Stormwater Management Report

SELF-STORAGE DEVELOPMENT

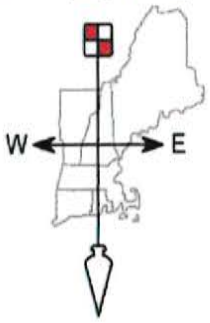
NON-RESIDENTIAL SITE PLAN

Project Location:
Tax Map 2, Lot 37-A
Fitchburg Road
Greenville, NH

Prepared for:
Michael D. Lamarre
P.O. Box 495
Greenville, NH 03048

Date: August 24, 2023
Revised: N/A

Surveying ♦ Engineering ♦ Land Planning ♦ Permitting ♦ Septic Designs



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STORMWATER MANAGEMENT REPORT
TAX MAP 2, LOT 37-A
GREENVILLE, NEW HAMPSHIRE

Prepared for:
Michael D. Lamarre
P.O. Box 495
Greenville, NH

May 25, 2022

I) INTRODUCTION

The following are stormwater drainage calculations for Tax Map Parcel 2-37-A. The parcel encompass a total of approximately 6.75 acres on the east side of Fitchburg Road (NH Route 31) and is bordered by a recycling facility to the south, commercial developments to the north, self-storage facility to the east and undeveloped land to the west. This project will consist of consist of constructing 7 self-storage buildings totaling 42,500 Sf along with associated site improvements on the Lot 2-37-A.

The purpose of this report is to analyze the qualitative and quantitative impacts of the proposed development. The objective of the proposed stormwater management system for this project is to mitigate any increases resulting from the proposed development and to meet the drainage guidelines set forth in Section 7.G of the Town of Greenville's Non-Residential Site Plan Regulations.

II) SITE DESCRIPTION

The topography of the site is composed of mainly moderate slopes throughout and the entire site slopes from south to north draining to an existing brook which flows south to north, then west under Fitchburg Road. The brook flows along the eastern side of the subject parcel. The site is entirely woode. NRCS soil survey maps indicate that the soils on site consist of Marlow Fine Sandy Loam, Monadnock Fine Sandy Loam, and Lyme Fine Sandy Loam. These are Hydrologic Group (HSG) "C","B" and "B/D" soils, respectively.

III) METHODOLOGY

The quantity of runoff and the conveyance of that flow through the site are determined using the software package HydroCAD R 10.0-19 by HydroCAD Software Solutions, LLC. HydroCAD is a computer aided design program for modeling storm water hydrology based on the Soil Conservation Service (SCS) TR-20 method combined with standard hydraulics calculations used to model detention basins and culverts.

Stormwater management systems and erosion control are designed in accordance with the methodology for the "Best Management Practices" (BMP's), as outlined in the New Hampshire Storm Water Manual, Volume 2.

IV) DRAINAGE DESIGN

In accordance with the Town of Greenville's Non-Residential Site Plan requirements, the ten (10), twenty-five (25) and one-hundred (100) year frequency storm events have been evaluated. These design storms have been analyzed to compare the pre and post-development peak flow rates for the site (see attached comparison table).

Pre-Development Drainage Conditions:

As can be seen on the pre-development drainage plan, the watershed area is divided into nine subcatchments. Subcatchments E3S through E8S capture runoff from the existing self-storage facility to the east. The runoff from these subcatchments is self-contained in closed drainage system and treated by an existing detention basin. Subcatchments E1S and E2S drain to culverts under Old Mason Road and into the wetlands on site. The wetlands outlet through a 60" RCP culvert under Fitchburg Road which is taken as the observation point for this analysis (OP1).

Post-Development Drainage Conditions:
As can be seen on the post-development drainage plans, the applicant is proposing the development of 7 self-storage buildings with associated site improvements. The pre-development subcatchments are very similar to the post-development condition. Existing subcatchments E1S through E8S along with the existing drainage features treating those areas will remain unchanged. The only change is to existing subcatchment E9S which is now broken into 7 watershed areas due to the proposed development. The new subcatchments, S901 through S906, capture runoff from the proposed developments and drain into a closed drainage system consisting of 6 catch basins and 5 drainage manholes. The drainage system is treated and recharged by two subsurface infiltration chamber systems (nodes 3P & 2P). The chamber systems overflow to DMH3 (9P) which outlets the treated water to the wetlands and OP1.

V) SUMMARY

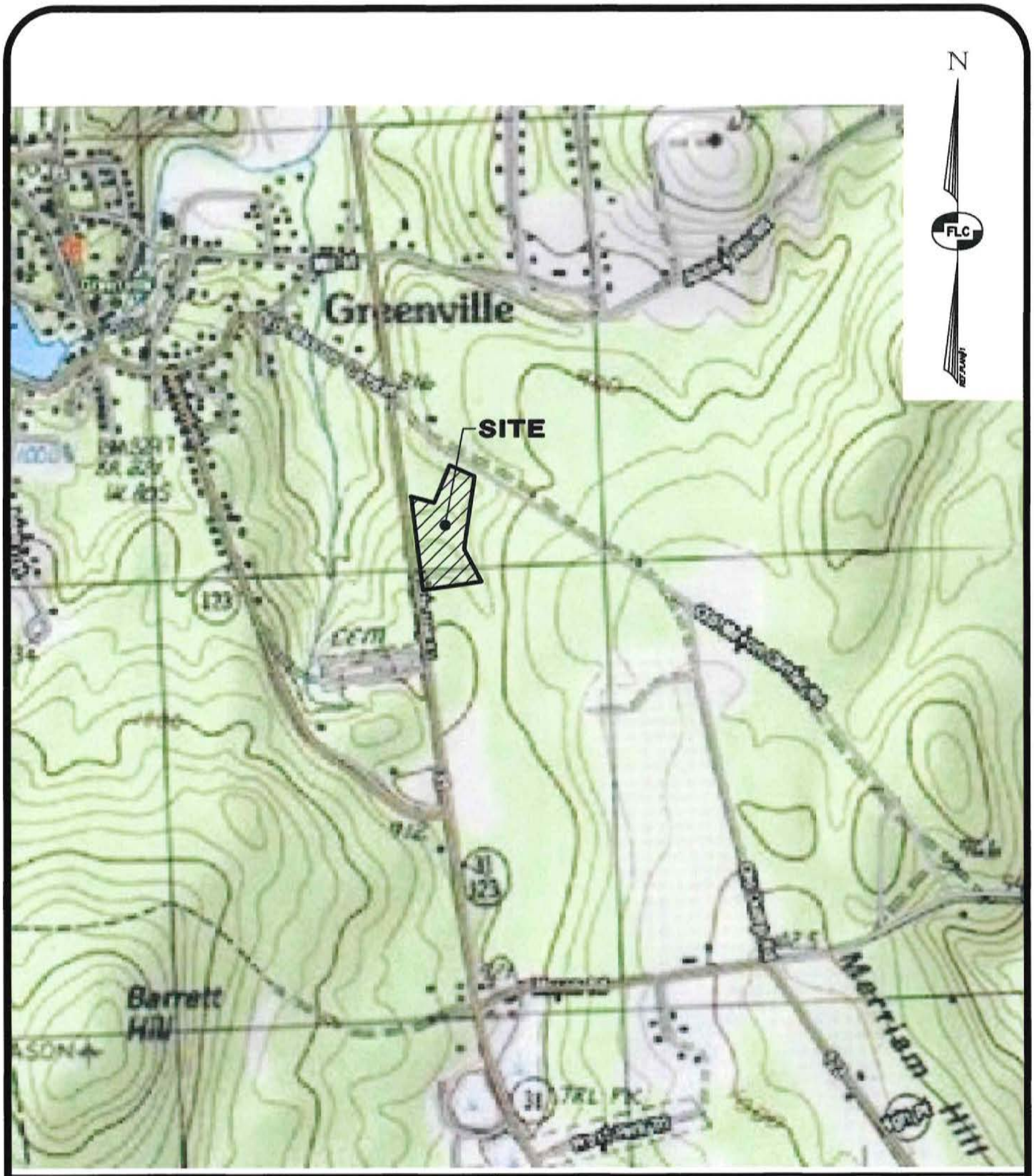
The intent of the stormwater management system for this project is to address the qualitative and quantitative aspects of the stormwater runoff so that there are no downstream adverse impacts created by the project. The proposed detention basin effectively mitigates any increases in stormwater runoff resulting from the proposed development.

The net result is that proposed buildings and parking areas will receive qualitative treatment and that due to the detention/retention capability of the proposed stormwater basin and there will be no increase in the peak rates of runoff leaving the site.

The following table is a summary of the attached calculations and shows a comparison of the peak flow rates at the outlet point for the site. The values presented are based on pre- and post-development conditions.

Table 1: Peak Flow Rates to Existing 60" RCP - OP1 - with Post-Development Detention

STORM FREQUENCY	PRE-DEV. RUNOFF (CFS)	POST-DEV. RUNOFF (CFS)	CHANGE (CFS)
10-YEAR	45.67/8.933	44.70/8.788	-0.97/-0.145
25-YEAR	66.63/13.142	65.07/12.977	-1.56/-0.165
100-YEAR	115.58/22.401	112.84/22.198	-2.74/-0.203



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USGS LOCUS MAP

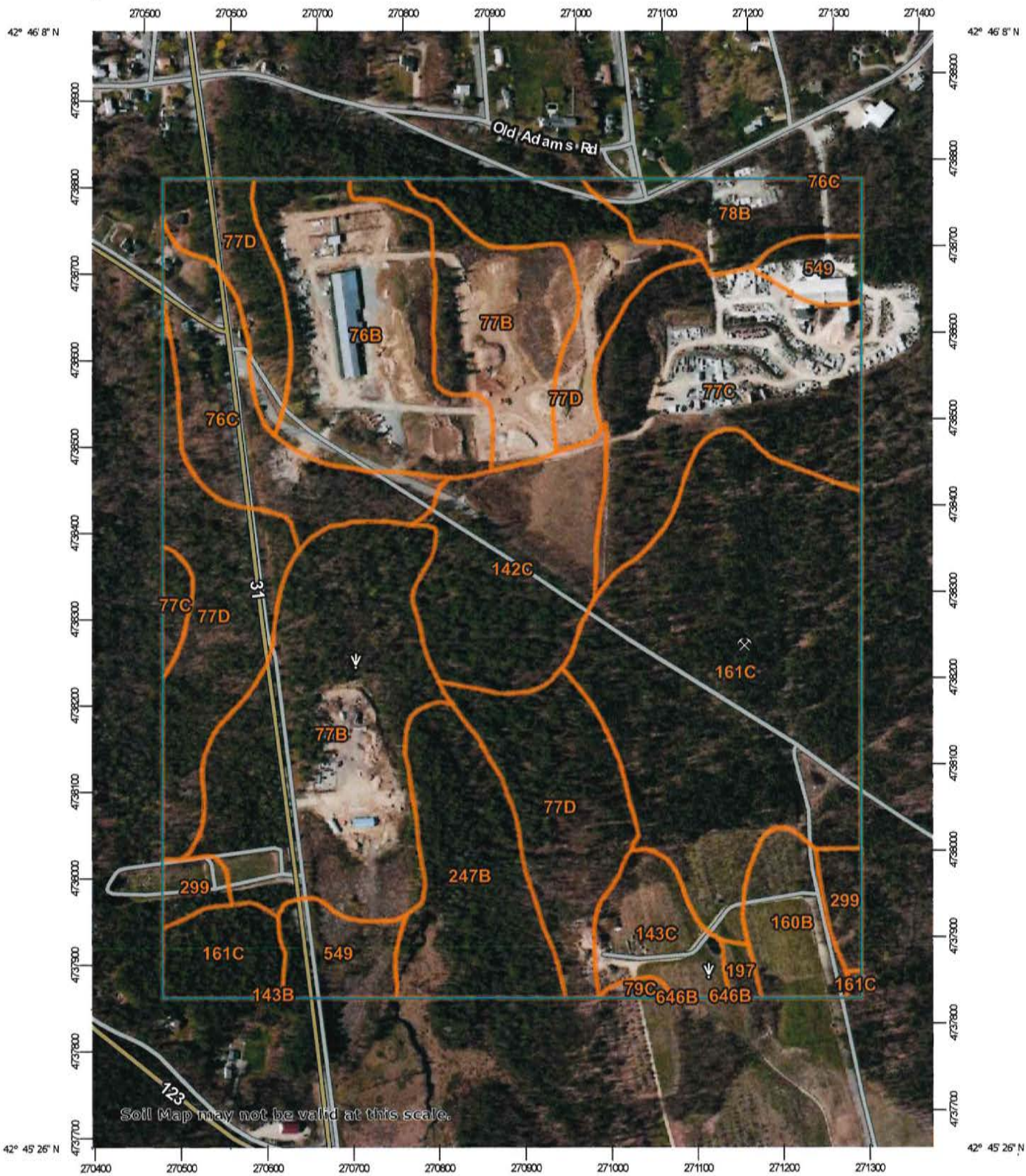
MICHAEL D. LAMARRE

TAX MAP PARCELS 2-37-B & 2-37-C

GREENVILLE, NEW HAMPSHIRE

SCALE: 1" = 500' JUNE 16, 2022

FILE: 1755DP02.dwg	PROJ. NO. 1755.02	SHEET NO. 1 OF 1



Map Scale: 1:6,290 if printed on A portrait (8.5" x 11") sheet.

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

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 1:20,000.

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: Hillsborough County, New Hampshire, Western Part
Survey Area Data: Version 18, Sep 11, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 30, 2011—May 1, 2011

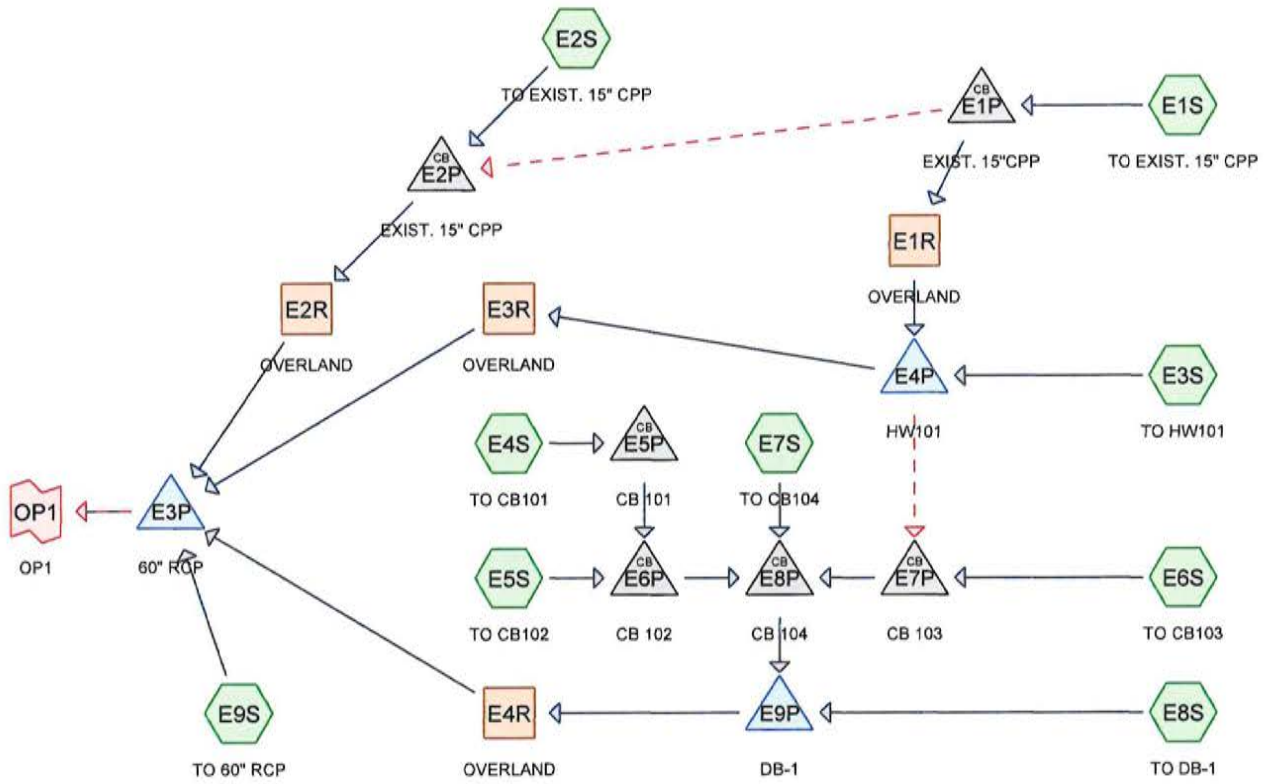
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
76B	Marlow fine sandy loam, 3 to 8 percent slopes	15.8	8.3%
76C	Marlow fine sandy loam, 8 to 15 percent slopes	9.7	5.1%
77B	Marlow fine sandy loam, 0 to 8 percent slopes, very stony	32.0	16.8%
77C	Marlow fine sandy loam, 8 to 15 percent slopes, very stony	18.4	9.6%
77D	Marlow fine sandy loam, 15 to 35 percent slopes, very stony	32.1	16.8%
78B	Peru fine sandy loam, 3 to 8 percent slopes	5.8	3.0%
79C	Peru fine sandy loam, 8 to 15 percent slopes, very stony	0.4	0.2%
142C	Monadnock fine sandy loam, 8 to 15 percent slopes	12.2	6.4%
143B	Monadnock fine sandy loam, 0 to 8 percent slopes, very stony	0.1	0.0%
143C	Monadnock fine sandy loam, 8 to 15 percent slopes, very stony	4.5	2.3%
160B	Tunbridge-Lyman-Monadnock complex, stony, 3 to 8 percen t slopes	4.3	2.3%
161C	Lyman-Tunbridge-Rock outcrop complex, 3 to 15 percent slopes	36.6	19.1%
197	Borohemists, ponded	0.6	0.3%
247B	Lyme fine sandy loam, 0 to 8 percent slopes, very stony	10.7	5.6%
299	Udorthents, smoothed	2.6	1.4%
549	Peacham mucky peat, 0 to 8 percent slopes, very stony	5.3	2.8%
646B	Pillsbury fine sandy loam, 0 to 8 percent slopes	0.0	0.0%
Totals for Area of Interest		**191.0**	**100.0%**

Section 1.1

Existing Conditions
10 & 100 Year Storm Node List



Subcat Reach Pond Link

Routing Diagram for 1755.02 LAMARRE PRE-DEV
Prepared by {enter your company name here}, Printed 6/6/2022
HydroCAD® 10.10-7b s/n 06037 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.224	61	>75% Grass cover, Good, HSG B (E1S, E2S, E3S, E6S, E8S, E9S)
1.979	74	>75% Grass cover, Good, HSG C (E2S, E3S, E4S, E5S, E6S, E8S, E9S)
0.600	80	>75% Grass cover, Good, HSG D (E3S, E6S, E9S)
0.166	48	Brush, Good, HSG B (E3S, E6S)
0.350	96	Gravel surface, HSG B (E1S, E3S, E9S)
4.150	96	Gravel surface, HSG C (E9S)
0.167	96	Gravel surface, HSG D (E3S, E6S, E9S)
1.730	91	Newly graded area, HSG C (E1S, E2S)
0.026	98	Paved parking, HSG B (E6S, E8S)
1.244	98	Paved parking, HSG C (E3S, E4S, E5S, E6S, E7S, E8S)
0.224	98	Paved roads w/curbs & sewers, HSG B (E1S, E2S, E3S, E9S)
0.806	98	Paved roads w/curbs & sewers, HSG C (E2S, E9S)
0.070	98	Paved roads w/curbs & sewers, HSG D (E9S)
0.220	98	Roofs, HSG C (E9S)
3.930	79	Woods, Fair, HSG D (E1S)
8.060	55	Woods, Good, HSG B (E1S, E2S, E3S, E6S, E8S, E9S)
26.091	70	Woods, Good, HSG C (E1S, E2S, E3S, E8S, E9S)
9.933	77	Woods, Good, HSG D (E3S, E6S, E8S, E9S)
62.970	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
12.050	HSG B	E1S, E2S, E3S, E6S, E8S, E9S
36.220	HSG C	E1S, E2S, E3S, E4S, E5S, E6S, E7S, E8S, E9S
14.700	HSG D	E1S, E3S, E6S, E8S, E9S
0.000	Other	
62.970		**TOTAL AREA**

Time span=5.00-20.00 hrs, dt=0.02 hrs, 751 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1S: TO EXIST. 15" CPP Runoff Area=9.380 ac 0.21% Impervious Runoff Depth>1.59"
Flow Length=1,467' Tc=67.5 min CN=72 Runoff=6.95 cfs 1.244 af

Subcatchment E2S: TO EXIST. 15" CPP Runoff Area=2.480 ac 3.63% Impervious Runoff Depth>2.16"
Flow Length=715' Tc=12.6 min CN=79 Runoff=5.45 cfs 0.446 af

Subcatchment E3S: TO HW101 Runoff Area=1.634 ac 19.22% Impervious Runoff Depth>1.63"
Tc=10.0 min CN=72 Runoff=2.90 cfs 0.222 af

Subcatchment E4S: TO CB101 Runoff Area=0.283 ac 60.07% Impervious Runoff Depth>2.96"
Tc=6.0 min CN=88 Runoff=1.02 cfs 0.070 af

Subcatchment E5S: TO CB102 Runoff Area=0.217 ac 76.96% Impervious Runoff Depth>3.35"
Tc=6.0 min CN=92 Runoff=0.86 cfs 0.061 af

Subcatchment E6S: TO CB103 Runoff Area=4.233 ac 3.92% Impervious Runoff Depth>1.02"
Flow Length=1,200' Tc=60.0 min CN=63 Runoff=2.03 cfs 0.361 af

Subcatchment E7S: TO CB104 Runoff Area=0.239 ac 100.00% Impervious Runoff Depth>3.91"
Tc=6.0 min CN=98 Runoff=1.04 cfs 0.078 af

Subcatchment E8S: TO DB-1 Runoff Area=3.271 ac 9.60% Impervious Runoff Depth>0.98"
Flow Length=870' Tc=35.3 min CN=62 Runoff=1.97 cfs 0.267 af

Subcatchment E9S: TO 60" RCP Runoff Area=41.233 ac 2.69% Impervious Runoff Depth>1.81"
Flow Length=2,860' Tc=68.3 min CN=75 Runoff=34.72 cfs 6.206 af

Reach E1R: OVERLAND Avg. Flow Depth=0.63' Max Vel=3.48 fps Inflow=6.95 cfs 1.244 af
n=0.070 L=184.0' S=0.0904 '/' Capacity=18.62 cfs Outflow=6.95 cfs 1.243 af

Reach E2R: OVERLAND Avg. Flow Depth=0.68' Max Vel=3.51 fps Inflow=5.45 cfs 0.446 af
n=0.070 L=510.0' S=0.0891 '/' Capacity=11.77 cfs Outflow=5.31 cfs 0.445 af

Reach E3R: OVERLAND Avg. Flow Depth=0.78' Max Vel=3.95 fps Inflow=7.30 cfs 1.464 af
n=0.070 L=473.0' S=0.0961 '/' Capacity=12.21 cfs Outflow=7.29 cfs 1.461 af

Reach E4R: OVERLAND Avg. Flow Depth=0.57' Max Vel=2.56 fps Inflow=2.98 cfs 0.826 af
n=0.070 L=683.0' S=0.0583 '/' Capacity=9.52 cfs Outflow=2.97 cfs 0.822 af

Pond E1P: EXIST. 15"CPP Peak Elev=878.76' Inflow=6.95 cfs 1.244 af
Primary=6.95 cfs 1.244 af Secondary=0.00 cfs 0.000 af Outflow=6.95 cfs 1.244 af

Pond E2P: EXIST. 15" CPP Peak Elev=861.58' Inflow=5.45 cfs 0.446 af
15.0" Round Culvert n=0.013 L=45.0' S=0.0242 '/' Outflow=5.45 cfs 0.446 af

Pond E3P: 60" RCP Peak Elev=815.85' Storage=1,437 cf Inflow=45.71 cfs 8.934 af
Primary=45.67 cfs 8.933 af Secondary=0.00 cfs 0.000 af Outflow=45.67 cfs 8.933 af

Pond E4P: HW101 Peak Elev=860.83' Storage=510 cf Inflow=7.36 cfs 1.465 af
Primary=7.30 cfs 1.464 af Secondary=0.00 cfs 0.000 af Outflow=7.30 cfs 1.464 af

Pond E5P: CB 101 Peak Elev=858.59' Inflow=1.02 cfs 0.070 af
15.0" Round Culvert n=0.013 L=194.0' S=0.0050 '/' Outflow=1.02 cfs 0.070 af

Pond E6P: CB 102 Peak Elev=858.59' Inflow=1.88 cfs 0.130 af
15.0" Round Culvert n=0.013 L=69.0' S=0.0055 '/' Outflow=1.88 cfs 0.130 af

Pond E7P: CB 103 Peak Elev=858.75' Inflow=2.03 cfs 0.361 af
15.0" Round Culvert n=0.013 L=73.0' S=0.0144 '/' Outflow=2.03 cfs 0.361 af

Pond E8P: CB 104 Peak Elev=858.59' Inflow=3.05 cfs 0.569 af
18.0" Round Culvert n=0.013 L=220.0' S=0.0050 '/' Outflow=3.05 cfs 0.569 af

Pond E9P: DB-1 Peak Elev=858.47' Storage=6,755 cf Inflow=3.95 cfs 0.837 af
Outflow=2.98 cfs 0.826 af

Link OP1: OP1 Inflow=45.67 cfs 8.933 af
Primary=45.67 cfs 8.933 af

Total Runoff Area = 62.970 ac Runoff Volume = 8.954 af Average Runoff Depth = 1.71"
95.89% Pervious = 60.380 ac 4.11% Impervious = 2.590 ac

Time span=5.00-20.00 hrs, dt=0.02 hrs, 751 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1S: TO EXIST. 15" CPP Runoff Area=9.380 ac 0.21% Impervious Runoff Depth>4.12"
Flow Length=1,467' Tc=67.5 min CN=72 Runoff=18.14 cfs 3.222 af

Subcatchment E2S: TO EXIST. 15" CPP Runoff Area=2.480 ac 3.63% Impervious Runoff Depth>4.99"
Flow Length=715' Tc=12.6 min CN=79 Runoff=12.35 cfs 1.030 af

Subcatchment E3S: TO HW101 Runoff Area=1.634 ac 19.22% Impervious Runoff Depth>4.21"
Tc=10.0 min CN=72 Runoff=7.54 cfs 0.573 af

Subcatchment E4S: TO CB101 Runoff Area=0.283 ac 60.07% Impervious Runoff Depth>6.01"
Tc=6.0 min CN=88 Runoff=2.00 cfs 0.142 af

Subcatchment E5S: TO CB102 Runoff Area=0.217 ac 76.96% Impervious Runoff Depth>6.44"
Tc=6.0 min CN=92 Runoff=1.60 cfs 0.116 af

Subcatchment E6S: TO CB103 Runoff Area=4.233 ac 3.92% Impervious Runoff Depth>3.17"
Flow Length=1,200' Tc=60.0 min CN=63 Runoff=6.75 cfs 1.118 af

Subcatchment E7S: TO CB104 Runoff Area=0.239 ac 100.00% Impervious Runoff Depth>6.95"
Tc=6.0 min CN=98 Runoff=1.83 cfs 0.138 af

Subcatchment E8S: TO DB-1 Runoff Area=3.271 ac 9.60% Impervious Runoff Depth>3.10"
Flow Length=870' Tc=35.3 min CN=62 Runoff=6.73 cfs 0.844 af

Subcatchment E9S: TO 60" RCP Runoff Area=41.233 ac 2.69% Impervious Runoff Depth>4.45"
Flow Length=2,860' Tc=68.3 min CN=75 Runoff=85.17 cfs 15.295 af

Reach E1R: OVERLAND Avg. Flow Depth=0.76' Max Vel=3.91 fps Inflow=10.36 cfs 2.767 af
n=0.070 L=184.0' S=0.0904 '/' Capacity=18.62 cfs Outflow=10.36 cfs 2.765 af

Reach E2R: OVERLAND Avg. Flow Depth=1.02' Max Vel=4.45 fps Inflow=12.35 cfs 1.486 af
n=0.070 L=510.0' S=0.0891 '/' Capacity=11.77 cfs Outflow=12.13 cfs 1.484 af

Reach E3R: OVERLAND Avg. Flow Depth=0.97' Max Vel=4.50 fps Inflow=11.58 cfs 3.319 af
n=0.070 L=473.0' S=0.0961 '/' Capacity=12.21 cfs Outflow=11.51 cfs 3.314 af

Reach E4R: OVERLAND Avg. Flow Depth=1.03' Max Vel=3.64 fps Inflow=10.27 cfs 2.318 af
n=0.070 L=683.0' S=0.0583 '/' Capacity=9.52 cfs Outflow=10.19 cfs 2.310 af

Pond E1P: EXIST. 15"CPP Peak Elev=880.45' Inflow=18.14 cfs 3.222 af
Primary=10.36 cfs 2.767 af Secondary=7.78 cfs 0.456 af Outflow=18.14 cfs 3.222 af

Pond E2P: EXIST. 15" CPP Peak Elev=865.11' Inflow=12.35 cfs 1.486 af
15.0" Round Culvert n=0.013 L=45.0' S=0.0242 '/' Outflow=12.35 cfs 1.486 af

Pond E3P: 60" RCP Peak Elev=817.63' Storage=5,694 cf Inflow=115.67 cfs 22.403 af
Primary=115.58 cfs 22.401 af Secondary=0.00 cfs 0.000 af Outflow=115.58 cfs 22.401 af

Pond E4P: HW101 Peak Elev=862.60' Storage=2,705 cf Inflow=12.79 cfs 3.337 af
Primary=11.58 cfs 3.319 af Secondary=1.81 cfs 0.018 af Outflow=12.95 cfs 3.337 af

Pond E5P: CB 101 Peak Elev=863.23' Inflow=2.00 cfs 0.142 af
15.0" Round Culvert n=0.013 L=194.0' S=0.0050 '/' Outflow=2.00 cfs 0.142 af

Pond E6P: CB 102 Peak Elev=863.23' Inflow=3.60 cfs 0.258 af
15.0" Round Culvert n=0.013 L=69.0' S=0.0055 '/' Outflow=3.60 cfs 0.258 af

Pond E7P: CB 103 Peak Elev=864.71' Inflow=7.00 cfs 1.136 af
15.0" Round Culvert n=0.013 L=73.0' S=0.0144 '/' Outflow=7.00 cfs 1.136 af

Pond E8P: CB 104 Peak Elev=863.22' Inflow=7.94 cfs 1.533 af
18.0" Round Culvert n=0.013 L=220.0' S=0.0050 '/' Outflow=7.94 cfs 1.533 af

Pond E9P: DB-1 Peak Elev=861.83' Storage=25,496 cf Inflow=14.63 cfs 2.377 af
Outflow=10.27 cfs 2.318 af

Link OP1: OP1 Inflow=115.58 cfs 22.401 af
Primary=115.58 cfs 22.401 af

Total Runoff Area = 62.970 ac Runoff Volume = 22.480 af Average Runoff Depth = 4.28"
95.89% Pervious = 60.380 ac 4.11% Impervious = 2.590 ac

Section 1.2

Existing Conditions

25 Year Storm Full Summary

Summary for Subcatchment E1S: TO EXIST. 15" CPP

Runoff = 10.47 cfs @ 12.95 hrs, Volume= 1.858 af, Depth> 2.38"
Routed to Pond E1P : EXIST. 15"CPP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.020	98	Paved roads w/curbs & sewers, HSG B
0.230	96	Gravel surface, HSG B
2.000	61	>75% Grass cover, Good, HSG B
1.660	55	Woods, Good, HSG B
0.730	91	Newly graded area, HSG C
3.930	79	Woods, Fair, HSG D
0.810	70	Woods, Good, HSG C
9.380	72	Weighted Average
9.360		99.79% Pervious Area
0.020		0.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.3	100	0.0250	0.05		**Sheet Flow, A=>B** Woods: Dense underbrush n= 0.800 P2= 3.00"
31.9	1,267	0.0700	0.66		**Shallow Concentrated Flow, B=>C** Forest w/Heavy Litter Kv= 2.5 fps
0.3	100	0.0200	6.28	50.27	**Parabolic Channel, C=>D** W=6.00' D=2.00' Area=8.0 sf Perim=7.5' n= 0.035 Earth, dense weeds
67.5	1,467	Total			

Summary for Subcatchment E2S: TO EXIST. 15" CPP

Runoff = 7.69 cfs @ 12.17 hrs, Volume= 0.632 af, Depth> 3.06"
Routed to Pond E2P : EXIST. 15" CPP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.034	98	Paved roads w/curbs & sewers, HSG B
0.056	98	Paved roads w/curbs & sewers, HSG C
0.200	55	Woods, Good, HSG B
0.056	61	>75% Grass cover, Good, HSG B
1.000	91	Newly graded area, HSG C
0.670	70	Woods, Good, HSG C
0.464	74	>75% Grass cover, Good, HSG C
2.480	79	Weighted Average
2.390		96.37% Pervious Area
0.090		3.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0260	0.21		**Sheet Flow, A=>B** Range n= 0.130 P2= 3.00"
4.2	395	0.0500	1.57		**Shallow Concentrated Flow, B=>C** Short Grass Pasture Kv= 7.0 fps
0.3	220	0.0770	10.99	58.64	**Parabolic Channel,** W=4.00' D=2.00' Area=5.3 sf Perim=5.9' n= 0.035 Earth, dense weeds
12.6	715	Total			

Summary for Subcatchment E3S: TO HW101

Runoff = 4.37 cfs @ 12.14 hrs, Volume= 0.331 af, Depth> 2.43"
Routed to Pond E4P : HW101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.100	98	Paved roads w/curbs & sewers, HSG B
0.214	98	Paved parking, HSG C
0.100	96	Gravel surface, HSG B
0.045	96	Gravel surface, HSG D
0.050	80	>75% Grass cover, Good, HSG D
0.150	77	Woods, Good, HSG D
0.088	48	Brush, Good, HSG B
0.200	61	>75% Grass cover, Good, HSG B
0.500	55	Woods, Good, HSG B
0.150	74	>75% Grass cover, Good, HSG C
0.037	70	Woods, Good, HSG C
1.634	72	Weighted Average
1.320		80.78% Pervious Area
0.314		19.22% Impervious Area

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

Summary for Subcatchment E4S: TO CB101

Runoff = 1.35 cfs @ 12.09 hrs, Volume= 0.093 af, Depth> 3.96"
Routed to Pond E5P : CB 101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.170	98	Paved parking, HSG C
0.113	74	>75% Grass cover, Good, HSG C
0.283	88	Weighted Average
0.113		39.93% Pervious Area
0.170		60.07% Impervious Area

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

Summary for Subcatchment E5S: TO CB102

Runoff = 1.11 cfs @ 12.08 hrs, Volume= 0.079 af, Depth> 4.37"
Routed to Pond E6P : CB 102

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.167	98	Paved parking, HSG C
0.050	74	>75% Grass cover, Good, HSG C
0.217	92	Weighted Average
0.050		23.04% Pervious Area
0.167		76.96% Impervious Area

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

Summary for Subcatchment E6S: TO CB103

Runoff = 3.45 cfs @ 12.87 hrs, Volume= 0.587 af, Depth> 1.66"
Routed to Pond E7P : CB 103

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.014	98	Paved parking, HSG B
0.152	98	Paved parking, HSG C
0.076	96	Gravel surface, HSG D
0.500	61	>75% Grass cover, Good, HSG B
0.078	48	Brush, Good, HSG B
0.063	74	>75% Grass cover, Good, HSG C
0.250	80	>75% Grass cover, Good, HSG D
2.500	55	Woods, Good, HSG B
0.600	77	Woods, Good, HSG D
4.233	63	Weighted Average
4.067		96.08% Pervious Area
0.166		3.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.3	100	0.0250	0.05		**Sheet Flow, A=>B** Woods: Dense underbrush n= 0.800 P2= 3.00"
24.5	1,040	0.0800	0.71		**Shallow Concentrated Flow, B=>C** Forest w/Heavy Litter Kv= 2.5 fps
0.2	60	0.0120	4.94	69.13	**Trap/Vee/Rect Channel Flow, C=>D** Bot.W=2.00' D=2.00' Z= 2.0 & 3.0 '/' Top.W=12.00' n= 0.035 High grass
60.0	1,200	Total			

Summary for Subcatchment E7S: TO CB104

Runoff = 1.30 cfs @ 12.08 hrs, Volume= 0.098 af, Depth> 4.92"
Routed to Pond E8P : CB 104

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.239	98	Paved parking, HSG C
0.239		100.00% Impervious Area

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

Summary for Subcatchment E8S: TO DB-1

Runoff = 3.39 cfs @ 12.53 hrs, Volume= 0.438 af, Depth> 1.61"
Routed to Pond E9P : DB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.012	98	Paved parking, HSG B
0.302	98	Paved parking, HSG C
0.390	61	>75% Grass cover, Good, HSG B
0.199	74	>75% Grass cover, Good, HSG C
2.135	55	Woods, Good, HSG B
0.183	77	Woods, Good, HSG D
0.050	70	Woods, Good, HSG C
3.271	62	Weighted Average
2.957		90.40% Pervious Area
0.314		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.1000	0.08		**Sheet Flow, A=>B** Woods: Dense underbrush n= 0.800 P2= 3.00"
14.9	670	0.0900	0.75		**Shallow Concentrated Flow, B=>C** Forest w/Heavy Litter Kv= 2.5 fps
0.1	100	0.1200	13.66	191.29	**Trap/Vee/Rect Channel Flow, C=>D** Bot.W=2.00' D=2.00' Z= 2.0 & 3.0 '/' Top.W=12.00' n= 0.040 Earth, cobble bottom, clean sides
35.3	870	Total			

Summary for Subcatchment E9S: TO 60" RCP

Runoff = 50.79 cfs @ 12.95 hrs, Volume= 9.062 af, Depth> 2.64"
Routed to Pond E3P : 60" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.220	98	Roofs, HSG C
0.750	98	Paved roads w/curbs & sewers, HSG C
0.070	98	Paved roads w/curbs & sewers, HSG B
4.150	96	Gravel surface, HSG C
0.020	96	Gravel surface, HSG B
0.046	96	Gravel surface, HSG D
0.070	98	Paved roads w/curbs & sewers, HSG D
0.078	61	>75% Grass cover, Good, HSG B
0.940	74	>75% Grass cover, Good, HSG C
0.300	80	>75% Grass cover, Good, HSG D
1.065	55	Woods, Good, HSG B
24.524	70	Woods, Good, HSG C
9.000	77	Woods, Good, HSG D
41.233	75	Weighted Average
40.123		97.31% Pervious Area
1.110		2.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.3	100	0.0400	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
34.3	1,260	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.7	1,500	0.0467	5.31	85.01	**Parabolic Channel,** W=12.00' D=2.00' Area=16.0 sf Perim=12.8' n= 0.070 Sluggish weedy reaches w/pools
68.3	2,860	Total			

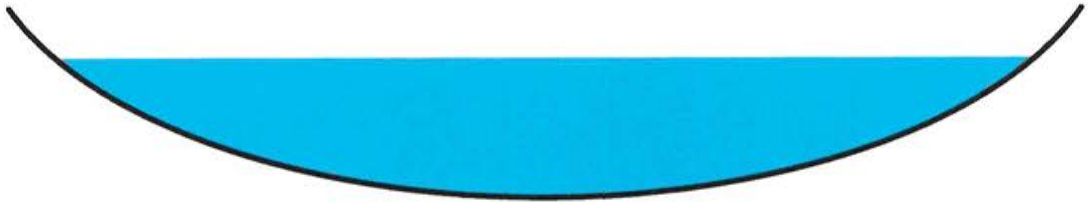
Summary for Reach E1R: OVERLAND

Inflow Area = 9.380 ac, 0.21% Impervious, Inflow Depth > 2.36" for 25 Year Storm event
Inflow = 9.74 cfs @ 12.95 hrs, Volume= 1.842 af
Outflow = 9.74 cfs @ 12.96 hrs, Volume= 1.840 af, Atten= 0%, Lag= 0.2 min
Routed to Pond E4P : HW101

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.84 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.05 fps, Avg. Travel Time= 1.5 min

Peak Storage= 466 cf @ 12.96 hrs
Average Depth at Peak Storage= 0.74' , Surface Width= 5.15'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 18.62 cfs

6.00' x 1.00' deep Parabolic Channel, n= 0.070 Sluggish weedy reaches w/pools
Length= 184.0' Slope= 0.0904 '/'
Inlet Invert= 875.63', Outlet Invert= 859.00'



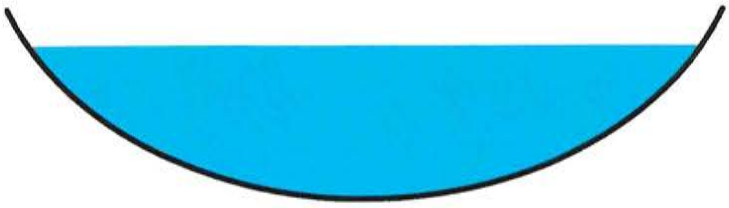
Summary for Reach E2R: OVERLAND

Inflow Area = 2.480 ac, 3.63% Impervious, Inflow Depth > 3.14" for 25 Year Storm event
Inflow = 7.69 cfs @ 12.17 hrs, Volume= 0.649 af
Outflow = 7.52 cfs @ 12.20 hrs, Volume= 0.647 af, Atten= 2%, Lag= 1.7 min
Routed to Pond E3P : 60" RCP

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.89 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 1.55 fps, Avg. Travel Time= 5.5 min

Peak Storage= 987 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.81' , Surface Width= 3.60'
Bank-Full Depth= 1.00' Flow Area= 2.7 sf, Capacity= 11.77 cfs

4.00' x 1.00' deep Parabolic Channel, n= 0.070 Sluggish weedy reaches w/pools
Length= 510.0' Slope= 0.0891 '/'
Inlet Invert= 859.02', Outlet Invert= 813.56'



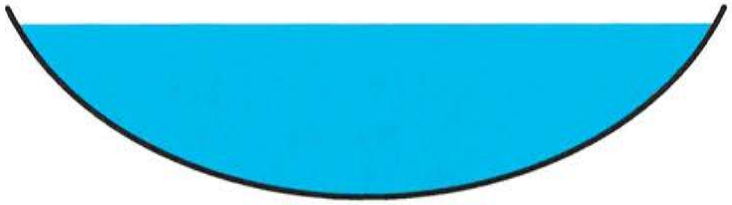
Summary for Reach E3R: OVERLAND

Inflow Area = 11.014 ac, 3.03% Impervious, Inflow Depth > 2.37" for 25 Year Storm event
Inflow = 10.15 cfs @ 13.09 hrs, Volume= 2.171 af
Outflow = 10.15 cfs @ 13.11 hrs, Volume= 2.167 af, Atten= 0%, Lag= 1.4 min
Routed to Pond E3P : 60" RCP

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Max. Velocity= 4.35 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 2.45 fps, Avg. Travel Time= 3.2 min

Peak Storage= 1,104 cf @ 13.11 hrs
Average Depth at Peak Storage= 0.92' , Surface Width= 3.83'
Bank-Full Depth= 1.00' Flow Area= 2.7 sf, Capacity= 12.21 cfs

4.00' x 1.00' deep Parabolic Channel, n= 0.070 Sluggish weedy reaches w/pools
Length= 473.0' Slope= 0.0961 '/'
Inlet Invert= 859.00', Outlet Invert= 813.56'



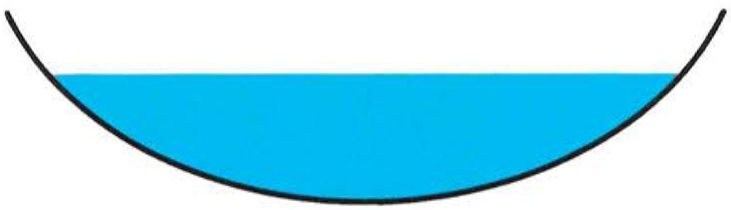
Summary for Reach E4R: OVERLAND

Inflow Area = 8.243 ac, 12.81% Impervious, Inflow Depth > 1.85" for 25 Year Storm event
Inflow = 4.17 cfs @ 13.23 hrs, Volume= 1.273 af
Outflow = 4.17 cfs @ 13.28 hrs, Volume= 1.267 af, Atten= 0%, Lag= 3.1 min
Routed to Pond E3P : 60" RCP

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.82 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 1.52 fps, Avg. Travel Time= 7.5 min

Peak Storage= 1,009 cf @ 13.28 hrs
Average Depth at Peak Storage= 0.67' , Surface Width= 3.29'
Bank-Full Depth= 1.00' Flow Area= 2.7 sf, Capacity= 9.52 cfs

4.00' x 1.00' deep Parabolic Channel, n= 0.070 Sluggish weedy reaches w/pools
Length= 683.0' Slope= 0.0583 '/'
Inlet Invert= 853.40', Outlet Invert= 813.56'



Summary for Pond E1P: EXIST. 15"CPP

Inflow Area = 9.380 ac, 0.21% Impervious, Inflow Depth > 2.38" for 25 Year Storm event
Inflow = 10.47 cfs @ 12.95 hrs, Volume= 1.858 af
Outflow = 10.47 cfs @ 12.95 hrs, Volume= 1.858 af, Atten= 0%, Lag= 0.0 min
Primary = 9.74 cfs @ 12.95 hrs, Volume= 1.842 af
Routed to Reach E1R : OVERLAND
Secondary = 0.72 cfs @ 12.95 hrs, Volume= 0.016 af
Routed to Pond E2P : EXIST. 15" CPP

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 880.09' @ 12.95 hrs
Flood Elev= 881.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	876.75'	**15.0" Round Culvert** L= 48.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 876.75' / 875.63' S= 0.0230 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	880.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=9.74 cfs @ 12.95 hrs HW=880.09' TW=876.37' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 9.74 cfs @ 7.94 fps)

Secondary OutFlow Max=0.72 cfs @ 12.95 hrs HW=880.09' TW=860.77' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.72 cfs @ 0.77 fps)

Summary for Pond E2P: EXIST. 15" CPP

Inflow Area = 2.480 ac, 3.63% Impervious, Inflow Depth > 3.14" for 25 Year Storm event
Inflow = 7.69 cfs @ 12.17 hrs, Volume= 0.649 af
Outflow = 7.69 cfs @ 12.17 hrs, Volume= 0.649 af, Atten= 0%, Lag= 0.0 min
Primary = 7.69 cfs @ 12.17 hrs, Volume= 0.649 af
Routed to Reach E2R : OVERLAND

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 862.43' @ 12.17 hrs
Flood Elev= 863.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	860.11'	**15.0" Round Culvert** L= 45.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 860.11' / 859.02' S= 0.0242 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.67 cfs @ 12.17 hrs HW=862.42' TW=859.82' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 7.67 cfs @ 6.25 fps)

Summary for Pond E3P: 60" RCP

Inflow Area = 62.970 ac, 4.11% Impervious, Inflow Depth > 2.50" for 25 Year Storm event
Inflow = 66.65 cfs @ 12.96 hrs, Volume= 13.143 af
Outflow = 66.63 cfs @ 12.97 hrs, Volume= 13.142 af, Atten= 0%, Lag= 0.6 min
Primary = 66.63 cfs @ 12.97 hrs, Volume= 13.142 af
Routed to Link OP1 : OP1
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link OP1 : OP1

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 816.44' @ 12.97 hrs Surf.Area= 2,035 sf Storage= 2,431 cf

Plug-Flow detention time= 0.4 min calculated for 13.142 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (843.2 - 842.8)

Volume	Invert	Avail.Storage	Storage Description
#1	813.56'	61,962 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
813.56	0	0	0
814.00	100	22	22
816.00	1,530	1,630	1,652
818.00	3,840	5,370	7,022
820.00	6,940	10,780	17,802
822.00	10,750	17,690	35,492
824.00	15,720	26,470	61,962

Device	Routing	Invert	Outlet Devices
#1	Primary	813.56'	**60.0" Round Culvert** L= 86.0' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 813.56' / 812.70' S= 0.0100 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 19.63 sf
#2	Secondary	822.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=66.62 cfs @ 12.97 hrs HW=816.44' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 66.62 cfs @ 8.21 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=813.56' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond E4P: HW101

Inflow Area = 11.014 ac, 3.03% Impervious, Inflow Depth > 2.37" for 25 Year Storm event
Inflow = 10.38 cfs @ 12.84 hrs, Volume= 2.172 af
Outflow = 10.20 cfs @ 13.09 hrs, Volume= 2.171 af, Atten= 2%, Lag= 15.0 min
Primary = 10.15 cfs @ 13.09 hrs, Volume= 2.171 af
Routed to Reach E3R : OVERLAND
Secondary = 0.05 cfs @ 13.09 hrs, Volume= 0.001 af
Routed to Pond E7P : CB 103

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 861.94' @ 13.09 hrs Surf.Area= 1,460 sf Storage= 1,738 cf

Plug-Flow detention time= 1.2 min calculated for 2.168 af (100% of inflow)
Center-of-Mass det. time= 1.1 min (842.6 - 841.5)

Volume	Invert	Avail.Storage	Storage Description
#1	859.00'	2,705 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
859.00	0	0	0
860.00	220	110	110
862.00	1,500	1,720	1,830
862.50	2,000	875	2,705

Device	Routing	Invert	Outlet Devices
#1	Primary	858.40'	**18.0" Round Culvert** L= 134.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 858.40' / 849.00' S= 0.0701 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	861.90'	**126.0 deg x 2.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.48 (C= 3.10)

Primary OutFlow Max=10.15 cfs @ 13.09 hrs HW=861.94' TW=859.92' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 10.15 cfs @ 5.74 fps)

Secondary OutFlow Max=0.05 cfs @ 13.09 hrs HW=861.94' TW=860.57' (Dynamic Tailwater)
└**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.05 cfs @ 0.60 fps)

Summary for Pond E5P: CB 101

Inflow Area = 0.283 ac, 60.07% Impervious, Inflow Depth > 3.96" for 25 Year Storm event
Inflow = 1.35 cfs @ 12.09 hrs, Volume= 0.093 af
Outflow = 1.35 cfs @ 12.09 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min
Primary = 1.35 cfs @ 12.09 hrs, Volume= 0.093 af
Routed to Pond E6P : CB 102

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 860.25' @ 13.16 hrs
Flood Elev= 861.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	857.90'	**15.0" Round Culvert**

L= 194.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 857.90' / 856.93' S= 0.0050 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.29 cfs @ 12.09 hrs HW=858.61' TW=857.91' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.29 cfs @ 2.59 fps)

Summary for Pond E6P: CB 102

Inflow Area = 0.500 ac, 67.40% Impervious, Inflow Depth > 4.14" for 25 Year Storm event
Inflow = 2.46 cfs @ 12.08 hrs, Volume= 0.172 af
Outflow = 2.46 cfs @ 12.08 hrs, Volume= 0.172 af, Atten= 0%, Lag= 0.0 min
Primary = 2.46 cfs @ 12.08 hrs, Volume= 0.172 af
Routed to Pond E8P : CB 104

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 860.25' @ 13.14 hrs
Flood Elev= 861.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	856.83'	**15.0" Round Culvert** L= 69.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 856.83' / 856.45' S= 0.0055 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.17 cfs @ 12.08 hrs HW=857.91' TW=857.61' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 2.17 cfs @ 2.60 fps)

Summary for Pond E7P: CB 103

Inflow Area = 4.233 ac, 3.92% Impervious, Inflow Depth > 1.67" for 25 Year Storm event
Inflow = 3.45 cfs @ 12.87 hrs, Volume= 0.587 af
Outflow = 3.45 cfs @ 12.87 hrs, Volume= 0.587 af, Atten= 0%, Lag= 0.0 min
Primary = 3.45 cfs @ 12.87 hrs, Volume= 0.587 af
Routed to Pond E8P : CB 104

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 860.57' @ 13.06 hrs
Flood Elev= 860.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	857.50'	**15.0" Round Culvert** L= 73.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 857.50' / 856.45' S= 0.0144 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.27 cfs @ 12.87 hrs HW=860.39' TW=860.03' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.27 cfs @ 2.67 fps)

Summary for Pond E8P: CB 104

Inflow Area = 4.972 ac, 14.92% Impervious, Inflow Depth > 2.07" for 25 Year Storm event
Inflow = 4.17 cfs @ 12.09 hrs, Volume= 0.858 af
Outflow = 4.17 cfs @ 12.09 hrs, Volume= 0.858 af, Atten= 0%, Lag= 0.0 min
Primary = 4.17 cfs @ 12.09 hrs, Volume= 0.858 af
Routed to Pond E9P : DB-1

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 860.25' @ 13.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	856.20'	**18.0" Round Culvert** L= 220.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 856.20' / 855.10' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.72 cfs @ 12.09 hrs HW=857.62' TW=857.05' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.72 cfs @ 2.78 fps)

Summary for Pond E9P: DB-1

Inflow Area = 8.243 ac, 12.81% Impervious, Inflow Depth > 1.89" for 25 Year Storm event
Inflow = 6.64 cfs @ 12.65 hrs, Volume= 1.296 af
Outflow = 4.17 cfs @ 13.23 hrs, Volume= 1.273 af, Atten= 37%, Lag= 34.4 min
Primary = 4.17 cfs @ 13.23 hrs, Volume= 1.273 af
Routed to Reach E4R : OVERLAND

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 859.98' @ 13.23 hrs Surf.Area= 4,488 sf Storage= 12,552 cf

Plug-Flow detention time= 43.5 min calculated for 1.273 af (98% of inflow)
Center-of-Mass det. time= 37.0 min (866.1 - 829.2)

Volume	Invert	Avail.Storage	Storage Description
#1	855.00'	32,787 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
855.00	863	0	0
856.00	1,444	1,154	1,154
858.00	2,765	4,209	5,363
860.00	4,503	7,268	12,631
862.00	10,074	14,577	27,208
862.50	12,242	5,579	32,787

Device	Routing	Invert	Outlet Devices
#1	Primary	854.80'	**18.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 854.80' / 853.40' S= 0.0175 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

#2	Device 1	855.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	857.00'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	861.50'	**20.0" x 29.5" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.17 cfs @ 13.23 hrs HW=859.98' TW=854.07' (Dynamic Tailwater)
- **1=Culvert** (Passes 4.17 cfs of 17.91 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 1.43 cfs @ 10.52 fps)
  - **3=Orifice/Grate** (Orifice Controls 2.74 cfs @ 7.84 fps)
  - **4=Orifice/Grate** (Controls 0.00 cfs)

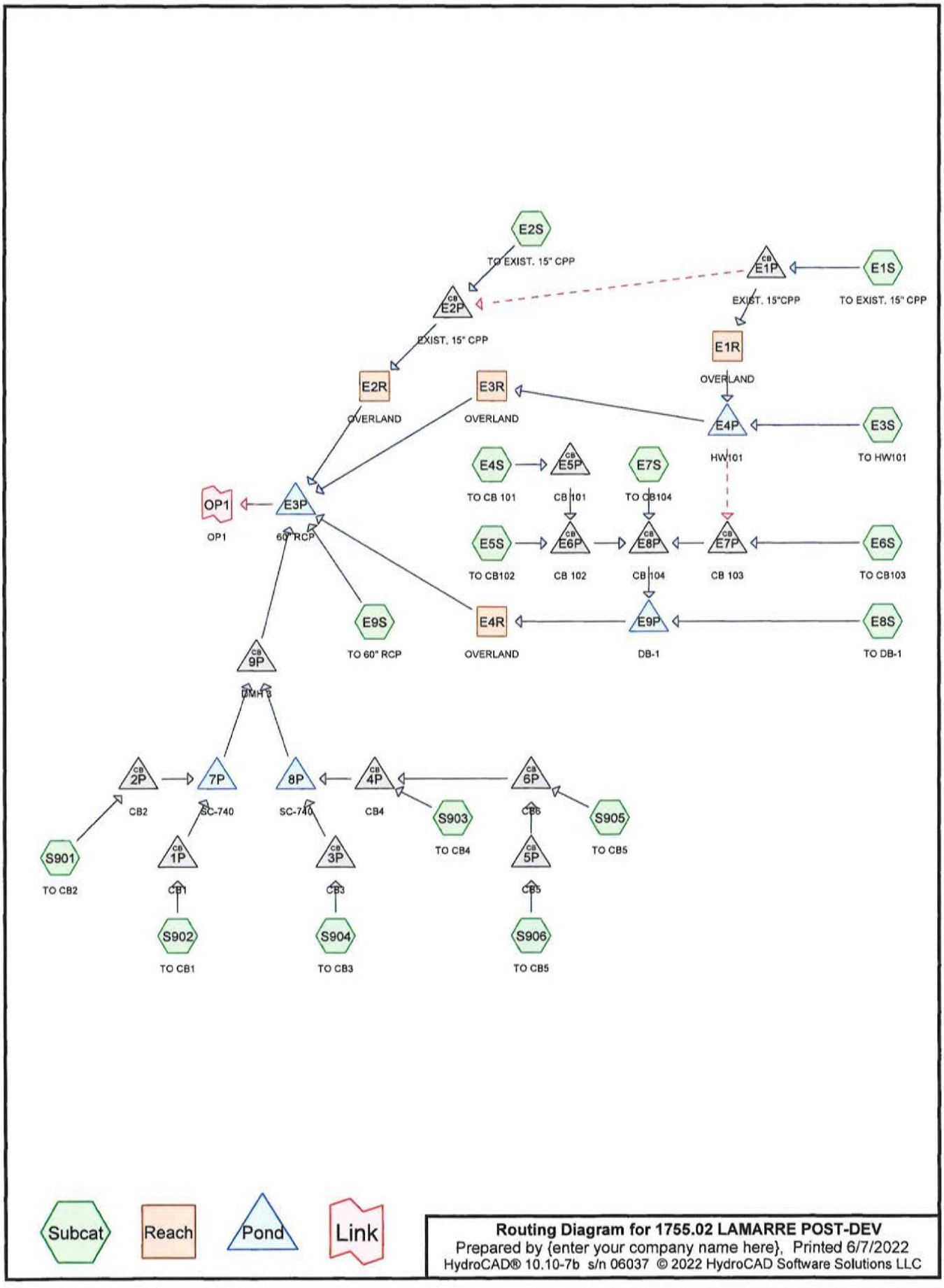
Summary for Link OP1: OP1

Inflow Area = 62.970 ac, 4.11% Impervious, Inflow Depth > 2.50" for 25 Year Storm event
Inflow = 66.63 cfs @ 12.97 hrs, Volume= 13.142 af
Primary = 66.63 cfs @ 12.97 hrs, Volume= 13.142 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs

Section 2.1

Proposed Conditions
10 & 100 Year Storm Node List


E2S
TO EXIST. 15" CPP
E1P
E1S
EXIST. 15"CPP
TO EXIST. 15" CPP
E2P
EXIST. 15" CPP
E1R
OVERLAND
E2R
OVERLAND
E3R
OVERLAND
E4P
HW101
E3S
TO HW101
E4S
TO CB 101
E5P
CB 101
E7S
TO CB104
OP1
OP1
E3P
60" RCP
E5S
TO CB102
E6P
CB 102
E8P
CB 104
E7P
CB 103
E6S
TO CB103
E9S
TO 60" RCP
E4R
OVERLAND
E9P
DB-1
E8S
TO DB-1
9P
DMH 9
2P
CB2
7P
SC-740
8P
SC-740
4P
CB4
6P
CB6
S901
TO CB2
1P
CB1
3P
CB3
S903
TO CB4
5P
CB5
S905
TO CB5
S902
TO CB1
S904
TO CB3
S906
TO CB5
Subcat
Reach
Pond
Link
Routing Diagram for 1755.02 LAMARRE POST-DEV
Prepared by {enter your company name here}, Printed 6/7/2022
HydroCAD® 10.10-7b s/n 06037 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.224	61	>75% Grass cover, Good, HSG B (E1S, E2S, E3S, E6S, E8S, E9S)
2.629	74	>75% Grass cover, Good, HSG C (E2S, E3S, E4S, E5S, E6S, E8S, E9S)
0.600	80	>75% Grass cover, Good, HSG D (E3S, E6S, E9S)
0.166	48	Brush, Good, HSG B (E3S, E6S)
0.350	96	Gravel surface, HSG B (E1S, E3S, E9S)
4.150	96	Gravel surface, HSG C (E9S)
0.167	96	Gravel surface, HSG D (E3S, E6S, E9S)
1.730	91	Newly graded area, HSG C (E1S, E2S)
0.026	98	Paved parking, HSG B (E6S, E8S)
2.281	98	Paved parking, HSG C (E3S, E4S, E5S, E6S, E7S, E8S, S901, S902, S903, S904, S905, S906)
0.224	98	Paved roads w/curbs & sewers, HSG B (E1S, E2S, E3S, E9S)
0.906	98	Paved roads w/curbs & sewers, HSG C (E2S, E9S)
0.070	98	Paved roads w/curbs & sewers, HSG D (E9S)
1.195	98	Roofs, HSG C (E9S, S901, S902, S903, S904, S905, S906)
3.930	79	Woods, Fair, HSG D (E1S)
8.060	55	Woods, Good, HSG B (E1S, E2S, E3S, E6S, E8S, E9S)
23.329	70	Woods, Good, HSG C (E1S, E2S, E3S, E8S, E9S)
9.933	77	Woods, Good, HSG D (E3S, E6S, E8S, E9S)
62.970	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
12.050	HSG B	E1S, E2S, E3S, E6S, E8S, E9S
36.220	HSG C	E1S, E2S, E3S, E4S, E5S, E6S, E7S, E8S, E9S, S901, S902, S903, S904, S905, S906
14.700	HSG D	E1S, E3S, E6S, E8S, E9S
0.000	Other	
62.970		**TOTAL AREA**

Time span=5.00-20.00 hrs, dt=0.02 hrs, 751 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1S: TO EXIST. 15" CPP Runoff Area=9.380 ac 0.21% Impervious Runoff Depth>1.59"
Flow Length=1,467' Tc=67.5 min CN=72 Runoff=6.95 cfs 1.244 af

Subcatchment E2S: TO EXIST. 15" CPP Runoff Area=2.480 ac 3.63% Impervious Runoff Depth>2.16"
Flow Length=715' Tc=12.6 min CN=79 Runoff=5.45 cfs 0.446 af

Subcatchment E3S: TO HW101 Runoff Area=1.634 ac 19.22% Impervious Runoff Depth>1.63"
Tc=10.0 min CN=72 Runoff=2.90 cfs 0.222 af

Subcatchment E4S: TO CB 101 Runoff Area=0.283 ac 60.07% Impervious Runoff Depth>2.96"
Tc=6.0 min CN=88 Runoff=1.02 cfs 0.070 af

Subcatchment E5S: TO CB102 Runoff Area=0.217 ac 76.96% Impervious Runoff Depth>3.35"
Tc=6.0 min CN=92 Runoff=0.86 cfs 0.061 af

Subcatchment E6S: TO CB103 Runoff Area=4.233 ac 3.92% Impervious Runoff Depth>1.02"
Flow Length=1,200' Tc=60.0 min CN=63 Runoff=2.03 cfs 0.361 af

Subcatchment E7S: TO CB104 Runoff Area=0.239 ac 100.00% Impervious Runoff Depth>3.91"
Tc=6.0 min CN=98 Runoff=1.04 cfs 0.078 af

Subcatchment E8S: TO DB-1 Runoff Area=3.271 ac 9.60% Impervious Runoff Depth>0.98"
Flow Length=870' Tc=35.3 min CN=62 Runoff=1.97 cfs 0.267 af

Subcatchment E9S: TO 60" RCP Runoff Area=39.556 ac 3.91% Impervious Runoff Depth>1.81"
Flow Length=2,860' Tc=68.3 min CN=75 Runoff=33.31 cfs 5.953 af

Subcatchment S901: TO CB2 Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>3.91"
Tc=6.0 min CN=98 Runoff=1.08 cfs 0.081 af

Subcatchment S902: TO CB1 Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>3.91"
Tc=6.0 min CN=98 Runoff=1.08 cfs 0.081 af

Subcatchment S903: TO CB4 Runoff Area=0.342 ac 100.00% Impervious Runoff Depth>3.91"
Tc=6.0 min CN=98 Runoff=1.48 cfs 0.111 af

Subcatchment S904: TO CB3 Runoff Area=0.335 ac 100.00% Impervious Runoff Depth>3.91"
Tc=6.0 min CN=98 Runoff=1.45 cfs 0.109 af

Subcatchment S905: TO CB5 Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>3.91"
Tc=6.0 min CN=98 Runoff=1.08 cfs 0.081 af

Subcatchment S906: TO CB5 Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>3.91"
Tc=6.0 min CN=98 Runoff=1.08 cfs 0.081 af

Reach E1R: OVERLAND Avg. Flow Depth=0.63' Max Vel=3.48 fps Inflow=6.95 cfs 1.244 af
n=0.070 L=184.0' S=0.0904 '/' Capacity=18.62 cfs Outflow=6.95 cfs 1.243 af

Reach E2R: OVERLAND Avg. Flow Depth=0.68' Max Vel=3.51 fps Inflow=5.45 cfs 0.446 af
n=0.070 L=510.0' S=0.0891 '/' Capacity=11.77 cfs Outflow=5.31 cfs 0.445 af

Reach E3R: OVERLAND Avg. Flow Depth=0.78' Max Vel=3.95 fps Inflow=7.30 cfs 1.464 af
n=0.070 L=473.0' S=0.0961 '/' Capacity=12.21 cfs Outflow=7.29 cfs 1.461 af

Reach E4R: OVERLAND Avg. Flow Depth=0.57' Max Vel=2.56 fps Inflow=2.98 cfs 0.826 af
n=0.070 L=683.0' S=0.0583 '/' Capacity=9.52 cfs Outflow=2.97 cfs 0.822 af

Pond 1P: CB1 Peak Elev=854.62' Inflow=1.08 cfs 0.081 af
12.0" Round Culvert n=0.013 L=90.0' S=0.0100 '/' Outflow=1.08 cfs 0.081 af

Pond 2P: CB2 Peak Elev=851.86' Inflow=1.08 cfs 0.081 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.08 cfs 0.081 af

Pond 3P: CB3 Peak Elev=855.59' Inflow=1.45 cfs 0.109 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.45 cfs 0.109 af

Pond 4P: CB4 Peak Elev=853.79' Inflow=3.65 cfs 0.274 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0100 '/' Outflow=3.65 cfs 0.274 af

Pond 5P: CB5 Peak Elev=855.72' Inflow=1.08 cfs 0.081 af
12.0" Round Culvert n=0.013 L=260.0' S=0.0100 '/' Outflow=1.08 cfs 0.081 af

Pond 6P: CB6 Peak Elev=854.29' Inflow=2.17 cfs 0.163 af
12.0" Round Culvert n=0.013 L=60.0' S=0.0100 '/' Outflow=2.17 cfs 0.163 af

Pond 7P: SC-740 Peak Elev=850.70' Storage=4,804 cf Inflow=2.17 cfs 0.163 af
Discarded=0.05 cfs 0.057 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.057 af

Pond 8P: SC-740 Peak Elev=852.21' Storage=8,809 cf Inflow=5.10 cfs 0.383 af
Discarded=0.09 cfs 0.090 af Primary=1.92 cfs 0.107 af Outflow=2.01 cfs 0.197 af

Pond 9P: DMH 3 Peak Elev=829.91' Inflow=1.92 cfs 0.107 af
12.0" Round Culvert n=0.013 L=40.0' S=0.1000 '/' Outflow=1.92 cfs 0.107 af

Pond E1P: EXIST. 15"CPP Peak Elev=878.76' Inflow=6.95 cfs 1.244 af
Primary=6.95 cfs 1.244 af Secondary=0.00 cfs 0.000 af Outflow=6.95 cfs 1.244 af

Pond E2P: EXIST. 15" CPP Peak Elev=861.58' Inflow=5.45 cfs 0.446 af
15.0" Round Culvert n=0.013 L=45.0' S=0.0242 '/' Outflow=5.45 cfs 0.446 af

Pond E3P: 60" RCP Peak Elev=815.83' Storage=1,396 cf Inflow=44.73 cfs 8.789 af
Primary=44.70 cfs 8.788 af Secondary=0.00 cfs 0.000 af Outflow=44.70 cfs 8.788 af

Pond E4P: HW101 Peak Elev=860.83' Storage=510 cf Inflow=7.36 cfs 1.465 af
Primary=7.30 cfs 1.464 af Secondary=0.00 cfs 0.000 af Outflow=7.30 cfs 1.464 af

Pond E5P: CB 101 Peak Elev=858.59' Inflow=1.02 cfs 0.070 af
15.0" Round Culvert n=0.013 L=194.0' S=0.0050 '/' Outflow=1.02 cfs 0.070 af

Pond E6P: CB 102 Peak Elev=858.59' Inflow=1.88 cfs 0.130 af
15.0" Round Culvert n=0.013 L=69.0' S=0.0055 '/' Outflow=1.88 cfs 0.130 af

Pond E7P: CB 103 Peak Elev=858.75' Inflow=2.03 cfs 0.361 af
15.0" Round Culvert n=0.013 L=73.0' S=0.0144 '/' Outflow=2.03 cfs 0.361 af

Pond E8P: CB 104 Peak Elev=858.59' Inflow=3.05 cfs 0.569 af
18.0" Round Culvert n=0.013 L=220.0' S=0.0050 '/' Outflow=3.05 cfs 0.569 af

Pond E9P: DB-1 Peak Elev=858.47' Storage=6,755 cf Inflow=3.95 cfs 0.837 af
Outflow=2.98 cfs 0.826 af

Link OP1: OP1 Inflow=44.70 cfs 8.788 af
Primary=44.70 cfs 8.788 af

Total Runoff Area = 62.970 ac Runoff Volume = 9.248 af Average Runoff Depth = 1.76"
92.53% Pervious = 58.268 ac 7.47% Impervious = 4.702 ac

Time span=5.00-20.00 hrs, dt=0.02 hrs, 751 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1S: TO EXIST. 15" CPP Runoff Area=9.380 ac 0.21% Impervious Runoff Depth>4.12"
Flow Length=1,467' Tc=67.5 min CN=72 Runoff=18.14 cfs 3.222 af

Subcatchment E2S: TO EXIST. 15" CPP Runoff Area=2.480 ac 3.63% Impervious Runoff Depth>4.99"
Flow Length=715' Tc=12.6 min CN=79 Runoff=12.35 cfs 1.030 af

Subcatchment E3S: TO HW101 Runoff Area=1.634 ac 19.22% Impervious Runoff Depth>4.21"
Tc=10.0 min CN=72 Runoff=7.54 cfs 0.573 af

Subcatchment E4S: TO CB 101 Runoff Area=0.283 ac 60.07% Impervious Runoff Depth>6.01"
Tc=6.0 min CN=88 Runoff=2.00 cfs 0.142 af

Subcatchment E5S: TO CB102 Runoff Area=0.217 ac 76.96% Impervious Runoff Depth>6.44"
Tc=6.0 min CN=92 Runoff=1.60 cfs 0.116 af

Subcatchment E6S: TO CB103 Runoff Area=4.233 ac 3.92% Impervious Runoff Depth>3.17"
Flow Length=1,200' Tc=60.0 min CN=63 Runoff=6.75 cfs 1.118 af

Subcatchment E7S: TO CB104 Runoff Area=0.239 ac 100.00% Impervious Runoff Depth>6.95"
Tc=6.0 min CN=98 Runoff=1.83 cfs 0.138 af

Subcatchment E8S: TO DB-1 Runoff Area=3.271 ac 9.60% Impervious Runoff Depth>3.10"
Flow Length=870' Tc=35.3 min CN=62 Runoff=6.73 cfs 0.844 af

Subcatchment E9S: TO 60" RCP Runoff Area=39.556 ac 3.91% Impervious Runoff Depth>4.45"
Flow Length=2,860' Tc=68.3 min CN=75 Runoff=81.70 cfs 14.673 af

Subcatchment S901: TO CB2 Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>6.95"
Tc=6.0 min CN=98 Runoff=1.91 cfs 0.145 af

Subcatchment S902: TO CB1 Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>6.95"
Tc=6.0 min CN=98 Runoff=1.91 cfs 0.145 af

Subcatchment S903: TO CB4 Runoff Area=0.342 ac 100.00% Impervious Runoff Depth>6.95"
Tc=6.0 min CN=98 Runoff=2.61 cfs 0.198 af

Subcatchment S904: TO CB3 Runoff Area=0.335 ac 100.00% Impervious Runoff Depth>6.95"
Tc=6.0 min CN=98 Runoff=2.56 cfs 0.194 af

Subcatchment S905: TO CB5 Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>6.95"
Tc=6.0 min CN=98 Runoff=1.91 cfs 0.145 af

Subcatchment S906: TO CB5 Runoff Area=0.250 ac 100.00% Impervious Runoff Depth>6.95"
Tc=6.0 min CN=98 Runoff=1.91 cfs 0.145 af

Reach E1R: OVERLAND Avg. Flow Depth=0.76' Max Vel=3.91 fps Inflow=10.36 cfs 2.767 af
n=0.070 L=184.0' S=0.0904 '/' Capacity=18.62 cfs Outflow=10.36 cfs 2.765 af

Reach E2R: OVERLAND Avg. Flow Depth=1.02' Max Vel=4.45 fps Inflow=12.35 cfs 1.486 af
n=0.070 L=510.0' S=0.0891 '/' Capacity=11.77 cfs Outflow=12.13 cfs 1.484 af

Reach E3R: OVERLAND Avg. Flow Depth=0.97' Max Vel=4.50 fps Inflow=11.58 cfs 3.319 af
n=0.070 L=473.0' S=0.0961 '/' Capacity=12.21 cfs Outflow=11.51 cfs 3.314 af

Reach E4R: OVERLAND Avg. Flow Depth=1.03' Max Vel=3.64 fps Inflow=10.27 cfs 2.318 af
n=0.070 L=683.0' S=0.0583 '/' Capacity=9.52 cfs Outflow=10.19 cfs 2.310 af

Pond 1P: CB1 Peak Elev=854.90' Inflow=1.91 cfs 0.145 af
12.0" Round Culvert n=0.013 L=90.0' S=0.0100 '/' Outflow=1.91 cfs 0.145 af

Pond 2P: CB2 Peak Elev=852.33' Inflow=1.91 cfs 0.145 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.91 cfs 0.145 af

Pond 3P: CB3 Peak Elev=856.27' Inflow=2.56 cfs 0.194 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=2.56 cfs 0.194 af

Pond 4P: CB4 Peak Elev=859.93' Inflow=6.43 cfs 0.488 af
12.0" Round Culvert n=0.013 L=50.0' S=0.0100 '/' Outflow=6.43 cfs 0.488 af

Pond 5P: CB5 Peak Elev=862.17' Inflow=1.91 cfs 0.145 af
12.0" Round Culvert n=0.013 L=260.0' S=0.0100 '/' Outflow=1.91 cfs 0.145 af

Pond 6P: CB6 Peak Elev=861.43' Inflow=3.82 cfs 0.290 af
12.0" Round Culvert n=0.013 L=60.0' S=0.0100 '/' Outflow=3.82 cfs 0.290 af

Pond 7P: SC-740 Peak Elev=852.24' Storage=6,176 cf Inflow=3.82 cfs 0.290 af
Discarded=0.06 cfs 0.064 af Primary=2.00 cfs 0.096 af Outflow=2.06 cfs 0.160 af

Pond 8P: SC-740 Peak Elev=855.91' Storage=10,240 cf Inflow=8.99 cfs 0.682 af
Discarded=0.10 cfs 0.093 af Primary=6.07 cfs 0.399 af Outflow=6.17 cfs 0.492 af

Pond 9P: DMH 3 Peak Elev=836.59' Inflow=7.95 cfs 0.495 af
12.0" Round Culvert n=0.013 L=40.0' S=0.1000 '/' Outflow=7.95 cfs 0.495 af

Pond E1P: EXIST. 15"CPP Peak Elev=880.45' Inflow=18.14 cfs 3.222 af
Primary=10.36 cfs 2.767 af Secondary=7.78 cfs 0.456 af Outflow=18.14 cfs 3.222 af

Pond E2P: EXIST. 15" CPP Peak Elev=865.11' Inflow=12.35 cfs 1.486 af
15.0" Round Culvert n=0.013 L=45.0' S=0.0242 '/' Outflow=12.35 cfs 1.486 af

Pond E3P: 60" RCP Peak Elev=817.58' Storage=5,504 cf Inflow=113.27 cfs 22.277 af
Primary=113.19 cfs 22.275 af Secondary=0.00 cfs 0.000 af Outflow=113.19 cfs 22.275 af

Pond E4P: HW101 Peak Elev=862.60' Storage=2,705 cf Inflow=12.79 cfs 3.337 af
Primary=11.58 cfs 3.319 af Secondary=1.81 cfs 0.018 af Outflow=12.95 cfs 3.337 af

Pond E5P: CB 101 Peak Elev=863.23' Inflow=2.00 cfs 0.142 af
15.0" Round Culvert n=0.013 L=194.0' S=0.0050 '/' Outflow=2.00 cfs 0.142 af

Pond E6P: CB 102 Peak Elev=863.23' Inflow=3.60 cfs 0.258 af
15.0" Round Culvert n=0.013 L=69.0' S=0.0055 '/' Outflow=3.60 cfs 0.258 af

Pond E7P: CB 103 Peak Elev=864.71' Inflow=7.00 cfs 1.136 af
15.0" Round Culvert n=0.013 L=73.0' S=0.0144 '/' Outflow=7.00 cfs 1.136 af

Pond E8P: CB 104 Peak Elev=863.22' Inflow=7.94 cfs 1.533 af
18.0" Round Culvert n=0.013 L=220.0' S=0.0050 '/' Outflow=7.94 cfs 1.533 af

Pond E9P: DB-1 Peak Elev=861.83' Storage=25,496 cf Inflow=14.63 cfs 2.377 af
Outflow=10.27 cfs 2.318 af

Link OP1: OP1 Inflow=113.19 cfs 22.275 af
Primary=113.19 cfs 22.275 af

Total Runoff Area = 62.970 ac Runoff Volume = 22.829 af Average Runoff Depth = 4.35"
92.53% Pervious = 58.268 ac 7.47% Impervious = 4.702 ac

Section 2.2

Proposed Conditions

25 Year Storm Full Summary

Summary for Subcatchment E1S: TO EXIST. 15" CPP

Runoff = 10.47 cfs @ 12.95 hrs, Volume= 1.858 af, Depth> 2.38"
Routed to Pond E1P : EXIST. 15"CPP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.020	98	Paved roads w/curbs & sewers, HSG B
0.230	96	Gravel surface, HSG B
2.000	61	>75% Grass cover, Good, HSG B
1.660	55	Woods, Good, HSG B
0.730	91	Newly graded area, HSG C
3.930	79	Woods, Fair, HSG D
0.810	70	Woods, Good, HSG C
9.380	72	Weighted Average
9.360		99.79% Pervious Area
0.020		0.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.3	100	0.0250	0.05		**Sheet Flow, A=>B** Woods: Dense underbrush n= 0.800 P2= 3.00"
31.9	1,267	0.0700	0.66		**Shallow Concentrated Flow, B=>C** Forest w/Heavy Litter Kv= 2.5 fps
0.3	100	0.0200	6.28	50.27	**Parabolic Channel, C=>D** W=6.00' D=2.00' Area=8.0 sf Perim=7.5' n= 0.035 Earth, dense weeds
67.5	1,467	Total			

Summary for Subcatchment E2S: TO EXIST. 15" CPP

Runoff = 7.69 cfs @ 12.17 hrs, Volume= 0.632 af, Depth> 3.06"
Routed to Pond E2P : EXIST. 15" CPP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.034	98	Paved roads w/curbs & sewers, HSG B
0.056	98	Paved roads w/curbs & sewers, HSG C
0.200	55	Woods, Good, HSG B
0.056	61	>75% Grass cover, Good, HSG B
1.000	91	Newly graded area, HSG C
0.670	70	Woods, Good, HSG C
0.464	74	>75% Grass cover, Good, HSG C
2.480	79	Weighted Average
2.390		96.37% Pervious Area
0.090		3.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0260	0.21		**Sheet Flow, A=>B** Range n= 0.130 P2= 3.00"
4.2	395	0.0500	1.57		**Shallow Concentrated Flow, B=>C** Short Grass Pasture Kv= 7.0 fps
0.3	220	0.0770	10.99	58.64	**Parabolic Channel,** W=4.00' D=2.00' Area=5.3 sf Perim=5.9' n= 0.035 Earth, dense weeds
12.6	715	Total			

Summary for Subcatchment E3S: TO HW101

Runoff = 4.37 cfs @ 12.14 hrs, Volume= 0.331 af, Depth> 2.43"
Routed to Pond E4P : HW101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.100	98	Paved roads w/curbs & sewers, HSG B
0.214	98	Paved parking, HSG C
0.100	96	Gravel surface, HSG B
0.045	96	Gravel surface, HSG D
0.050	80	>75% Grass cover, Good, HSG D
0.150	77	Woods, Good, HSG D
0.088	48	Brush, Good, HSG B
0.200	61	>75% Grass cover, Good, HSG B
0.500	55	Woods, Good, HSG B
0.150	74	>75% Grass cover, Good, HSG C
0.037	70	Woods, Good, HSG C
1.634	72	Weighted Average
1.320		80.78% Pervious Area
0.314		19.22% Impervious Area

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

Summary for Subcatchment E4S: TO CB 101

Runoff = 1.35 cfs @ 12.09 hrs, Volume= 0.093 af, Depth> 3.96"
Routed to Pond E5P : CB 101

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.170	98	Paved parking, HSG C
0.113	74	>75% Grass cover, Good, HSG C
0.283	88	Weighted Average
0.113		39.93% Pervious Area
0.170		60.07% Impervious Area

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

Summary for Subcatchment E5S: TO CB102

Runoff = 1.11 cfs @ 12.08 hrs, Volume= 0.079 af, Depth> 4.37"
Routed to Pond E6P : CB 102

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.167	98	Paved parking, HSG C
0.050	74	>75% Grass cover, Good, HSG C
0.217	92	Weighted Average
0.050		23.04% Pervious Area
0.167		76.96% Impervious Area

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

Summary for Subcatchment E6S: TO CB103

Runoff = 3.45 cfs @ 12.87 hrs, Volume= 0.587 af, Depth> 1.66"
Routed to Pond E7P : CB 103

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.014	98	Paved parking, HSG B
0.152	98	Paved parking, HSG C
0.076	96	Gravel surface, HSG D
0.500	61	>75% Grass cover, Good, HSG B
0.078	48	Brush, Good, HSG B
0.063	74	>75% Grass cover, Good, HSG C
0.250	80	>75% Grass cover, Good, HSG D
2.500	55	Woods, Good, HSG B
0.600	77	Woods, Good, HSG D
4.233	63	Weighted Average
4.067		96.08% Pervious Area
0.166		3.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.3	100	0.0250	0.05		**Sheet Flow, A=>B** Woods: Dense underbrush n= 0.800 P2= 3.00"
24.5	1,040	0.0800	0.71		**Shallow Concentrated Flow, B=>C** Forest w/Heavy Litter Kv= 2.5 fps
0.2	60	0.0120	4.94	69.13	**Trap/Vee/Rect Channel Flow, C=>D** Bot.W=2.00' D=2.00' Z= 2.0 & 3.0 '/' Top.W=12.00' n= 0.035 High grass
60.0	1,200	Total			

Summary for Subcatchment E7S: TO CB104

Runoff = 1.30 cfs @ 12.08 hrs, Volume= 0.098 af, Depth> 4.92"
Routed to Pond E8P : CB 104

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.239	98	Paved parking, HSG C
0.239		100.00% Impervious Area

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

Summary for Subcatchment E8S: TO DB-1

Runoff = 3.39 cfs @ 12.53 hrs, Volume= 0.438 af, Depth> 1.61"
Routed to Pond E9P : DB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.012	98	Paved parking, HSG B
0.302	98	Paved parking, HSG C
0.390	61	>75% Grass cover, Good, HSG B
0.199	74	>75% Grass cover, Good, HSG C
2.135	55	Woods, Good, HSG B
0.183	77	Woods, Good, HSG D
0.050	70	Woods, Good, HSG C
3.271	62	Weighted Average
2.957		90.40% Pervious Area
0.314		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.1000	0.08		**Sheet Flow, A=>B** Woods: Dense underbrush n= 0.800 P2= 3.00"
14.9	670	0.0900	0.75		**Shallow Concentrated Flow, B=>C** Forest w/Heavy Litter Kv= 2.5 fps
0.1	100	0.1200	13.66	191.29	**Trap/Vee/Rect Channel Flow, C=>D** Bot.W=2.00' D=2.00' Z= 2.0 & 3.0 '/' Top.W=12.00' n= 0.040 Earth, cobble bottom, clean sides
35.3	870	Total			

Summary for Subcatchment E9S: TO 60" RCP

Runoff = 48.73 cfs @ 12.95 hrs, Volume= 8.693 af, Depth> 2.64"
Routed to Pond E3P : 60" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

	Area (ac)	CN	Description
	0.650	74	>75% Grass cover, Good, HSG C
*	0.335	98	Roofs, HSG C
	0.220	98	Roofs, HSG C
	0.850	98	Paved roads w/curbs & sewers, HSG C
	0.070	98	Paved roads w/curbs & sewers, HSG B
	4.150	96	Gravel surface, HSG C
	0.020	96	Gravel surface, HSG B
	0.046	96	Gravel surface, HSG D
	0.070	98	Paved roads w/curbs & sewers, HSG D
	0.078	61	>75% Grass cover, Good, HSG B
	0.940	74	>75% Grass cover, Good, HSG C
	0.300	80	>75% Grass cover, Good, HSG D
	1.065	55	Woods, Good, HSG B
	21.762	70	Woods, Good, HSG C
	9.000	77	Woods, Good, HSG D
	39.556	75	Weighted Average
	38.011		96.09% Pervious Area
	1.545		3.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.3	100	0.0400	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.00"
34.3	1,260	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.7	1,500	0.0467	5.31	85.01	**Parabolic Channel,** W=12.00' D=2.00' Area=16.0 sf Perim=12.8' n= 0.070 Sluggish weedy reaches w/pools
68.3	2,860	Total			

Summary for Subcatchment S901: TO CB2

Runoff = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af, Depth> 4.92"
Routed to Pond 2P : CB2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG C
0.100	98	Roofs, HSG C
0.250	98	Weighted Average
0.250		100.00% Impervious Area

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

Summary for Subcatchment S902: TO CB1

Runoff = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af, Depth> 4.92"
Routed to Pond 1P : CB1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG C
0.100	98	Roofs, HSG C
0.250	98	Weighted Average
0.250		100.00% Impervious Area

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

Summary for Subcatchment S903: TO CB4

Runoff = 1.86 cfs @ 12.08 hrs, Volume= 0.140 af, Depth> 4.92"
Routed to Pond 4P : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.222	98	Paved parking, HSG C
0.120	98	Roofs, HSG C
0.342	98	Weighted Average
0.342		100.00% Impervious Area

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

Summary for Subcatchment S904: TO CB3

Runoff = 1.82 cfs @ 12.08 hrs, Volume= 0.137 af, Depth> 4.92"
Routed to Pond 3P : CB3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.215	98	Paved parking, HSG C
0.120	98	Roofs, HSG C
0.335	98	Weighted Average
0.335		100.00% Impervious Area

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

Summary for Subcatchment S905: TO CB5

Runoff = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af, Depth> 4.92"
Routed to Pond 6P : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG C
0.100	98	Roofs, HSG C
0.250	98	Weighted Average
0.250		100.00% Impervious Area

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

Summary for Subcatchment S906: TO CB5

Runoff = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af, Depth> 4.92"
Routed to Pond 5P : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Type III 24-hr 25 Year Storm Rainfall=5.55"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG C
0.100	98	Roofs, HSG C
0.250	98	Weighted Average
0.250		100.00% Impervious Area

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

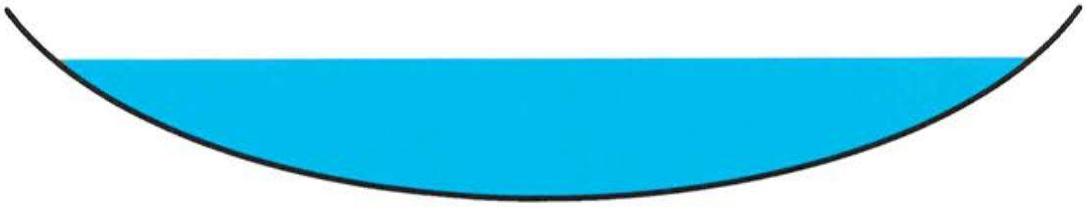
Summary for Reach E1R: OVERLAND

Inflow Area = 9.380 ac, 0.21% Impervious, Inflow Depth > 2.36" for 25 Year Storm event
Inflow = 9.74 cfs @ 12.95 hrs, Volume= 1.842 af
Outflow = 9.74 cfs @ 12.96 hrs, Volume= 1.840 af, Atten= 0%, Lag= 0.2 min
Routed to Pond E4P : HW101

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.84 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.05 fps, Avg. Travel Time= 1.5 min

Peak Storage= 466 cf @ 12.96 hrs
Average Depth at Peak Storage= 0.74' , Surface Width= 5.15'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 18.62 cfs

6.00' x 1.00' deep Parabolic Channel, n= 0.070 Sluggish weedy reaches w/pools
Length= 184.0' Slope= 0.0904 '/'
Inlet Invert= 875.63', Outlet Invert= 859.00'



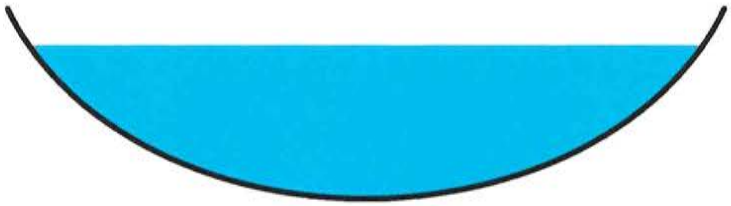
Summary for Reach E2R: OVERLAND

Inflow Area = 2.480 ac, 3.63% Impervious, Inflow Depth > 3.14" for 25 Year Storm event
Inflow = 7.69 cfs @ 12.17 hrs, Volume= 0.649 af
Outflow = 7.52 cfs @ 12.20 hrs, Volume= 0.647 af, Atten= 2%, Lag= 1.7 min
Routed to Pond E3P : 60" RCP

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.89 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 1.55 fps, Avg. Travel Time= 5.5 min

Peak Storage= 987 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.81' , Surface Width= 3.60'
Bank-Full Depth= 1.00' Flow Area= 2.7 sf, Capacity= 11.77 cfs

4.00' x 1.00' deep Parabolic Channel, n= 0.070 Sluggish weedy reaches w/pools
Length= 510.0' Slope= 0.0891 '/'
Inlet Invert= 859.02', Outlet Invert= 813.56'



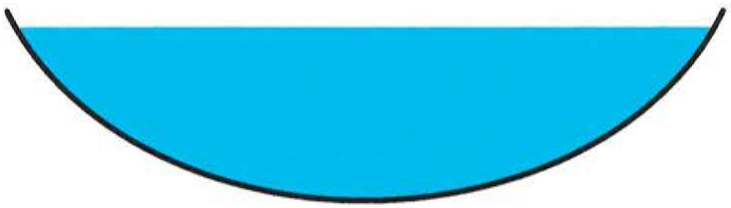
Summary for Reach E3R: OVERLAND

Inflow Area = 11.014 ac, 3.03% Impervious, Inflow Depth > 2.37" for 25 Year Storm event
Inflow = 10.15 cfs @ 13.09 hrs, Volume= 2.171 af
Outflow = 10.15 cfs @ 13.11 hrs, Volume= 2.167 af, Atten= 0%, Lag= 1.4 min
Routed to Pond E3P : 60" RCP

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Max. Velocity= 4.35 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 2.45 fps, Avg. Travel Time= 3.2 min

Peak Storage= 1,104 cf @ 13.11 hrs
Average Depth at Peak Storage= 0.92' , Surface Width= 3.83'
Bank-Full Depth= 1.00' Flow Area= 2.7 sf, Capacity= 12.21 cfs

4.00' x 1.00' deep Parabolic Channel, n= 0.070 Sluggish weedy reaches w/pools
Length= 473.0' Slope= 0.0961 '/'
Inlet Invert= 859.00', Outlet Invert= 813.56'



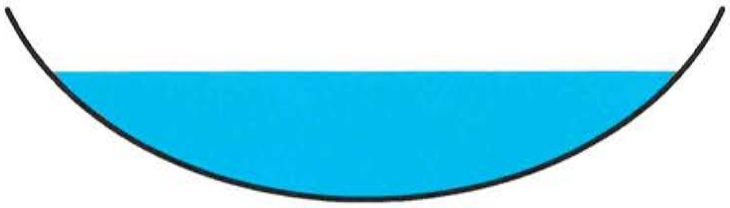
Summary for Reach E4R: OVERLAND

Inflow Area = 8.243 ac, 12.81% Impervious, Inflow Depth > 1.85" for 25 Year Storm event
Inflow = 4.17 cfs @ 13.23 hrs, Volume= 1.273 af
Outflow = 4.17 cfs @ 13.28 hrs, Volume= 1.267 af, Atten= 0%, Lag= 3.1 min
Routed to Pond E3P : 60" RCP

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.82 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 1.52 fps, Avg. Travel Time= 7.5 min

Peak Storage= 1,009 cf @ 13.28 hrs
Average Depth at Peak Storage= 0.67' , Surface Width= 3.29'
Bank-Full Depth= 1.00' Flow Area= 2.7 sf, Capacity= 9.52 cfs

4.00' x 1.00' deep Parabolic Channel, n= 0.070 Sluggish weedy reaches w/pools
Length= 683.0' Slope= 0.0583 '/'
Inlet Invert= 853.40', Outlet Invert= 813.56'



Summary for Pond 1P: CB1

Inflow Area = 0.250 ac,100.00% Impervious, Inflow Depth > 4.92" for 25 Year Storm event
Inflow = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af
Outflow = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af
Routed to Pond 7P : SC-740

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 854.71' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	854.00'	**12.0" Round Culvert** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 854.00' / 853.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.35 cfs @ 12.08 hrs HW=854.71' TW=849.89' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 1.35 cfs @ 2.27 fps)

Summary for Pond 2P: CB2

Inflow Area = 0.250 ac,100.00% Impervious, Inflow Depth > 4.92" for 25 Year Storm event
Inflow = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af
Outflow = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af
Routed to Pond 7P : SC-740

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 851.96' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	851.20'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 851.20' / 851.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.35 cfs @ 12.08 hrs HW=851.96' TW=849.89' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.35 cfs @ 2.92 fps)

Summary for Pond 3P: CB3

Inflow Area = 0.335 ac,100.00% Impervious, Inflow Depth > 4.92" for 25 Year Storm event
Inflow = 1.82 cfs @ 12.08 hrs, Volume= 0.137 af
Outflow = 1.82 cfs @ 12.08 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min
Primary = 1.82 cfs @ 12.08 hrs, Volume= 0.137 af
Routed to Pond 8P : SC-740

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 855.72' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	854.80'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 854.80' / 854.70' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.81 cfs @ 12.08 hrs HW=855.72' TW=851.60' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.81 cfs @ 3.14 fps)

Summary for Pond 4P: CB4

Inflow Area = 0.842 ac,100.00% Impervious, Inflow Depth > 4.92" for 25 Year Storm event
Inflow = 4.57 cfs @ 12.08 hrs, Volume= 0.345 af
Outflow = 4.57 cfs @ 12.08 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min
Primary = 4.57 cfs @ 12.08 hrs, Volume= 0.345 af
Routed to Pond 8P : SC-740

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 855.82' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	851.80'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 851.80' / 851.30' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.55 cfs @ 12.08 hrs HW=854.62' TW=851.60' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 4.55 cfs @ 5.79 fps)

Summary for Pond 5P: CB5

Inflow Area = 0.250 ac,100.00% Impervious, Inflow Depth > 4.92" for 25 Year Storm event
Inflow = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af
Outflow = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.36 cfs @ 12.08 hrs, Volume= 0.102 af
Routed to Pond 6P : CB6

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs

Peak Elev= 856.28' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	855.10'	**12.0" Round Culvert** L= 260.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 855.10' / 852.50' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.05 cfs @ 12.08 hrs HW=855.91' TW=855.30' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.05 cfs @ 2.10 fps)

Summary for Pond 6P: CB6

Inflow Area = 0.500 ac,100.00% Impervious, Inflow Depth > 4.92" for 25 Year Storm event
Inflow = 2.71 cfs @ 12.08 hrs, Volume= 0.205 af
Outflow = 2.71 cfs @ 12.08 hrs, Volume= 0.205 af, Atten= 0%, Lag= 0.0 min
Primary = 2.71 cfs @ 12.08 hrs, Volume= 0.205 af
Routed to Pond 4P : CB4

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 856.20' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	852.50'	**12.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 852.50' / 851.90' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.46 cfs @ 12.08 hrs HW=855.30' TW=854.62' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 2.46 cfs @ 3.13 fps)

Summary for Pond 7P: SC-740

Inflow Area = 0.500 ac,100.00% Impervious, Inflow Depth > 4.92" for 25 Year Storm event
Inflow = 2.71 cfs @ 12.08 hrs, Volume= 0.205 af
Outflow = 0.15 cfs @ 13.96 hrs, Volume= 0.078 af, Atten= 95%, Lag= 112.8 min
Discarded = 0.06 cfs @ 13.96 hrs, Volume= 0.062 af
Primary = 0.09 cfs @ 13.96 hrs, Volume= 0.016 af
Routed to Pond 9P : DMH 3

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 851.46' @ 13.96 hrs Surf.Area= 2,960 sf Storage= 5,822 cf

Plug-Flow detention time= 200.6 min calculated for 0.078 af (38% of inflow)
Center-of-Mass det. time= 78.4 min (812.9 - 734.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	848.20'	2,626 cf	**15.75'W x 181.62'L x 3.50'H Field A** 10,012 cf Overall - 3,446 cf Embedded = 6,566 cf x 40.0% Voids
#2A	848.70'	3,446 cf	**ADS_StormTech SC-740 +Cap** x 75 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 75 Chambers in 3 Rows
#3	851.20'	3,636 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		9,708 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
851.20	100	0	0	100
852.00	100	80	80	128
854.00	100	200	280	199
855.70	1,250	965	1,245	1,357
857.00	2,500	2,391	3,636	2,623

Device	Routing	Invert	Outlet Devices
#1	Discarded	848.20'	**0.600 in/hr Exfiltration over Wetted area**
#2	Primary	855.90'	**4.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#3	Primary	851.30'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 851.30' / 851.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.06 cfs @ 13.96 hrs HW=851.46' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.09 cfs @ 13.96 hrs HW=851.46' TW=829.35' (Dynamic Tailwater)
├**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
└**3=Culvert** (Inlet Controls 0.09 cfs @ 1.07 fps)

Summary for Pond 8P: SC-740

Inflow Area = 1.177 ac,100.00% Impervious, Inflow Depth > 4.92" for 25 Year Storm event
Inflow = 6.39 cfs @ 12.08 hrs, Volume= 0.482 af
Outflow = 4.93 cfs @ 12.15 hrs, Volume= 0.295 af, Atten= 23%, Lag= 4.0 min
Discarded = 0.09 cfs @ 12.15 hrs, Volume= 0.091 af
Primary = 4.84 cfs @ 12.15 hrs, Volume= 0.204 af
Routed to Pond 9P : DMH 3

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 854.43' @ 12.15 hrs Surf.Area= 4,362 sf Storage= 9,064 cf

Plug-Flow detention time= 140.7 min calculated for 0.294 af (61% of inflow)

Center-of-Mass det. time= 61.6 min (796.1 - 734.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	848.20'	3,747 cf	**15.75'W x 259.94'L x 3.50'H Field A** 14,329 cf Overall - 4,962 cf Embedded = 9,367 cf x 40.0% Voids
#2A	848.70'	4,962 cf	**ADS_StormTech SC-740 +Cap** x 108 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 108 Chambers in 3 Rows
#3	851.20'	3,636 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		12,345 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
851.20	100	0	0	100
852.00	100	80	80	128
854.00	100	200	280	199
855.70	1,250	965	1,245	1,357
857.00	2,500	2,391	3,636	2,623

Device	Routing	Invert	Outlet Devices
#1	Discarded	848.20'	**0.600 in/hr Exfiltration over Wetted area**
#2	Primary	855.90'	**4.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#3	Primary	851.30'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 851.30' / 851.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.09 cfs @ 12.15 hrs HW=854.39' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=4.81 cfs @ 12.15 hrs HW=854.39' TW=832.09' (Dynamic Tailwater)
├**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
└**3=Culvert** (Inlet Controls 4.81 cfs @ 6.12 fps)

Summary for Pond 9P: DMH 3

Inflow Area = 1.677 ac,100.00% Impervious, Inflow Depth > 1.57" for 25 Year Storm event
Inflow = 4.84 cfs @ 12.15 hrs, Volume= 0.220 af
Outflow = 4.84 cfs @ 12.15 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min
Primary = 4.84 cfs @ 12.15 hrs, Volume= 0.220 af
Routed to Pond E3P : 60" RCP

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs

Peak Elev= 832.13' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	829.00'	**12.0" Round Culvert** L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 829.00' / 825.00' S= 0.1000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.81 cfs @ 12.15 hrs HW=832.09' TW=815.29' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 4.81 cfs @ 6.12 fps)

Summary for Pond E1P: EXIST. 15"CPP

Inflow Area = 9.380 ac, 0.21% Impervious, Inflow Depth > 2.38" for 25 Year Storm event
Inflow = 10.47 cfs @ 12.95 hrs, Volume= 1.858 af
Outflow = 10.47 cfs @ 12.95 hrs, Volume= 1.858 af, Atten= 0%, Lag= 0.0 min
Primary = 9.74 cfs @ 12.95 hrs, Volume= 1.842 af
Routed to Reach E1R : OVERLAND
Secondary = 0.72 cfs @ 12.95 hrs, Volume= 0.016 af
Routed to Pond E2P : EXIST. 15" CPP

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 880.09' @ 12.95 hrs
Flood Elev= 881.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	876.75'	**15.0" Round Culvert** L= 48.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 876.75' / 875.63' S= 0.0230 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	880.00'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=9.74 cfs @ 12.95 hrs HW=880.09' TW=876.37' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 9.74 cfs @ 7.94 fps)

Secondary OutFlow Max=0.72 cfs @ 12.95 hrs HW=880.09' TW=860.77' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.72 cfs @ 0.77 fps)

Summary for Pond E2P: EXIST. 15" CPP

Inflow Area = 2.480 ac, 3.63% Impervious, Inflow Depth > 3.14" for 25 Year Storm event
Inflow = 7.69 cfs @ 12.17 hrs, Volume= 0.649 af
Outflow = 7.69 cfs @ 12.17 hrs, Volume= 0.649 af, Atten= 0%, Lag= 0.0 min
Primary = 7.69 cfs @ 12.17 hrs, Volume= 0.649 af
Routed to Reach E2R : OVERLAND

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 862.43' @ 12.17 hrs
Flood Elev= 863.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	860.11'	**15.0" Round Culvert** L= 45.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 860.11' / 859.02' S= 0.0242 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.67 cfs @ 12.17 hrs HW=862.42' TW=859.82' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 7.67 cfs @ 6.25 fps)

Summary for Pond E3P: 60" RCP

Inflow Area = 62.970 ac, 7.47% Impervious, Inflow Depth > 2.48" for 25 Year Storm event
Inflow = 65.08 cfs @ 12.96 hrs, Volume= 12.994 af
Outflow = 65.07 cfs @ 12.97 hrs, Volume= 12.993 af, Atten= 0%, Lag= 0.6 min
Primary = 65.07 cfs @ 12.97 hrs, Volume= 12.993 af
Routed to Link OP1 : OP1
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link OP1 : OP1

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 816.40' @ 12.97 hrs Surf.Area= 1,987 sf Storage= 2,348 cf

Plug-Flow detention time= 0.4 min calculated for 12.976 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (842.6 - 842.2)

Volume	Invert	Avail.Storage	Storage Description
#1	813.56'	61,962 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
813.56	0	0	0
814.00	100	22	22
816.00	1,530	1,630	1,652
818.00	3,840	5,370	7,022
820.00	6,940	10,780	17,802
822.00	10,750	17,690	35,492
824.00	15,720	26,470	61,962

Device	Routing	Invert	Outlet Devices
#1	Primary	813.56'	**60.0" Round Culvert** L= 86.0' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 813.56' / 812.70' S= 0.0100 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 19.63 sf
#2	Secondary	822.50'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=65.05 cfs @ 12.97 hrs HW=816.40' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 65.05 cfs @ 8.18 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=813.56' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond E4P: HW101

Inflow Area = 11.014 ac, 3.03% Impervious, Inflow Depth > 2.37" for 25 Year Storm event
Inflow = 10.38 cfs @ 12.84 hrs, Volume= 2.172 af
Outflow = 10.20 cfs @ 13.09 hrs, Volume= 2.171 af, Atten= 2%, Lag= 15.0 min
Primary = 10.15 cfs @ 13.09 hrs, Volume= 2.171 af
Routed to Reach E3R : OVERLAND
Secondary = 0.05 cfs @ 13.09 hrs, Volume= 0.001 af
Routed to Pond E7P : CB 103

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 861.94' @ 13.09 hrs Surf.Area= 1,460 sf Storage= 1,738 cf

Plug-Flow detention time= 1.2 min calculated for 2.168 af (100% of inflow)
Center-of-Mass det. time= 1.1 min (842.6 - 841.5)

Volume	Invert	Avail.Storage	Storage Description
#1	859.00'	2,705 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
859.00	0	0	0
860.00	220	110	110
862.00	1,500	1,720	1,830
862.50	2,000	875	2,705

Device	Routing	Invert	Outlet Devices
#1	Primary	858.40'	**18.0" Round Culvert** L= 134.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 858.40' / 849.00' S= 0.0701 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	861.90'	**126.0 deg x 2.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.48 (C= 3.10)

Primary OutFlow Max=10.15 cfs @ 13.09 hrs HW=861.94' TW=859.92' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 10.15 cfs @ 5.74 fps)

Secondary OutFlow Max=0.05 cfs @ 13.09 hrs HW=861.94' TW=860.57' (Dynamic Tailwater)
↑—**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.05 cfs @ 0.60 fps)

Summary for Pond E5P: CB 101

Inflow Area = 0.283 ac, 60.07% Impervious, Inflow Depth > 3.96" for 25 Year Storm event
Inflow = 1.35 cfs @ 12.09 hrs, Volume= 0.093 af
Outflow = 1.35 cfs @ 12.09 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min
Primary = 1.35 cfs @ 12.09 hrs, Volume= 0.093 af
Routed to Pond E6P : CB 102

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 860.25' @ 13.16 hrs
Flood Elev= 861.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	857.90'	**15.0" Round Culvert** L= 194.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 857.90' / 856.93' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.29 cfs @ 12.09 hrs HW=858.61' TW=857.91' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.29 cfs @ 2.59 fps)

Summary for Pond E6P: CB 102

Inflow Area = 0.500 ac, 67.40% Impervious, Inflow Depth > 4.14" for 25 Year Storm event
Inflow = 2.46 cfs @ 12.08 hrs, Volume= 0.172 af
Outflow = 2.46 cfs @ 12.08 hrs, Volume= 0.172 af, Atten= 0%, Lag= 0.0 min
Primary = 2.46 cfs @ 12.08 hrs, Volume= 0.172 af
Routed to Pond E8P : CB 104

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 860.25' @ 13.14 hrs
Flood Elev= 861.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	856.83'	**15.0" Round Culvert** L= 69.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 856.83' / 856.45' S= 0.0055 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.17 cfs @ 12.08 hrs HW=857.91' TW=857.61' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.17 cfs @ 2.60 fps)

Summary for Pond E7P: CB 103

Inflow Area = 4.233 ac, 3.92% Impervious, Inflow Depth > 1.67" for 25 Year Storm event
Inflow = 3.45 cfs @ 12.87 hrs, Volume= 0.587 af
Outflow = 3.45 cfs @ 12.87 hrs, Volume= 0.587 af, Atten= 0%, Lag= 0.0 min
Primary = 3.45 cfs @ 12.87 hrs, Volume= 0.587 af
Routed to Pond E8P : CB 104

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 860.57' @ 13.06 hrs
Flood Elev= 860.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	857.50'	**15.0" Round Culvert** L= 73.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 857.50' / 856.45' S= 0.0144 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.27 cfs @ 12.87 hrs HW=860.39' TW=860.03' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 3.27 cfs @ 2.67 fps)

Summary for Pond E8P: CB 104

Inflow Area = 4.972 ac, 14.92% Impervious, Inflow Depth > 2.07" for 25 Year Storm event
Inflow = 4.17 cfs @ 12.09 hrs, Volume= 0.858 af
Outflow = 4.17 cfs @ 12.09 hrs, Volume= 0.858 af, Atten= 0%, Lag= 0.0 min
Primary = 4.17 cfs @ 12.09 hrs, Volume= 0.858 af
Routed to Pond E9P : DB-1

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 860.25' @ 13.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	856.20'	**18.0" Round Culvert** L= 220.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 856.20' / 855.10' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.72 cfs @ 12.09 hrs HW=857.62' TW=857.05' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 3.72 cfs @ 2.78 fps)

Summary for Pond E9P: DB-1

Inflow Area = 8.243 ac, 12.81% Impervious, Inflow Depth > 1.89" for 25 Year Storm event
Inflow = 6.64 cfs @ 12.65 hrs, Volume= 1.296 af
Outflow = 4.17 cfs @ 13.23 hrs, Volume= 1.273 af, Atten= 37%, Lag= 34.4 min
Primary = 4.17 cfs @ 13.23 hrs, Volume= 1.273 af
Routed to Reach E4R : OVERLAND

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs
Peak Elev= 859.98' @ 13.23 hrs Surf.Area= 4,488 sf Storage= 12,552 cf

Plug-Flow detention time= 43.5 min calculated for 1.273 af (98% of inflow)
Center-of-Mass det. time= 37.0 min (866.1 - 829.2)

Volume	Invert	Avail.Storage	Storage Description
#1	855.00'	32,787 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
855.00	863	0	0
856.00	1,444	1,154	1,154
858.00	2,765	4,209	5,363
860.00	4,503	7,268	12,631
862.00	10,074	14,577	27,208
862.50	12,242	5,579	32,787

Device	Routing	Invert	Outlet Devices
#1	Primary	854.80'	**18.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 854.80' / 853.40' S= 0.0175 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

#2	Device 1	855.00'	**5.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	857.00'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	861.50'	**20.0" x 29.5" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.17 cfs @ 13.23 hrs HW=859.98' TW=854.07' (Dynamic Tailwater)
- **1=Culvert** (Passes 4.17 cfs of 17.91 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 1.43 cfs @ 10.52 fps)
  - **3=Orifice/Grate** (Orifice Controls 2.74 cfs @ 7.84 fps)
  - **4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Link OP1: OP1

Inflow Area = 62.970 ac, 7.47% Impervious, Inflow Depth > 2.48" for 25 Year Storm event
Inflow = 65.07 cfs @ 12.97 hrs, Volume= 12.993 af
Primary = 65.07 cfs @ 12.97 hrs, Volume= 12.993 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.02 hrs

Section 3.1

Rip Rap Apron Design

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206 Elm Street, Milford, NH 03055 - Phone: 603-672-5456 - Fax: 603-413-5456
www.FieldstoneLandConsultants.com

Self-Storage Development - Michael D. Lamarre

RIPRAP APRON DESIGN

Project: Michael D. Lamarre
File: 1755.02_Riprap.xls
Date: 06/16/22
Design Eng: CLR
Revised:
Revised By:

This spreadsheet is based on the Dec. 2008 "New Hampshire Stormwater Management Manual, Volume 2, Post-Construction Best Management Practices: Selection And Design"

Nomenclature:
L = length of the apron (ft)
D_0 = max. inside width of outlet pipe or channel (ft)
Q = outlet discharge (cfs)
TW = tailwater depth (ft)
W_{in} = width of the apron at culvert outlet (ft)
W_{out} = width of the apron at the end of apron (ft)
D_{50} = median stone diameter (inches)

DESIGN CRITERIA

Design Storm: 10 Year

Riprap Apron Length:
$L=1.8Q/D_0^{1.5}+7D_0$ (when $TW<D_0/2$)
$L=3.0Q/D_0^{1.5}+7D_0$ (when $TW>D_0/2$)

Riprap Apron Width @ Culvert Outlet:
$W_{in}=3D_0$
Riprap Apron Width @ End of Apron (no defined channel):
$W_{out}=3D_0+L_a$ (when $TW<D_0/2$)
$W_{out}=3D_0+0.4L_a$ (when $TW>D_0/2$)
Riprap Apron Width @ End of Apron (defined channel):
$W_{out}>D_0$, Structural lining shall extend a min. of 1Ft. above the TW elevation but no lower than 2/3 the vertical conduit dimension above the conduit.

Riprap Diameter:
$D_{50}=[0.02Q^{1.3}/(TW*D_0)]*12$
50% of stone by weight should be smaller than D_{50}. The largest stone size in the mixture shall be 1.5 times D_{50}.

OUTLET APRON DESIGN

Location (STRUCT.)	Q (CFS)	D_0 (FT.)	TW (FT.)	L_a (FT.)	Width (FT) W_{in}	Width (FT) W_{out}	D_{50} (Dia. - INCHES)	Thickness (INCHES)
HW3	1.9	1.0	0.7	13	3	8	4	12
HW4	3.0	1.5	0.7	13	5	18	4	12

Section 3.2

Maintenance Manual

Michael D. LaMarre
Map 2, Lot 37-A, Greenville, New Hampshire
Storm Water Management System
Inspection and Maintenance Manual

Introduction

The operation and maintenance of a storm water management system and its individual components is as critical to system performance as the design. Without proper maintenance, best management practices (BMPs) are likely to become functionally impaired. Proper operation and maintenance will ensure that the storm water system and individual BMPs will remain effective at removing pollutants as designed and meeting New Hampshire's water quality objectives. Proper maintenance will:

- Maintain the peak rate of storm water treated over the long term;
- Sustain the pollutant removal efficiency of the BMP;
- Reduce the risk of re-suspending sediment and other pollutants captured by the BMP;
- Prevent structural deterioration of the BMP and minimize the need for expensive repairs;
- Decrease the potential for failure of the BMP.

The NH Department of Environmental Services Alteration of Terrain (AoT) regulations (Env-Wq 1500) require the long term maintenance of storm water practices, and stipulate the establishment of a mechanism to provide for ongoing inspections and maintenance.

In accordance with Env-Wq 1507.07 Long-Term Maintenance the mechanism for providing long-term maintenance practices for this development are as follows:

Responsible Maintenance Party:

Owner: Michael D. LaMarre
P.O. Box 495
Greenville, NH 03048

Report Information:

- Michael LaMarre will be responsible for implementing the required reporting, inspection, and maintenance activities identified in the I & M manual.
- Michael LaMarre will maintain all record keeping required by the I & M manual. Any transfer of responsibility for I & M activities or transfer in ownership shall be documented to the Town in writing.
- Inspection and maintenance reports shall be completed after each inspection. Copies of the report forms to be completed by the inspector are attached at the end of this manual, including:
    - Inspection checklist to be used during each inspection;
    - Inspection and maintenance logs to document each inspection and maintenance activity;

Maintenance Recommendations for Best Management Practices:

The following recommendations are to be used as a guide for the inspection and maintenance of the permanent erosion and sediment control measures.

Stormwater Management Basin

- Basins should be inspected at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or rehabilitation conducted as warranted by such inspection.
- Inspect, repair and remove debris from headwalls, end sections and riprap aprons.
- Remove woody vegetation from the Stormwater Management Basin with periodic mowing of embankments.
- Inspection and repair of embankments and spillways as required.
- Remove accumulated sediment from basin bottom and crushed stone as necessary.
- Dispose of sediments and other wastes in conformance with applicable local, state and federal regulations.
- If an infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limited to removal of accumulated sediments or reconstruction of the infiltration basin.

Drainage Catch Basins

- Inspect basins at least semi-annually.
- Vacuum the sediment basins when the sediment reaches one-half the depth from the bottom of the catch basin to the invert of the outlet pipe.
- Repair damaged basin grates immediately after the inspection.
- Repair pavement damage around the basins immediately after the inspection to prevent further damage to the structure or paved area.
- Dispose of sediments and other wastes in conformance with applicable local, state and federal regulations.

Stone Berm Level Spreaders

- Inspected annually for sediment accumulation, debris, and signs of erosion within the approach channel, spreader channel or down slope of the spreader.
- Remove debris upon inspection and mow annually to control woody vegetation within the spreader.
- Remove sediment when accumulation exceeds 25% of spreader channel depth.

- Repair any erosion and re-grade or replace stone berm material as warranted by inspection
- Reconstruct the spreader if down-slope channelization indicates that the spreader is not level or that discharge has become concentrated and corrections cannot be made through minor re-grading.

Drainage Ditches

- Inspect annually for sediment accumulation, debris, and signs of erosion within the channel.
- Remove debris upon inspection and mow annually to control woody vegetation within the ditch.
- Remove sediment when accumulation exceeds 33% of channel depth.
- Repair any erosion and re-grade or replace stone material as warranted by inspection

Outlet Protection - Riprap Aprons

- Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.
- Remove debris from apron area.

Inspection Checklist /Maintenance Logs

The inspection checklist and maintenance logs following this report shall be used as a guide for the inspection reporting for this project.

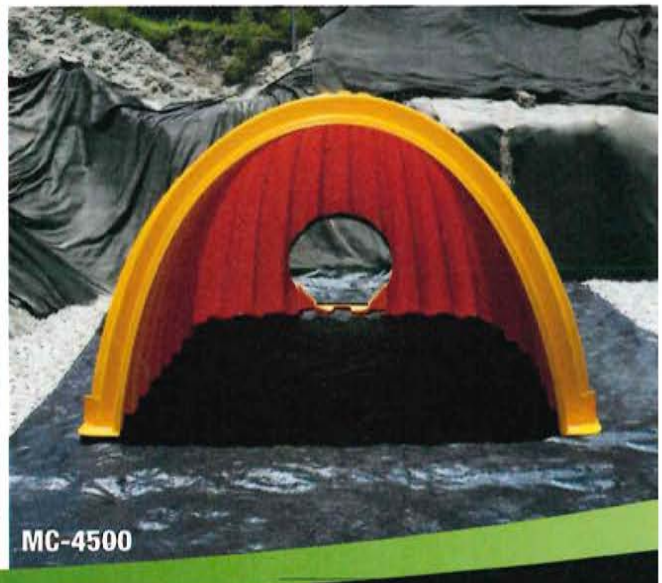
Inspection Checklist

- ☐ Surface at Each Drainage Catch Basin
- ☐ Drainage Catch Basin Sumps
- ☐ Stone Berm Level Spreader
- ☐ Stormtech Chambers
- ☐ Drainage Ditches/Swales
- ☐ Riprap Aprons at Headwall Outlets
- ☐ Headwall Inlets

Deicing Log					
Air Temp.	Weather Conditions	Date of Application	Type of Deicer Used	Amount of Deicer Used	Deicer Applied By

StormTech
Detention • Retention • Water Quality
An ADS company

Isolator® Row O&M Manual



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ADS

THE ISOLATOR® ROW

INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a technique to inexpensively enhance Total Suspended Solids (TSS) removal and provide easy access for inspection and maintenance.

THE ISOLATOR ROW

The Isolator Row is a row of StormTech chambers, either SC-160LP, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC- 310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

Two different fabrics are used for the Isolator Row. A woven geotextile fabric is placed between the stone and the Isolator Row chambers. The tough geotextile provides a media for storm water filtration and provides a durable surface for maintenance operations. It is also designed to prevent scour of the underlying stone and remain intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the SC-160LP, DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

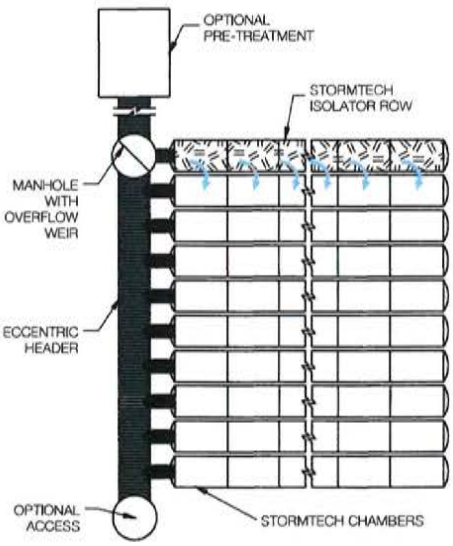
The Isolator Row is typically designed to capture the "first flush" and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed the capacity of the Isolator Row overtop the over flow weir and discharge through a manifold to the other chambers.

The Isolator Row may also be part of a treatment train. By treating storm water prior to entry into the chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured. Pre-treatment best management practices can be as simple as deep sump catch basins, oil-water separators or can be innovative storm water treatment devices. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.

Looking down the Isolator Row from the manhole opening, woven geotextile is shown between the chamber and stone base.

StormTech Isolator Row with Overflow Spillway (not to scale)



ISOLATOR ROW INSPECTION/MAINTENANCE

INSPECTION

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

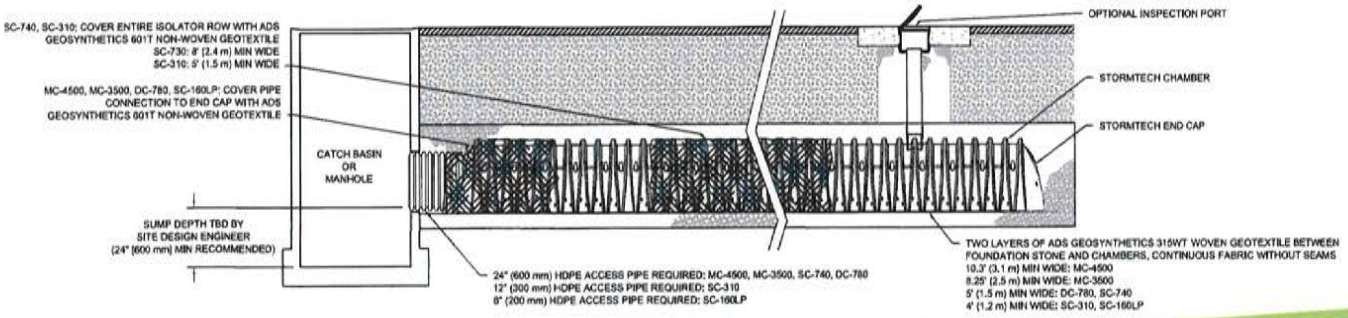
MAINTENANCE

The Isolator Row was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" are best. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**

StormTech Isolator Row (not to scale)

Note: Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-4500 chamber models and is not required over the entire Isolator Row.



ISOLATOR ROW STEP BY STEP MAINTENANCE PROCEDURES

STEP 1

Inspect Isolator Row for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Rows
   i. Remove cover from manhole at upstream end of Isolator Row
   ii. Using a flashlight, inspect down Isolator Row through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

STEP 2

Clean out Isolator Row using the JetVac process.

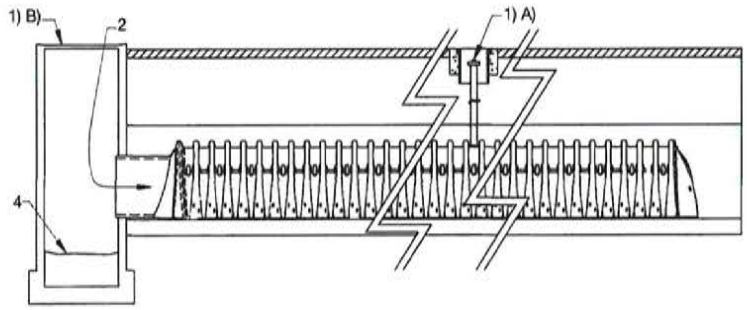
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

STEP 3

Replace all caps, lids and covers, record observations and actions.

STEP 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



SAMPLE MAINTENANCE LOG

Date	Stadia Rod Readings		Sediment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

StormTech
A division of ADS

Advanced Drainage Systems, Inc.
4640 Trueman Blvd., Hilliard, OH 43026
1-800-821-6710 www.ads-pipe.com

Section 3.3

Drainage Area Plans

LEGEND:

DRAINAGE ANALYSIS

- E1P — POND OR PIPE
- E1S — SUBCATCHMENT
- E1R — REACH
- OP1 — OBSERVATION POINTS
- HYDROLOGIC PATH
- WATERSHED BOUNDARY
- SURFACE WATER FLOW

LEGEND:

EXISTING FEATURES

RIGHT-OF-WAY LINE		UTILITY POLE & GUY	
BOUNDARY LINE		SEWER MAN-HOLE	
ABUTTING LOT LINE		WATER HYDRANT	
BUILDING SETBACK LINE		WATER VALVE	
EDGE OF PAVED ROAD		WATER SHUT-OFF	
EDGE OF GRAVEL ROAD		WELL	
STONE WALL		D.H.(f)	DRILL HOLE FOUND
EDGE OF TREE LINE		I.PIPE(f)	IRON PIPE FOUND
EDGE OF WETLANDS		I.PIN(*)	IRON PIN PER REF.PLAN
EDGE OF BROOK		D.H.(*)	DRILL HOLE PER REF. PLAN
880 — 10' CONTOUR INTERVAL		(TBS)	IRON PIN TO BE SET
862 — 2' CONTOUR INTERVAL		2-37-B	TAX MAP & LOT NUMBER
FORMER TRACT LINE			
CULVERT			
OH — OVERHEAD UTILITY LINE			
W — WATER LINE			
S — SEWER LINE			

GRAPHIC SCALE

100' 50' 0 100' 200' 300'

IMPERIAL: 1"=100'

REV.	DATE	DESCRIPTION	C/O	DR	CK

PRE-DEVELOPMENT DRAINAGE AREA PLAN

TAX MAP 2 LOTS 37-B & 37-C
(OLD MASON ROAD)
GREENVILLE, NEW HAMPSHIRE

PREPARED FOR AND LAND OF:
MICHAEL D. LAMARRE
P.O. BOX 495, GREENVILLE, NH 03048

SCALE: 1" = 100' JUNE 16, 2022

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Phone: (603) 672-5456 Fax: (603) 413-5456
www.FieldstoneLandConsultants.com

LEGEND:

DRAINAGE ANALYSIS

- E1P — POND OR PIPE
- E1S — SUBCATCHMENT
- E1R — REACH
- OP1 — OBSERVATION POINTS
- HYDROLOGIC PATH
- WATERSHED BOUNDARY
- SURFACE WATER FLOW

LEGEND:

EXISTING FEATURES

RIGHT-OF-WAY LINE	UTILITY POLE & GUY
BOUNDARY LINE	SEWER MAN-HOLE
ABUTTING LOT LINE	WATER HYDRANT
BUILDING SETBACK LINE	WATER VALVE
EDGE OF PAVED ROAD	WATER SHUT-OFF
EDGE OF GRAVEL ROAD	WELL
STONE WALL	D.H.(F) DRILL HOLE FOUND
EDGE OF TREE LINE	I.PIPE(F) IRON PIPE FOUND
EDGE OF WETLANDS	I.PIN(*) IRON PIN PER REF.PLAN
EDGE OF BROOK	D.H.(*) DRILL HOLE PER REF. PLAN
880 10' CONTOUR INTERVAL	(TBS) IRON PIN TO BE SET
862 2' CONTOUR INTERVAL	2-37-B TAX MAP & LOT NUMBER
FORMER TRACT LINE	
CULVERT	
OH OVERHEAD UTILITY LINE	
W WATER LINE	
S SEWER LINE	

GRAPHIC SCALE

100' 50' 0 100' 200' 300'

IMPERIAL: 1"=100'

REV.	DATE	DESCRIPTION	C/O	DR	CK

POST-DEVELOPMENT DRAINAGE AREA PLAN

TAX MAP 2 LOTS 37-B & 37-C
(OLD MASON ROAD)
GREENVILLE, NEW HAMPSHIRE

PREPARED FOR AND LAND OF,

MICHAEL D. LAMARRE
P.O. BOX 495, GREENVILLE, NH 03048

SCALE: 1" = 100' MAY 18, 2018

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LEGEND:

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- E1S — SUBCATCHMENT
- E1R — REACH
- OP1 — OBSERVATION POINTS
- HYDROLOGIC PATH
- WATERSHED BOUNDARY
- SURFACE WATER FLOW

LEGEND:

EXISTING FEATURES

- RIGHT-OF-WAY LINE
- BOUNDARY LINE
- ABUTTING LOT LINE
- BUILDING SETBACK LINE
- EDGE OF PAVED ROAD
- EDGE OF GRAVEL ROAD
- STONE WALL
- EDGE OF TREE LINE
- EDGE OF WETLANDS
- EDGE OF BROOK
- 880 — 10' CONTOUR INTERVAL
- 862 — 2' CONTOUR INTERVAL
- FORMER TRACT LINE
- CULVERT
- OH — OVERHEAD UTILITY LINE
- W — WATER LINE
- S — SEWER LINE
- UTILITY POLE & GUY
- SEWER MAN-HOLE
- WATER HYDRANT
- WATER VALVE
- WATER SHUT-OFF
- WELL
- D.H.(F) — DRILL HOLE FOUND
- I.PIPE(F) — IRON PIPE FOUND
- I.PIN[*] — IRON PIN PER REF.PLAN
- D.H.[*] — DRILL HOLE PER REF. PLAN
- (TBS) — IRON PIN TO BE SET
- 2-37-B — TAX MAP & LOT NUMBER

GRAPHIC SCALE

50' 25' 0 50' 100' 150'

IMPERIAL: 1"=50'

REV.	DATE	DESCRIPTION	C/O	DR	CK

POST-DEVELOPMENT DRAINAGE AREA PLAN

TAX MAP 2 LOTS 37-B & 37-C
(OLD MASON ROAD)
GREENVILLE, NEW HAMPSHIRE

PREPARED FOR AND LAND OF:
MICHAEL D. LAMARRE
P.O. BOX 495, GREENVILLE, NH 03048

SCALE: 1" = 50' MAY 18, 2018

Surveying ✦ Engineering ✦ Land Planning ✦ Permitting ✦ Septic Designs

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