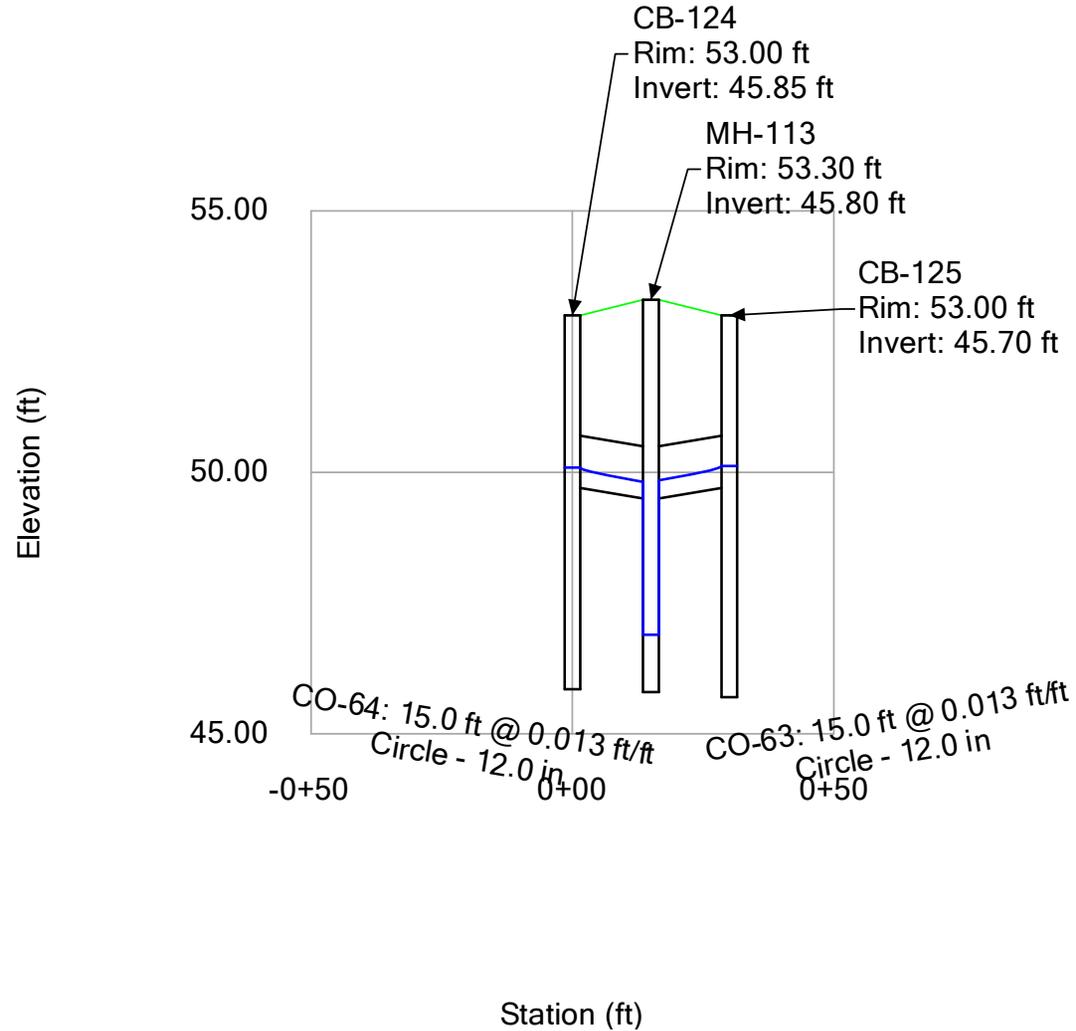
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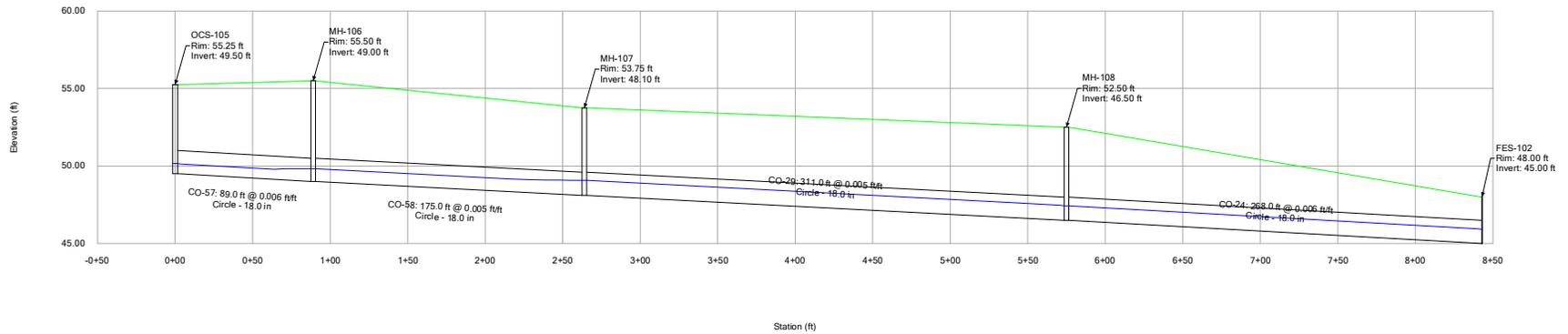
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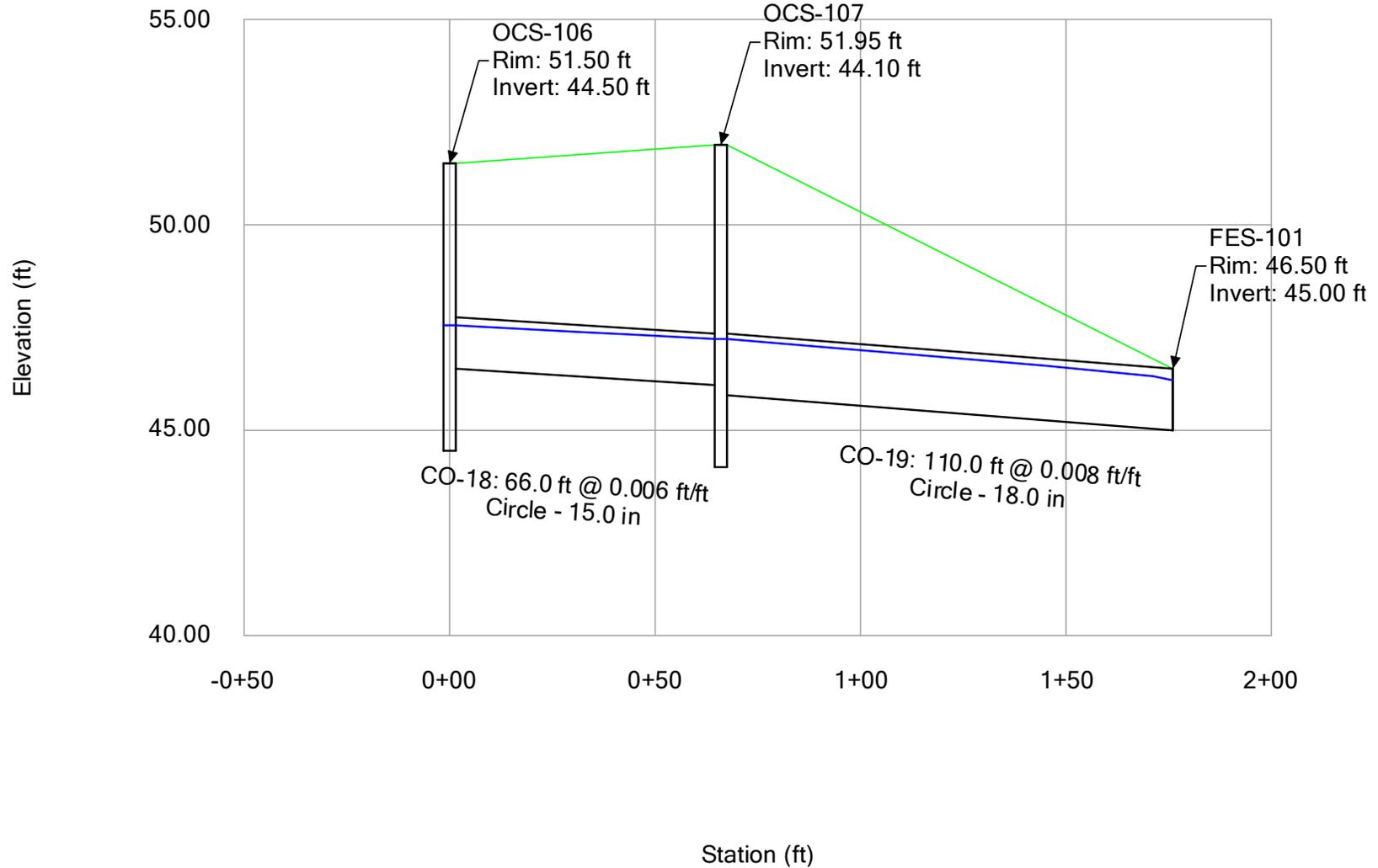
Profile Report

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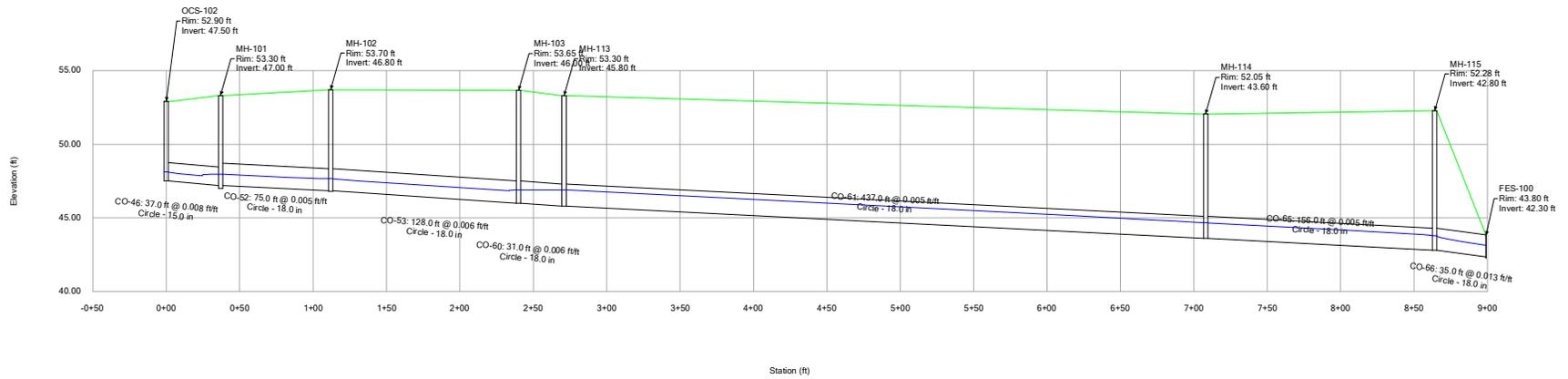
Profile Report

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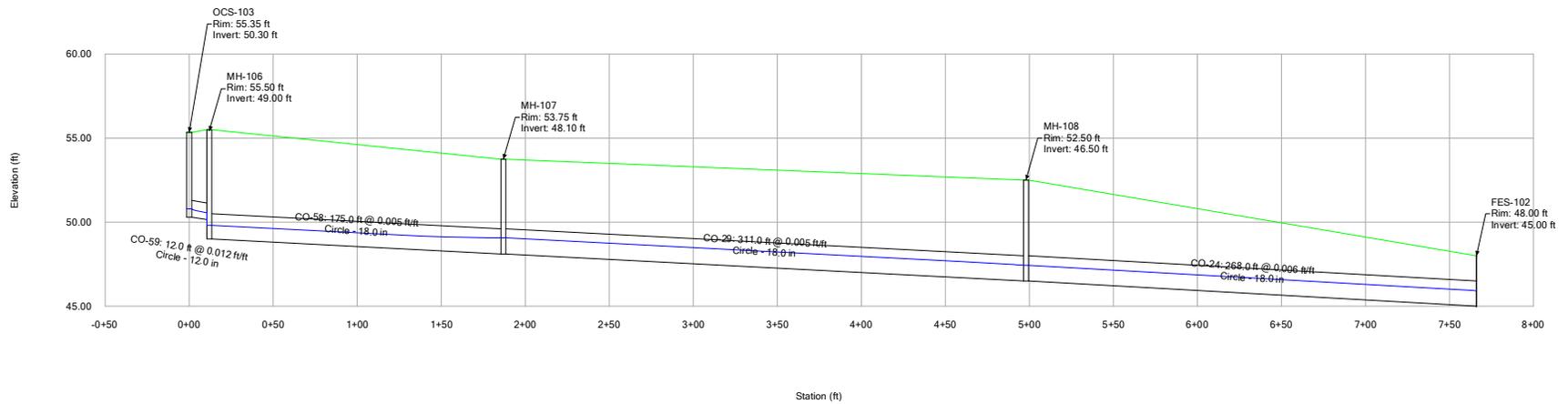
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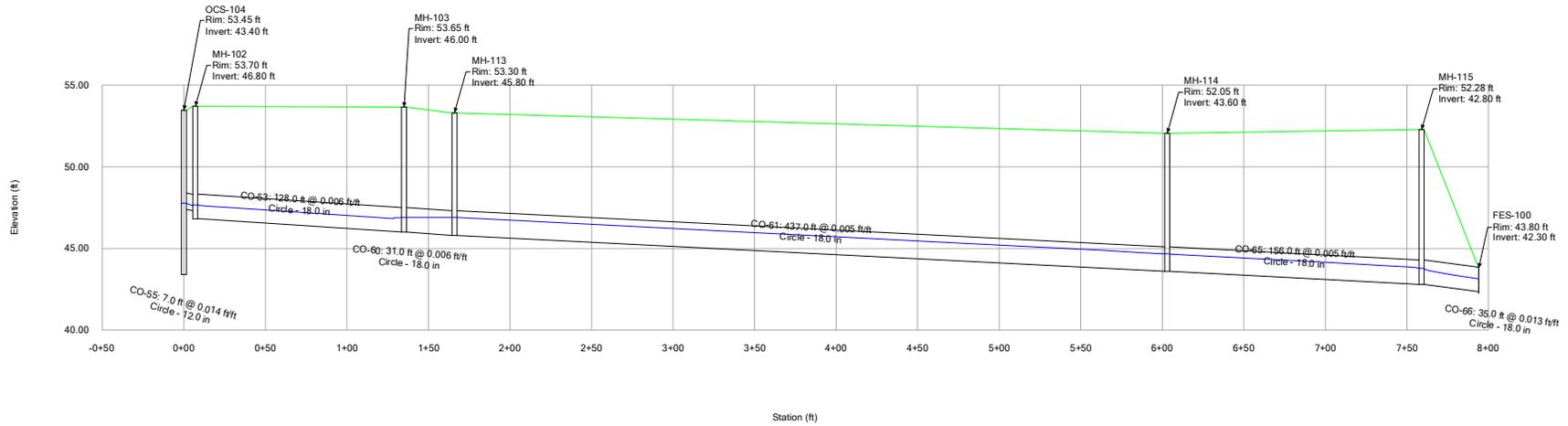
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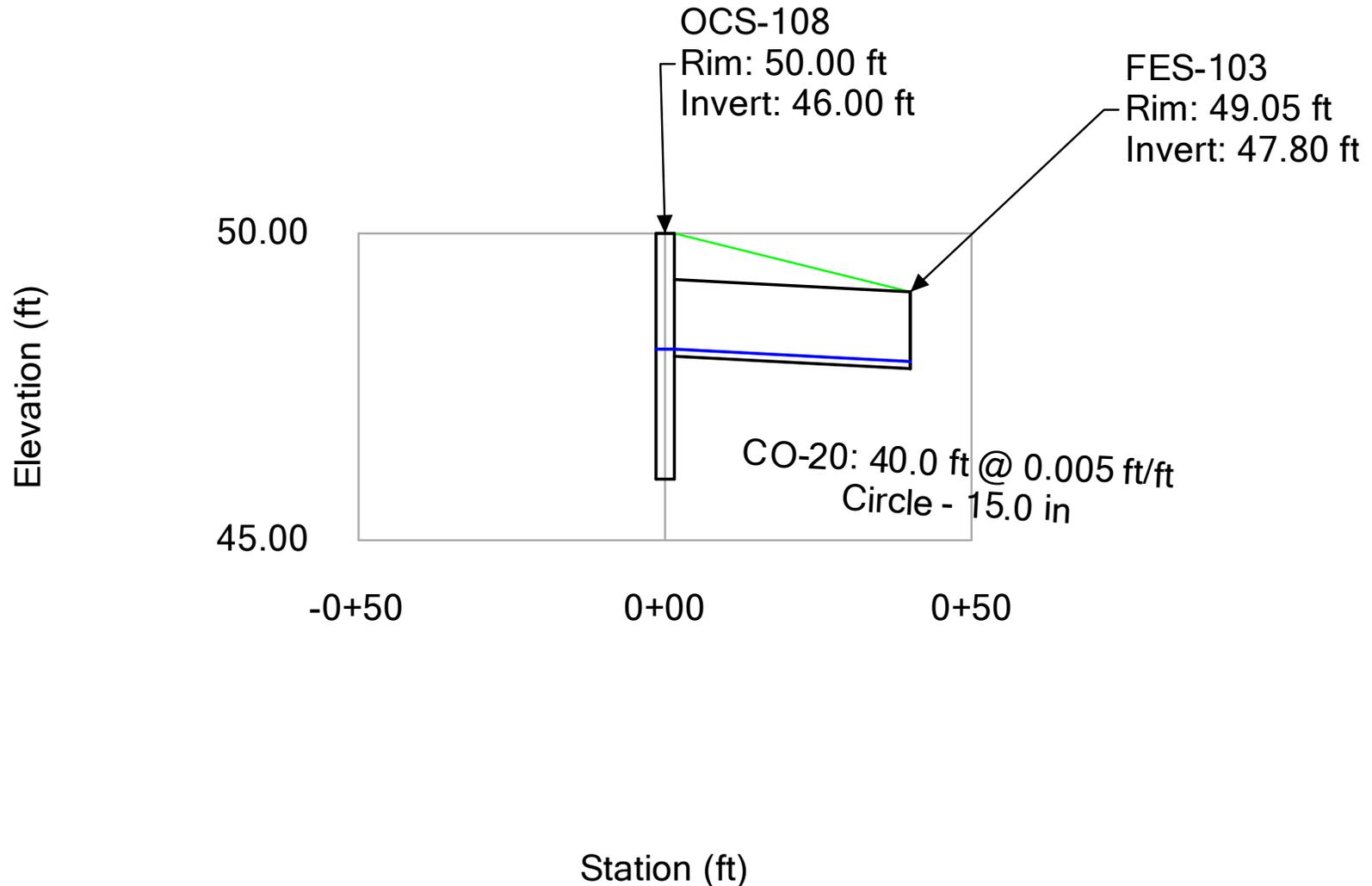


Profile Report

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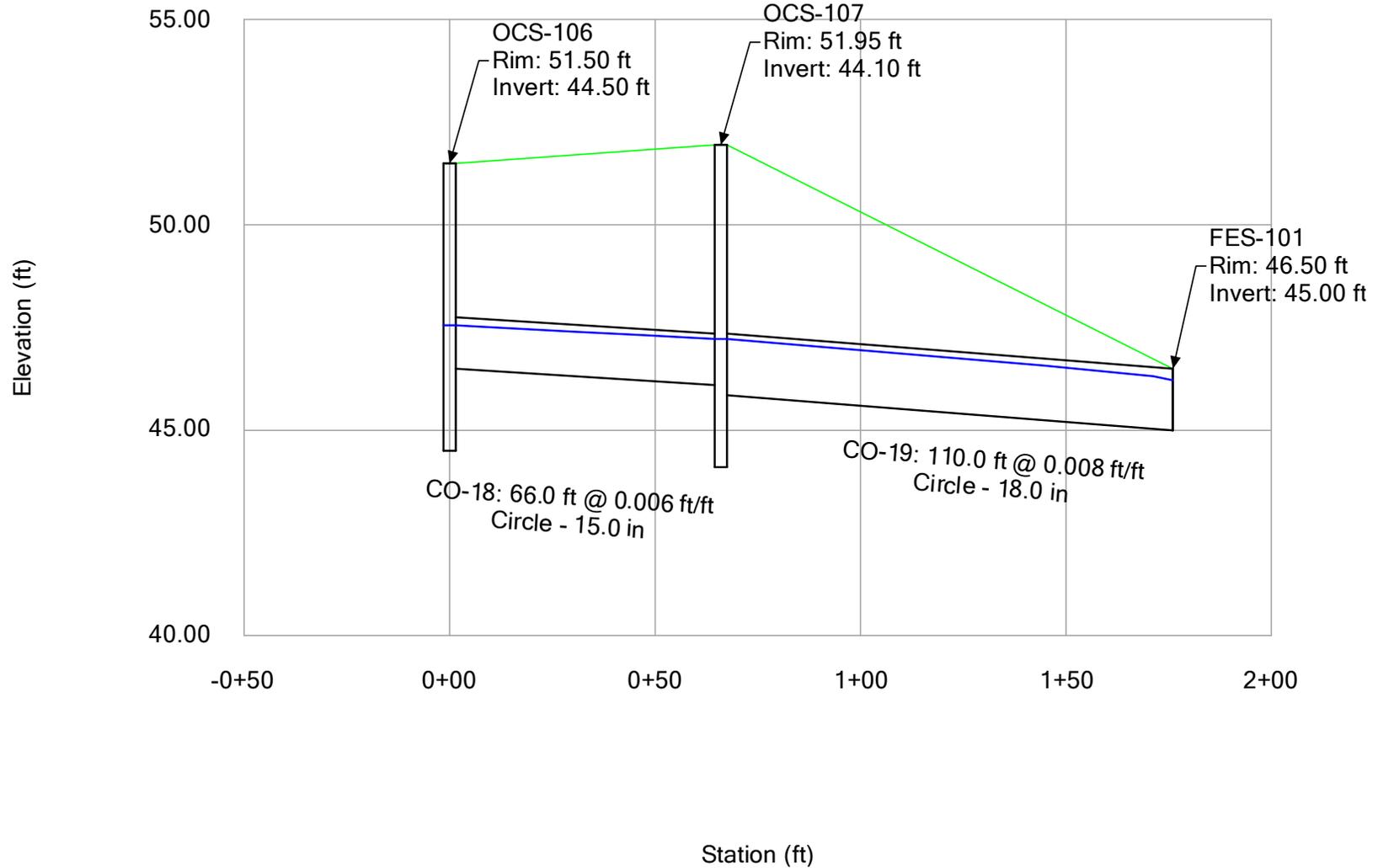


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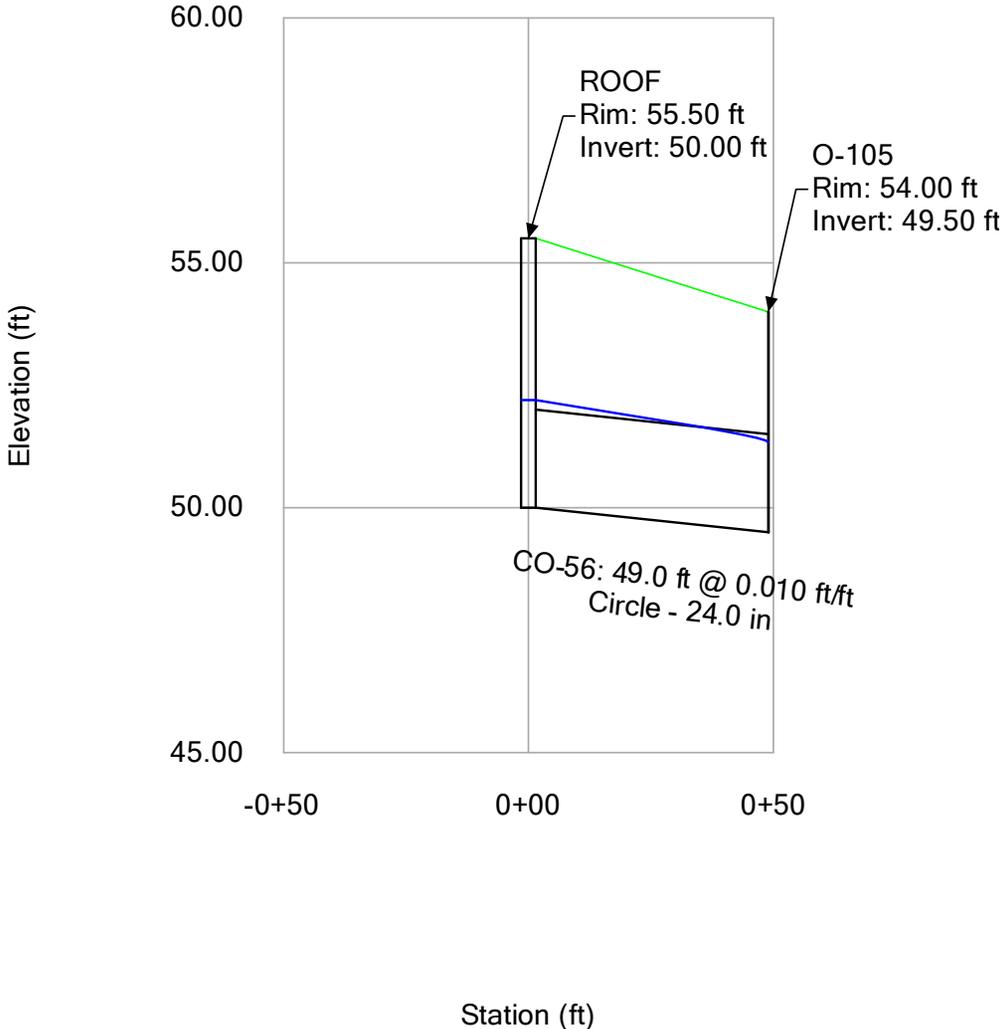


Profile Report

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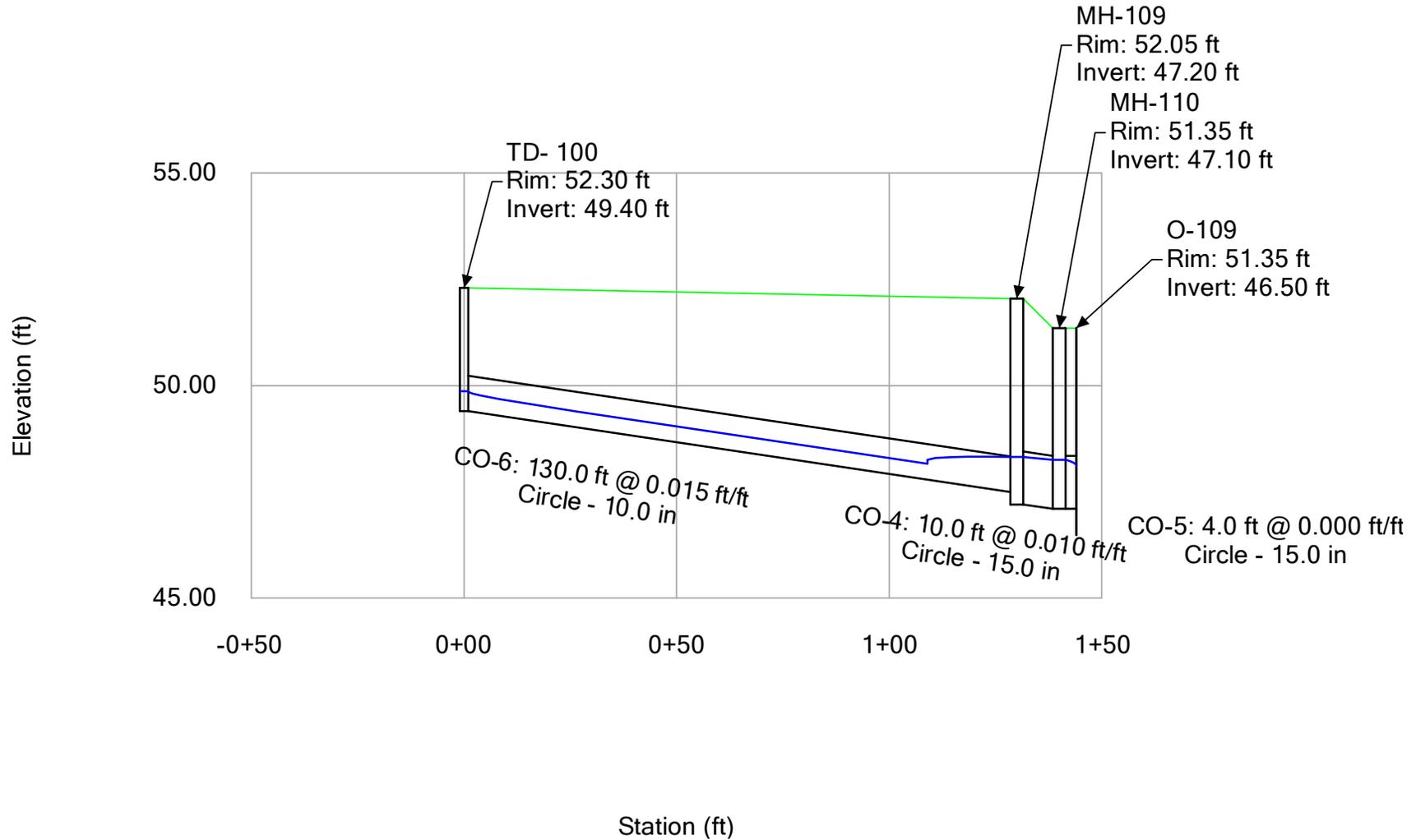


Profile Report
Engineering Profile - ROOF to P-105 (C-STMC-2302349-2024-05-28.stsw)



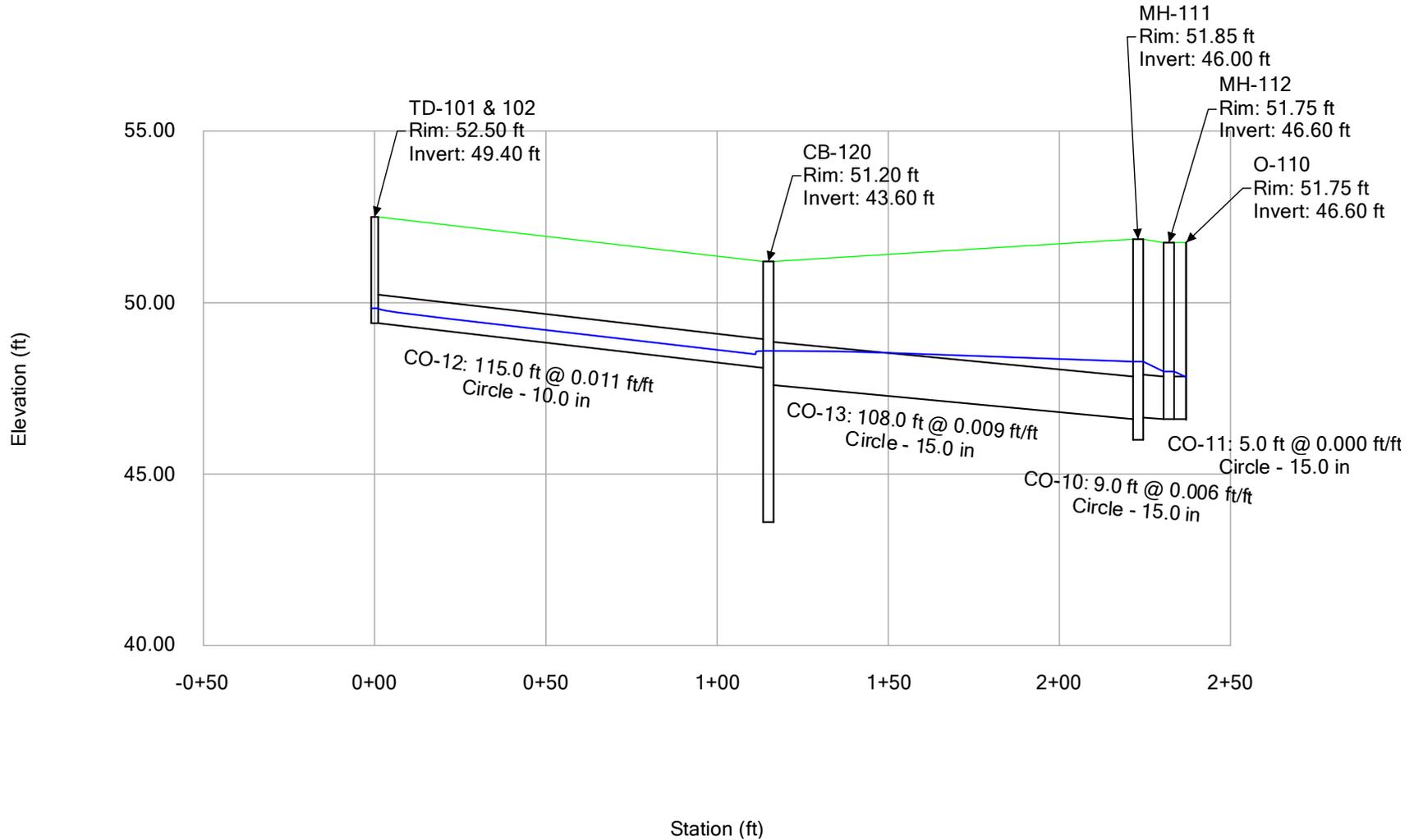
Profile Report

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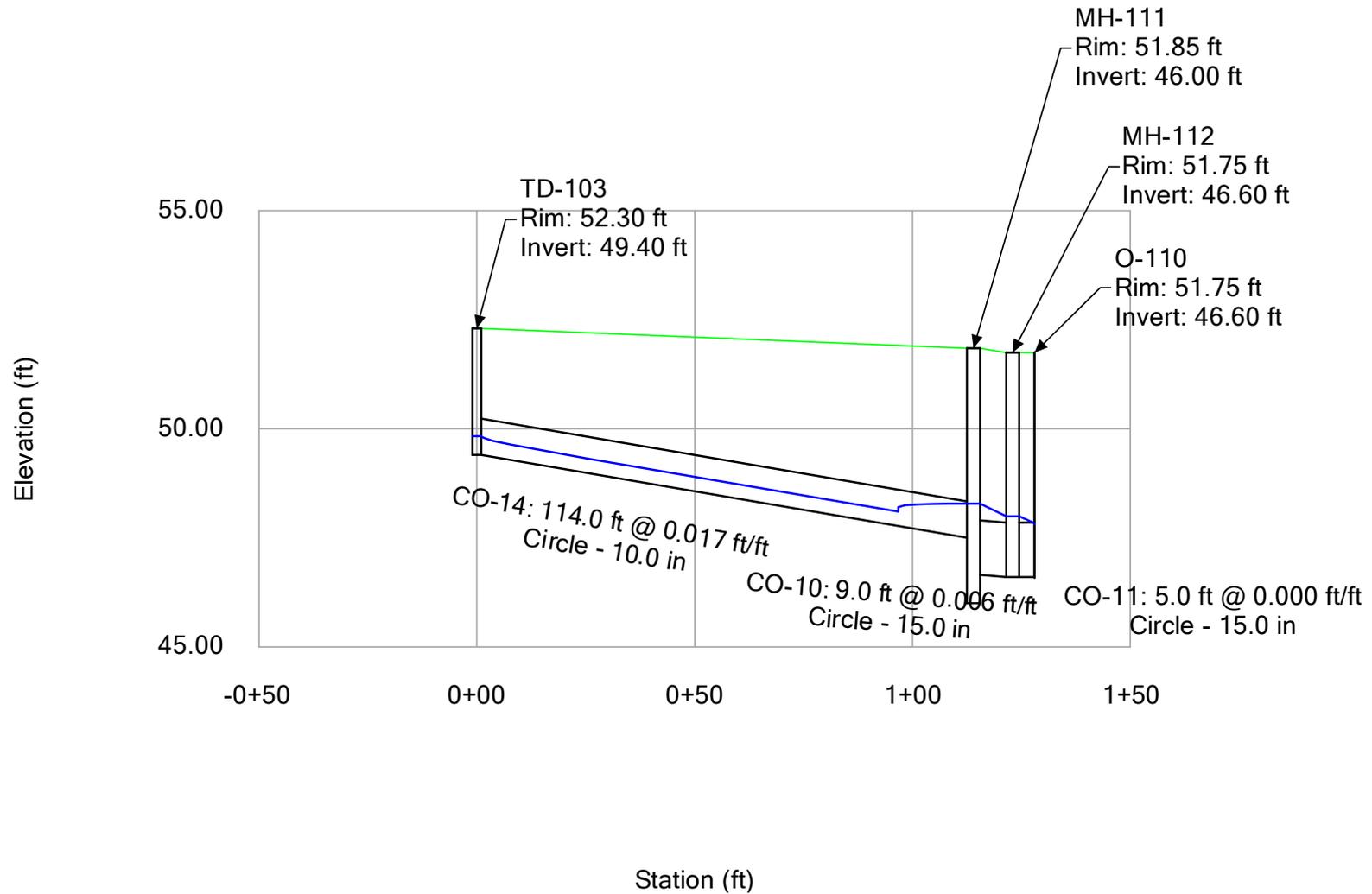
Profile Report

Engineering Profile - TD-101 to P-107 (C-STMC-2302349-2024-05-28.stsw)



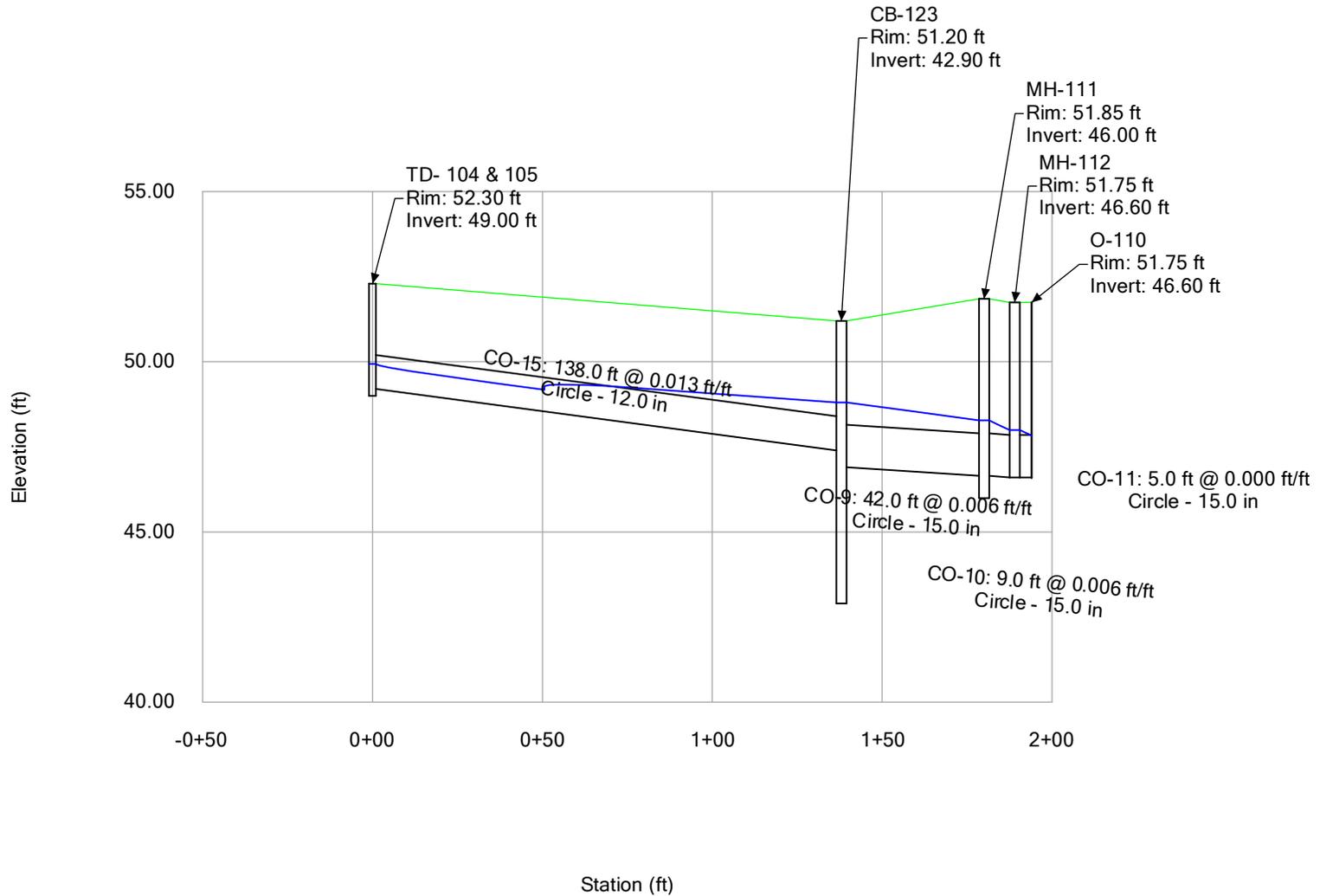
Profile Report

Engineering Profile - TD-103 to P-107 (C-STMC-2302349-2024-05-28.stsw)



Profile Report

Engineering Profile - TD-104&105 to P-107 (C-STMC-2302349-2024-05-28.stsw)



APPENDIX F

WATER QUALITY CALCULATIONS

Water Quality Calculations

Standard 1 - Determine Water Quality Volume

From CT 2024 Stormwater Quality Manual:

$$WQV = \frac{(1.3'')(R)(A)}{12}$$

$$R = 0.05 + 0.009(I)$$

WQV = water quality volume (ft³)

R = volumetric runoff coefficient

I = post- development impervious area (percent) after application of non-structural LID site planning and design strategies and before application of structural stormwater BMPs

A = post-development total drainage area of site or design point (square feet)

Area ID	Drainage Area	Total Area		Impervious Area		Impervious Cover	Volumetric Runoff Coefficient	Water Quality Volume (WQV) Required	Water Quality Volume Provided
		ac	ft ²	ac	ft ²	%	R	ft ³	ft ³
SWMB P-101	PDA-101	2.250	98,017	0.952	41,468	42.31	0.431	4,577	5,403
SWMB P-102	PDA-102	2.017	87,844	1.730	75,345	85.77	0.822	7,823	6,520
SWMB P-103	PDA-103	0.554	24,111	0.504	21,952	90.97	0.869	2,270	419
SWMB P-104	PDA-105	0.400	17,421	0.367	15,999	91.75	0.876	1,653	419
SWMB P-105	PDA-108	4.227	184,140	4.227	184,140	100.00	0.950	18,951	21,240
SWMB P-106	PDA-109	0.264	11,483	0.180	7,858	68.18	0.664	826	1,578
SWMB P-107	PDA-110	2.086	90,871	1.938	84,435	92.91	0.886	8,722	2,339

Notes: The provided Water Quality Volumes for the Underground Detention Systems were derived from the Stage Volume tables in HydroCAD as the volume below the first orifice elevation for each system.

Groundwater Recharge Volume Calculations

Groundwater Recharge Volume

From CT 2004 Stormwater Quality Manual:

$$GVR = \frac{(D)(A)(I)}{12}$$

GRV Groundwater Recharge Volume (ac-ft)
 D = Depth of Runoff to be Recharged (table 7-4)
 A = site area in acres
 I = impervious cover (decimal)

Area ID	A				I				Site Imperviousness (Decimal) by NRCS Hydrologic Soil Group				GRV Required		Potential Recharge Pond Volumes Proposed		
	Total Site Area (AC)	Site Area by NRCS Hydrologic Soil Group				Impervious Cover by NRCS Hydrologic Soil Group								(ac-ft)	(cu ft)	(ac-ft)	(cu ft)
		A	B	C	D	A	B	C	D	A	B	C	D				
Site	20.17	6.51	13.66	0.00	0.00	3.23	8.58	0.00	0.00	0.16	0.43	0.00	0.00	0.156	6,787	1.882	81,970

Table from 2004 Connecticut Stormwater Quality Manual

NRCS Hydrologic Soil Group	Average Annual Recharge	Groundwater Recharge Depth (D)
A	18 inches/year	0.4 inches
B	12 inches/year	0.25 inches
C	6 inches/year	0.10 inches
D	3 inches/year	0 inches (waived)

NRCS Hydrologic Soil	Groundwater Recharge
A	0.40
B	0.25
C	0.10
D	0.00

Source: MADEP, 1997.
 NRCS – Natural Resources Conservation Service

Water Quality Calculations

Standard 1 - Determine Water Quality Flow

From CT 2024 Stormwater Quality Manual:

$$CN = \frac{1000}{\left[10 + 5P + 10Q - 10(Q^2 + 1.25QP)^{\frac{1}{2}}\right]}$$

$$Q = \frac{\left[WQV(\text{cubic feet}) \times [12(\text{inches/foot})] \times \left[\left(\frac{1 \text{ acre}}{43,560 \text{ square feet}} \right) \right] \right]}{\text{DrainageArea}(\text{acres})}$$

$$WQF = (q_u)(A)(Q)$$

CN = Runoff Curve Number

P = design precipitation, inches, (1.3" for 100% of the WQV and 0.65 inches for 50% of the WQV)

Q = runoff depth (in watershed inches)

T_c = time of concentration

I_a = Initial abstraction, inches, from Table 4-1, Chapter 4, TR-55

q_u = unit peak discharge,

WQF = water quality flow (cfs)

WQV= design Water Quality Volume (100% or 50% of the WQV)

Hydrodynamic Separator	Total Area			Imp Area		Imp Cover	R	WQV	Q	P	CN	T _c		I _a	I _a /P	q _u *	WQF
	ft ²	ac	mi ²	ft ²	ac	%	-	acre-feet	in	in	-	mins	hours	in	-	cfs/mi ² /in	cfs
HDS-101	98,017	2.250	0.0035	41,468	0.952	42.31	0.431	0.081	0.43	1.00	93	20.8	0.35	0.151	0.151	450	0.68
HDS-102	87,844	2.017	0.0032	75,345	1.730	85.77	0.822	0.138	0.82	1.00	98	7.2	0.12	0.041	0.041	420	1.09
HDS-103	98,017	2.250	0.0035	41,468	0.952	42.31	0.431	0.081	0.43	1.00	93	5.0	0.08	0.151	0.151	450	0.68
HDS-104	87,844	2.017	0.0032	75,345	1.730	85.77	0.822	0.138	0.82	1.00	98	5.0	0.08	0.041	0.041	450	1.16
P-106	11,483	0.264	0.0004	7,858	0.180	68.18	0.664	0.015	0.68	1.00	97	5.0	0.08	0.062	0.062	450	0.13
P-107	90,871	2.086	0.0033	84,435	1.938	92.91	0.886	0.154	0.89	1.00	99	5.0	0.08	0.041	0.041	450	1.31

APPENDIX G
NCRS SOILS REPORT



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for State of Connecticut, Eastern Part



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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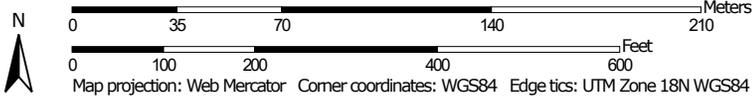
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:2,510 if printed on A landscape (11" x 8.5") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Eastern Part
 Survey Area Data: Version 1, Sep 15, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	2.1	6.7%
29A	Agawam fine sandy loam, 0 to 3 percent slopes	20.6	67.1%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	0.6	2.0%
34B	Merrimac fine sandy loam, 3 to 8 percent slopes	4.0	13.0%
38C	Hinckley loamy sand, 3 to 15 percent slopes	3.1	10.2%
306	Udorthents-Urban land complex	0.3	0.9%
Totals for Area of Interest		30.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

Custom Soil Resource Report

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

State of Connecticut, Eastern Part

17—Timakwa and Natchaug soils, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t2qx
Elevation: 0 to 1,420 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Timakwa and similar soils: 45 percent
Natchaug and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Timakwa

Setting

Landform: Depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous and woody organic material over sandy and gravelly glaciofluvial deposits

Typical profile

Oa1 - 0 to 12 inches: muck
Oa2 - 12 to 37 inches: muck
2Cg1 - 37 to 47 inches: very gravelly loamy coarse sand
2Cg2 - 47 to 60 inches: gravelly loamy very fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 14.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY042NY - Semi-Rich Organic Wetlands
Hydric soil rating: Yes

Description of Natchaug

Setting

Landform: Depressions, depressions, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material over loamy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy till

Typical profile

Oa1 - 0 to 12 inches: muck
Oa2 - 12 to 31 inches: muck
2Cg1 - 31 to 39 inches: silt loam
2Cg2 - 39 to 79 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.01 to 14.17 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 17.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY042NY - Semi-Rich Organic Wetlands
Hydric soil rating: Yes

Minor Components

Whitman

Percent of map unit: 7 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Catden

Percent of map unit: 3 percent
Landform: Depressions, depressions, fens, depressions, kettles, marshes, bogs, swamps
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave

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Hydric soil rating: Yes

Maybid

Percent of map unit: 3 percent

Landform: Drainageways, terraces, depressions

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

Scarboro

Percent of map unit: 2 percent

Landform: Drainageways, outwash deltas, depressions, outwash terraces

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope, tread, dip

Down-slope shape: Concave

Across-slope shape: Linear, concave

Hydric soil rating: Yes

29A—Agawam fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tyqw

Elevation: 0 to 1,040 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 250 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Agawam and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Agawam

Setting

Landform: Moraines, kames, kame terraces, outwash plains, outwash terraces

Landform position (two-dimensional): Backslope, shoulder, footslope, summit

Landform position (three-dimensional): Side slope, crest, tread, riser, rise, dip

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from gneiss, granite, schist, and/or phyllite

Typical profile

Ap - 0 to 11 inches: fine sandy loam

Bw1 - 11 to 16 inches: fine sandy loam

Bw2 - 16 to 26 inches: fine sandy loam

2C1 - 26 to 39 inches: loamy fine sand

Custom Soil Resource Report

2C2 - 39 to 55 inches: loamy fine sand

2C3 - 55 to 65 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 15 to 35 inches to strongly contrasting textural stratification

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: B

Ecological site: F145XY008MA - Dry Outwash

Hydric soil rating: No

Minor Components

Ninigret

Percent of map unit: 5 percent

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Concave

Hydric soil rating: No

Windsor

Percent of map unit: 4 percent

Landform: Dunes, deltas, outwash terraces, outwash plains

Landform position (three-dimensional): Tread, riser

Down-slope shape: Convex, linear

Across-slope shape: Convex, linear

Hydric soil rating: No

Walpole

Percent of map unit: 3 percent

Landform: Deltas, depressions, outwash terraces, depressions, outwash plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread, talf, dip

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

Hinckley

Percent of map unit: 3 percent

Landform: Deltas, kames, eskers, outwash plains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise

Down-slope shape: Convex

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Across-slope shape: Convex, linear
Hydric soil rating: No

29B—Agawam fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyqx
Elevation: 0 to 820 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Agawam and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Agawam

Setting

Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist and/or phyllite

Typical profile

Ap - 0 to 11 inches: fine sandy loam
Bw1 - 11 to 16 inches: fine sandy loam
Bw2 - 16 to 26 inches: fine sandy loam
2C1 - 26 to 45 inches: loamy fine sand
2C2 - 45 to 55 inches: loamy fine sand
2C3 - 55 to 65 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 15 to 35 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Custom Soil Resource Report

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: B

Ecological site: F145XY008MA - Dry Outwash

Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 5 percent

Landform: Outwash terraces

Landform position (three-dimensional): Riser, tread

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F145XY008MA - Dry Outwash

Hydric soil rating: No

Ninigret

Percent of map unit: 4 percent

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Concave

Hydric soil rating: No

Walpole

Percent of map unit: 3 percent

Landform: Deltas, depressions, outwash terraces, depressions, outwash plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread, talf, dip

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

Hinckley

Percent of map unit: 3 percent

Landform: Eskers

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F145XY008MA - Dry Outwash

Hydric soil rating: No

34B—Merrimac fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyqs

Elevation: 0 to 1,290 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Custom Soil Resource Report

Frost-free period: 140 to 240 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Merrimac and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Merrimac

Setting

Landform: Outwash plains, outwash terraces, moraines, eskers, kames

Landform position (two-dimensional): Backslope, footslope, summit, shoulder

Landform position (three-dimensional): Side slope, crest, riser, tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy glaciofluvial deposits derived from granite, schist, and gneiss over sandy and gravelly glaciofluvial deposits derived from granite, schist, and gneiss

Typical profile

Ap - 0 to 10 inches: fine sandy loam

Bw1 - 10 to 22 inches: fine sandy loam

Bw2 - 22 to 26 inches: stratified gravel to gravelly loamy sand

2C - 26 to 65 inches: stratified gravel to very gravelly sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 2 percent

Maximum salinity: Nonsaline (0.0 to 1.4 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: A

Ecological site: F145XY008MA - Dry Outwash

Hydric soil rating: No

Minor Components

Sudbury

Percent of map unit: 5 percent

Landform: Deltas, terraces, outwash plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread, dip

Down-slope shape: Concave

Across-slope shape: Linear

Custom Soil Resource Report

Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent

Landform: Deltas, kames, eskers, outwash plains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise

Down-slope shape: Convex

Across-slope shape: Convex, linear

Hydric soil rating: No

Windsor

Percent of map unit: 3 percent

Landform: Outwash terraces, dunes, deltas, outwash plains

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Tread, riser

Down-slope shape: Linear, convex

Across-slope shape: Linear, convex

Hydric soil rating: No

Agawam

Percent of map unit: 2 percent

Landform: Outwash plains, outwash terraces, moraines, stream terraces, eskers, kames

Landform position (three-dimensional): Rise

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

38C—Hinckley loamy sand, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svmb

Elevation: 0 to 1,290 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces

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Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope, summit

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 8 inches: loamy sand

Bw1 - 8 to 11 inches: gravelly loamy sand

Bw2 - 11 to 16 inches: gravelly loamy sand

BC - 16 to 19 inches: very gravelly loamy sand

C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: F144AY022MA - Dry Outwash

Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 5 percent

Landform: Kame terraces, moraines, eskers, kames, outwash deltas, outwash terraces, outwash plains

Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope, summit

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent

Landform: Kames, outwash plains, outwash terraces, moraines, eskers

Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope, summit

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Landform position (three-dimensional): Side slope, crest, head slope, nose slope, riser, tread

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Agawam

Percent of map unit: 3 percent

Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces

Landform position (two-dimensional): Shoulder, backslope, toeslope, summit, footslope

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

Sudbury

Percent of map unit: 2 percent

Landform: Outwash deltas, moraines, outwash plains, kame terraces, outwash terraces

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Base slope, tread

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Hydric soil rating: No

306—Udorthents-Urban land complex

Map Unit Setting

National map unit symbol: 9lmg

Elevation: 0 to 2,000 feet

Mean annual precipitation: 43 to 56 inches

Mean annual air temperature: 45 to 55 degrees F

Frost-free period: 120 to 185 days

Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 50 percent

Urban land: 39 percent

Minor components: 11 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Parent material: Human-transported material

Typical profile

^A - 0 to 5 inches: loam

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^C1 - 5 to 21 inches: gravelly loam

^C2 - 21 to 79 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Hydric soil rating: No

Description of Urban Land

Typical profile

M - 0 to 6 inches: cemented material

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Hydric soil rating: Unranked

Minor Components

Udorthents, wet substratum

Percent of map unit: 9 percent

Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent

Landform: Hills

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

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