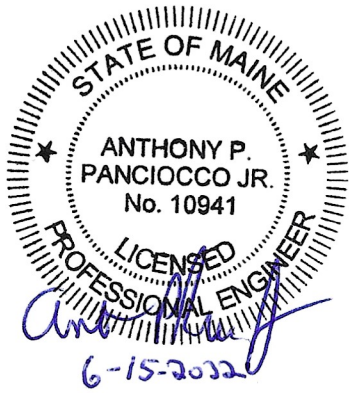
RAILROAD SQUARE
RE-DEVELOPMENT

YARMOUTH, MAINE

STORMWATER MANAGEMENT REPORT



June 2022

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TABLE OF CONTENTS

INTRODUCTION AND BACKGROUND 2
Site History 2
Stormwater Management 2
EXISTING CONDITIONS 3
Receiving Waters 3
Historical Flooding 3
Alterations to Natural Drainageways 3
PROJECT DESCRIPTION 3
Stormwater Management 3
METHODOLOGY AND MODELING ASSUMPTIONS 4
PROPOSED BMPS 5
STORMWATER QUANTITY ANALYSIS 6
Pre-development Conditions 6
Post-Development Conditions 6
Water Quantity Analysis Summary 6
STORMWATER QUALITY ANALYSIS 7
SOIL EROSION AND SEDIMENT CONTROL 7
STORMWATER MAINTENANCE PLAN 7
CONCLUSIONS 7
Limitations 8
FIGURES 0
ATTACHMENT A -STORMWATER QUALITY CALCULATIONS I
ATTACHMENT B -HYDROCAD RUNOFF AND ROUTING CALCULATIONS 2
ATTACHMENT B (i) -PRE-DEVELOPMENT MODEL RESULTS 3
ATTACHMENT B (ii) -POST-DEVELOPMENT MODEL RESULTS 4
ATTACHMENT C - STORMWATER MAINTENANCE MANUAL 5

INTRODUCTION AND BACKGROUND

Atlantic Resource Consultants (ARC) has prepared the following stormwater management analysis for the re-development of Railroad Square. The project site encompasses 4.51 acres of land and is located off the southerly side of Main Street in Yarmouth. Access to the project site is provided off Main Street. The parcel is identified as Lots 29-00A and 30 on the on the Town of Yarmouth tax map 37. The majority of the parcel is developed with buildings, pavement areas, gravel areas, and lawn areas. The southern portion of the site is wooded and contains wetland areas and a stream.

The proposed redevelopment will include the construction a mixed-use neighborhood of residential, commercial and community uses and associated paving, landscaping, utilities, and stormwater management facilities.

Site History

The project site has been developed since at least the 1950's. Throughout the years it has served as a support lot for the adjacent rail station, an asphalt batching plant, Bickford Transportation facility, and is currently utilized by some small businesses and a display area for antique construction machinery. Based on the amount of re-development on the site it is anticipated that the project will require a Stormwater Permit from the MDEP. There is currently a VRAP No Action Assurance Letter associated with the project site.

Stormwater Management

Stormwater runoff from the central/northern portion of the site is collected in a shared drainage system with the property to the west (Downeast Energy property). Runoff from portions of both properties is conveyed via the existing catch basin system to the storm drainage system located in Main Street. The Main Street system conveys runoff northerly to the Royal River and on to the ocean. The southern portion of the site drains southerly to an existing railroad culvert, which conveys runoff easterly under the railroad tracks. Runoff eventually re-enters the Town drainage system and is conveyed to the Royal River. There are currently no stormwater quality or quantity control BMPs on the project site.

New stormwater Best Management Practices BMPs have been designed to capture and treat runoff from the new improvements associated with this project. These include roof drip line filters, underdrained pervious paver areas with sand filters, a subsurface sand filter with chambers, and a surface underdrained filtration basin. The new BMP's will provide detention and water quality treatment for runoff from new impervious and developed areas associated with new development.

The new stormwater management system will maintain the existing drainage patterns at the site, while protecting water quality and ensuring that there is no increase in peak runoff from the property during design storm conditions. This stormwater management analysis has been prepared in accordance with the Maine Department of Environmental Protection (MDEP) Chapter 500 Regulations for Basic, General and Flooding

Standards to ensure that the planned development will not result in a degradation of water quality or any other significant impacts to locations downstream of the development site because of stormwater runoff.

EXISTING CONDITIONS

Currently the project site is mostly developed with buildings, pavement areas, gravel areas, and lawn areas. The southern portion of the site is wooded and contains wetland areas and a stream. The project site consists of 2.44 acres of existing impervious surface area and 3.21 acres of existing developed area.

Receiving Waters

Runoff from northern portion of the site drains to the Town drainage system and onto the Royal River. Runoff from the southern portion of the site drains to an existing railroad culvert and onto the Town system and the Royal River. The royal river is tributary to the ocean. The Royal River is not identified as an Urban Impaired Stream watershed by the MDEP.

Historical Flooding

The site is not within Flood Zone as identified on the FIRM map for the Town of Yarmouth, Community Panel Number 230055 0005 B, Panel 5 of 12 dated November 15, 1984.

Alterations to Natural Drainageways

The project will not result in any alteration of natural drainageways. An existing manmade swale will be culverted as part of the project. A field determination from MDEP is included with this application indicating that the drainage way to be culverted is not a stream.

PROJECT DESCRIPTION

The proposed redevelopment will include the construction a mixed-use neighborhood of residential, commercial and community uses and associated paving, landscaping, utilities, and stormwater management facilities. The proposed project will connect to existing public water, sewer, gas, and electrical services to be installed as part of the project.

The redevelopment of the site will result in 2.53 acres of impervious surface area and 4.31 acres of developed area. As indicated in the attached calculations this is only a 0.10 acre increase in the impervious surface area of the site.
As part of the MDEP permitting the project will be required to provide treatment for 60% of the site's developed area. The MDEP re-development calculations are included in this report.

Stormwater Management

The stormwater BMPs proposed to capture and treat runoff from the new developed areas of the site include roof drip line filters, underdrained pervious paver areas with sand filters, a subsurface sand filter with chambers,

and a surface underdrained filtration basin. These BMP's have been sized and designed in accordance with current State of Maine Chapter 500 Stormwater Law. The stormwater BMPs are designed to capture, treat, and detain runoff from impervious and developed areas of the site and will discharge to existing receiving waters via riprap aprons designed to dissipate runoff velocities.

METHODOLOGY AND MODELING ASSUMPTIONS

Runoff and routing calculations have been performed for the watershed areas affected by the proposed development under pre-development and post-development conditions scenarios. Time of concentration and runoff curve number calculations have been performed using the method described in Natural Resource Conservation Service (NRCS) Technical Release 55 (TR-55) – Urban Hydrology for Small Watersheds. The TR-20 based HydroCAD modeling software has been utilized to perform the more complex runoff and routing calculations, some of which are beyond the scope of the TR-55 method. Time of concentration calculations have been amended where the value given by the TR-55 method is less than six minutes (0.1hr). In these cases, a standard minimum value of six minutes has been used to keep this parameter within the acceptable working range of the model and prevent computational errors.

Design rainfall events have been modeled using the SCS Type III Hydrograph for 24-hour duration storms. The rainfall depth for each return period is taken from Maine Department of environmental Protection Chapter 500 Stormwater Management, Appendix H (Cumberland County). The rainfall depth values for standard design storm frequencies are shown in the table below.

	TABLE 1 - 24-Hr Rainfall Depths for Cumberland County at Design Storm Frequencies			
	Maine Chapter 500: Stormwater Management, Appendix H			
Frequency	2-Year	10-Year	25-Year	100-Year
Rainfall Depth	3.1 in	4.6 in	5.8 in	8.1 in

Soil types around the site have been identified using the Natural Resource Conservation Service (NRCS) Web Soil Survey. The existing topography of the site was determined by field survey. and utilizing lidar contours. The existing vegetative cover was identified by site inspection and survey. The following table includes a list of the surficial soil types that were identified within the proposed development area on the project site, along with their associated Hydrologic Soil Group (HSG).

TABLE 2 – SOIL TYPES	
Soil Type	**Hydrologic Soil Group**
Lamoine -BuB	C/D
Elmwood - EmB	B
Made Land - Md	C
Suffield – SuC2	C

Under pre-development conditions the site is represented by ten subcatchments that drain to two Points of Analysis, Study Point SP-1and SP-2. Study Point, SP-1 is the location where site runoff, collected in the onsite drainage system, is conveyed into the Main Street system. Study Point, SP-2 represents the location of the railroad culvert where runoff from the site is conveyed offsite.

Under the post-development conditions scenario, the site is divided into twenty smaller subcatchment areas to model the impact of localized storage within the system. The overall routing configuration remains similar to pre-developed conditions. In this way, a direct comparison can be made of pre-development and post-development runoff values at the Design Points.

PROPOSED BMPS

New Stormwater Best Management Practices (BMPs) have been designed to effectively capture, detain, and treat runoff from the new impervious area associated with the new development at the site, before allowing it to discharge in a non-erosive manner to downstream areas.

The new BMP proposed for this project is as follows:

- Filtering Drip Strips – Filtering drip edges at the exterior pitched roof segments, collect runoff from the building's roof. A stone layer is provided to store the water quality volume from the roofs. A sand filter media provides treatment for this runoff. Once through the soil media, the runoff is collected in a perforated underdrain pipe system and discharged downstream. The filter structure provides for the slow release of smaller storm events, minimizing stream channel erosion, and cooling of the discharge.

- Subsurface Sand Filter – This BMP consists of a stormwater chamber system located over a subsurface sand filter. Stormwater rises in the chambers and is filtered vertically out of the open bottom chambers through the sand filter. Once through the sand filter runoff is collected in a perforated underdrain pipe and discharged downstream. This BMP is designed to accept and treat runoff from both the new impervious area of the site but also runoff from a portion of the new landscaped areas of the site. The filter structure provides for the slow release of smaller storm events, minimizing stream channel erosion, and cooling of the discharge.

- Pervious Paver Parking area. – This BMP consists of a pervious paver section located over a stormwater reservoir, consisting of crushed stone, overlying a mineral soil filter layer. This runoff drains through the paver and the soil filter media into an underdrain system which conveys the runoff to the outlet.

- Underdrained Grass Filter - The underdrained grass filter is a shallow grassed depression filled with a filtering soil media and planted with native grasses. Runoff directed to the BMPs is detained temporarily and passes slowly through the soil media and the root zone of the planted material before draining into an underdrain system that discharges to an outlet culvert. The soil media and root zone activity provide

water quality treatment for the runoff by removing suspended particles, and through uptake and binding of dissolved pollutants and nutrients.

STORMWATER QUANTITY ANALYSIS

Pre-development Conditions

The overall model for the site is represented by ten subcatchment areas tributary to two points of analysis, SP-1and SP-2. Full details of the pre-development subcatchment areas, cover conditions and time of concentration flow paths are described in detail in the supporting HydroCAD documentation included in this report. A Predevelopment Conditions Watershed Plan is included in this report.

Post-Development Conditions

In the post-development condition, the overall site is divided into twenty watershed areas and the same two points of analysis, SP-1, and SP-2. Full details of the post-development subcatchment areas, cover conditions and time of concentration flow paths are described in detail in the supporting HydroCAD documentation included in this report. A Post-Development Conditions Watershed Plan is included as part of this report.

Water Quantity Analysis Summary

The table below summarizes the peak runoff values for predevelopment and post-development conditions during each of the analyzed design storm events.

Peak Rates of Runoff												
POA	Total Watershed Area		Avg. Weighted Curve No.		2-Year		10-Year		25-Year		100-Year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
SP-1	2.38	2.37	87	87	5.24	5.22	8.23	8.18	10.77	10.70	15.75	15.64
SP-2	4.66	4.67	76	86	5.03	4.93	10.68	7.74	15.58	10.08	25.36	17.10

As indicated in the table above the post development peak rates of runoff are maintained at or below the pre-development peak rates of runoff for all storm events at Study Points SP-1 and SP-2.

STORMWATER QUALITY ANALYSIS

Water Quality Treatment Measures

The project has been designed in accordance with the current Stormwater Law (Chapter 500) standards for a re-development site. Based on the redevelopment calculations the project will be required to provide stormwater quality treatment for 60% of the project's developed area. As indicated in the stormwater calculations the project will provide treatment for 62.8% of the projects developed area.

The project will result in approximately 2.53 acres of impervious surface area. An increase of 0.10 acres compared to the pre-development condition.

Water quality treatment will be provided by a subsurface sand filter, filtering drip strips, pervious pavers with a sand filter, and a surface underdrained filtration basin designed in accordance with the latest version of the Maine Department of Environmental Protection BMPs Technical Design Manual, to achieve the required stormwater quality treatment percentages.

SOIL EROSION AND SEDIMENT CONTROL

A comprehensive Soil Erosion and Sediment Control (SESC) narrative has been prepared that includes Best Management Practices (BMPs) associated with the proposed construction activities. The location of SESC BMPs is shown on the accompanying plans. These are further described on the details and notes sheets in the accompanying plan set.

The Erosion and Sediment Control plan and details outlines the required construction measures and techniques that will reduce potential degradation of the water quality at downstream locations. Temporary erosion control measures will be incorporated during construction, and long-term surface stabilization practices have been designed as part of the site development, thus minimizing the potential for erosion and sediment transport. These measures include the constructed BMPs for filtration of runoff from smaller storm events, riprap, permanent seeding, and other vegetative stabilization measures. Detailed information on the specific erosion and sedimentation control practices that are to be used on the site are provided on the following plan sheet, which will be included as part of the construction documents for the project.

STORMWATER MAINTENANCE PLAN

A Stormwater Management Inspection and Maintenance Manual has been prepared specifically for the project and is included in this report.

CONCLUSIONS

The stormwater management system designed for this project will mitigate impacts of development on stormwater runoff peak discharge rates and provide treatment of non-point source pollutants in the runoff in accordance with Maine's Stormwater Management Act and Regulations. Based on the analysis described herein, it is expected that runoff from the proposed development will not cause adverse impacts to downstream properties.

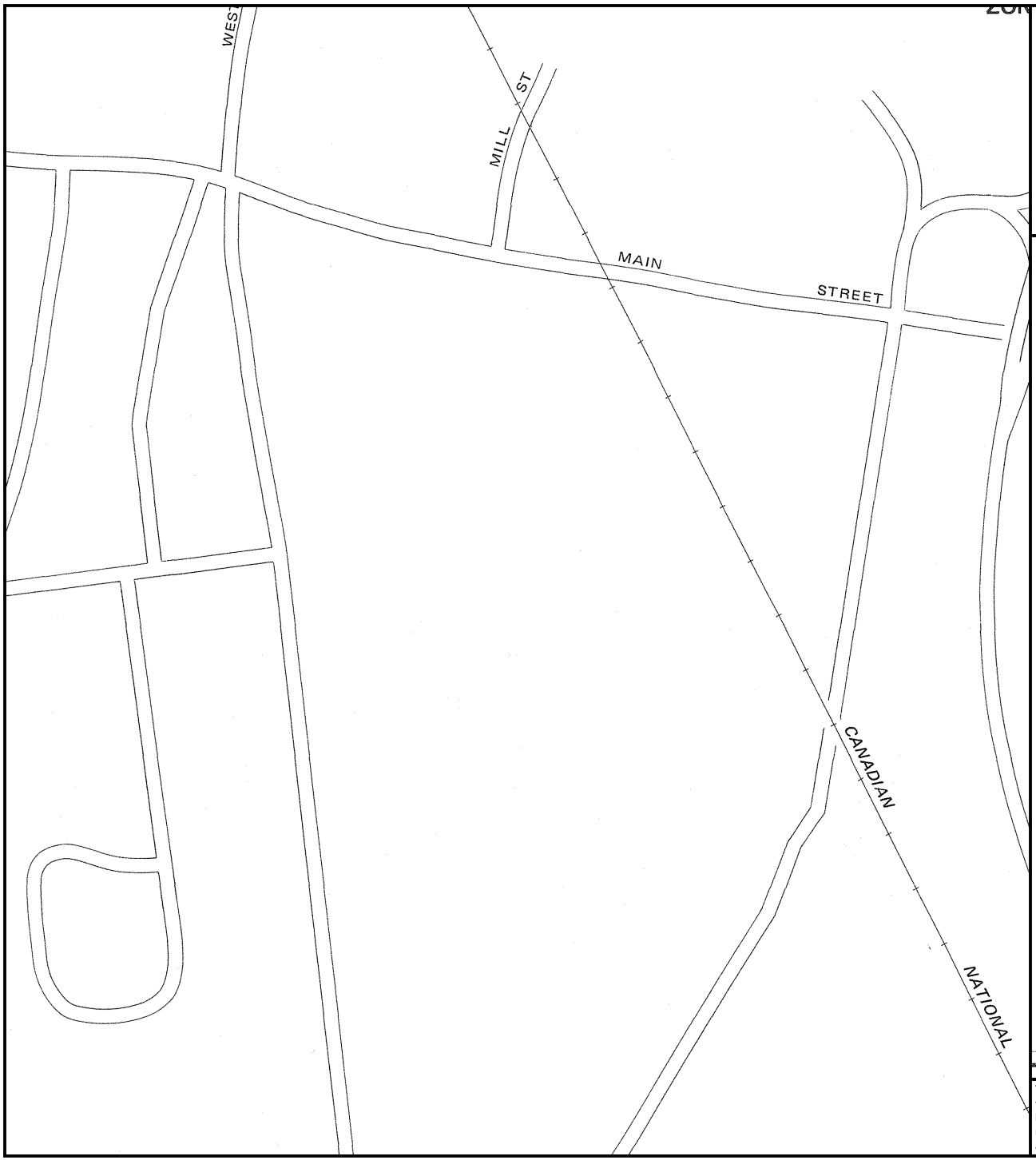
Limitations

This analysis is based on the information available to the engineer on site conditions and has been conducted using standard industry software designed to analyze comparative changes in land cover conditions. The accuracy of the runoff and routing calculations is limited by the methodology used in the software and the results should be viewed as suitable for comparative studies only.

FIGURES AND ATTACHMENTS

1. Figure 2 FEMA Flood Map
2. Figure 3 USDA SCS Web Soil Survey Map
3. Attachment A Stormwater Quality Calculations
4. Attachment B TR-20 Computations (HydroCAD)
   i. Pre-development Model
   ii. Post-development Model
5. Attachment C Stormwater Operations and Maintenance Manual

FIGURES



Program, at (800) 638-6620.

APPROXIMATE SC

400 0

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
YARMOUTH,
MAINE
CUMBERLAND COUNTY

PANEL 5 OF 12
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230055 0005 B

EFFECTIVE DATE:
NOVEMBER 15, 1984

Federal Emergency Management Agency

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Cumberland County and Part of Oxford County, Maine

Railroad Square

January 29, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map (Railroad Square).....9
Legend.....10
Map Unit Legend (Railroad Square).....12
Map Unit Descriptions (Railroad Square).....12
Cumberland County and Part of Oxford County, Maine.....14
BuB—Lamoine silt loam, 3 to 8 percent slopes.....14
EmB—Elmwood fine sandy loam, 0 to 8 percent slopes.....15
Md—Made land.....17
SuC2—Suffield silt loam, 8 to 15 percent slopes, eroded.....18
WmB—Windsor loamy sand, 0 to 8 percent slopes.....20
Soil Information for All Uses.....22
Soil Properties and Qualities.....22
Soil Erosion Factors.....22
K Factor, Whole Soil (Railroad Square).....22
Soil Qualities and Features.....26
Hydrologic Soil Group (Railroad Square).....26
Frost Action (Railroad Square).....31
References.....36

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (Railroad Square)

Map Scale: 1:2,860 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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 1:24,000.

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: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 16, Sep 16, 2019

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

Date(s) aerial images were photographed: Jun 7, 2019—Jul 2, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Map Unit Legend (Railroad Square)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BuB	Lamoine silt loam, 3 to 8 percent slopes	1.9	7.7%
EmB	Elmwood fine sandy loam, 0 to 8 percent slopes	5.6	22.5%
Md	Made land	5.8	23.2%
SuC2	Suffield silt loam, 8 to 15 percent slopes, eroded	1.2	4.7%
WmB	Windsor loamy sand, 0 to 8 percent slopes	10.5	41.8%
Totals for Area of Interest		**25.1**	**100.0%**

Map Unit Descriptions (Railroad Square)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cumberland County and Part of Oxford County, Maine

BuB—Lamoine silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t0kc
Elevation: 10 to 490 feet
Mean annual precipitation: 33 to 60 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Lamoine and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lamoine

Setting

Landform: Marine terraces, river valleys
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine glaciomarine deposits

Typical profile

Ap - 0 to 7 inches: silt loam
Bw - 7 to 13 inches: silt loam
Bg - 13 to 24 inches: silty clay loam
Cg - 24 to 65 inches: silty clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 17 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Scantic

Percent of map unit: 10 percent
Landform: Marine terraces, river valleys

Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Buxton

Percent of map unit: 3 percent
Landform: Marine terraces, river valleys
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Ragmuff

Percent of map unit: 1 percent
Landform: Marine terraces, river valleys
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Biddeford

Percent of map unit: 1 percent
Landform: Marine terraces, river valleys
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Marine Terrace Depression (F144BY002ME)
Hydric soil rating: Yes

EmB—Elmwood fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: blh8
Elevation: 10 to 900 feet
Mean annual precipitation: 36 to 55 inches
Mean annual air temperature: 39 to 46 degrees F
Frost-free period: 90 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Elmwood and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elmwood

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy glaciolacustrine deposits

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 25 inches: sandy loam
H3 - 25 to 65 inches: silty clay loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Swanton

Percent of map unit: 7 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Melrose

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Whately

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread

Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Md—Made land

Map Unit Setting

National map unit symbol: blj8
Elevation: 10 to 1,800 feet
Mean annual precipitation: 30 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Made land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Made Land

Setting

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

H1 - 0 to 65 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Buxton

Percent of map unit: 3 percent
Landform: Coastal plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Scantic

Percent of map unit: 3 percent
Landform: Coastal plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread

Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Belgrade

Percent of map unit: 3 percent
Landform: Lakebeds
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Deerfield

Percent of map unit: 2 percent
Landform: Outwash terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Au gres

Percent of map unit: 2 percent
Landform: Outwash terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Hollis

Percent of map unit: 2 percent
Landform: Till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

SuC2—Suffield silt loam, 8 to 15 percent slopes, eroded

Map Unit Setting

National map unit symbol: blk1
Elevation: 10 to 900 feet
Mean annual precipitation: 34 to 48 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Suffield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Suffield

Setting

Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine glaciolacustrine deposits

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 23 inches: silt loam
H3 - 23 to 33 inches: silty clay
H4 - 33 to 65 inches: silty clay

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Hartland

Percent of map unit: 6 percent
Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Belgrade

Percent of map unit: 5 percent
Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear

Hydric soil rating: No

Suffield, slopes >15%

Percent of map unit: 2 percent
Landform: Coastal plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Suffield, slopes <8%

Percent of map unit: 2 percent
Landform: Coastal plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

WmB—Windsor loamy sand, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w2x2
Elevation: 0 to 1,410 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Outwash terraces, deltas, outwash plains, dunes
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 5 percent
Landform: Outwash plains, eskers, deltas, kames
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Agawam

Percent of map unit: 5 percent
Landform: Kames, moraines, outwash terraces, kame terraces, outwash plains
Landform position (two-dimensional): Footslope, summit, backslope, shoulder
Landform position (three-dimensional): Side slope, crest, tread, riser, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Outwash plains, deltas, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

ATTACHMENT A -STORMWATER QUALITY CALCULATIONS

Pre-Development Redevelopment Area Information
Railroad Square Re-development

298 Main Street

Cover	Area (sf)	Area (acre)	Pollutant Ranking
Roads	0	0.00	5
Other Roads	4049	0.09	4
Other parking/drives	0	0.00	3
Other rooftops	5293	0.12	2
Non-grass landscaped	0	0.00	1
Forest/meadow	0	0.00	0
	9342	**0.21**	**0.61**

North Parcel

Cover	Area (sf)	Area (acre)	Pollutant Ranking
Roads	0	0.00	5
Other Roads	18557	0.43	4
Other parking/drives	0	0.00	3
Other rooftops	26231	0.60	2
Non-grass landscaped	10157	0.23	1
Forest/meadow	6301	0.14	0
	61246	**1.41**	**3.14**

South Parcel

Cover	Area (sf)	Area (acre)	Pollutant Ranking
Roads	0	0.00	5
Other Roads	28993	0.67	4
Other parking/drives	0	0.00	3
Other rooftops	47115	1.08	2
Non-grass landscaped	0	0.00	1
Forest/meadow	50005	1.15	0
	126113	**2.90**	**4.83**

TOTAL AREA (ACRES)	**4.52**
TOTAL AREA (S.F.)	**196,891**

EXISTING POLLUTANT IMPACT RATING	**8.58**
EXISTING IMPACT RATING PER ACRE	**1.90**

Post-Development Redevelopment Area Information
Railroad Square Re-Development

298 Main Street

Cover	Area (sf)	Area (acre)	Pollutant Ranking
Roads	0	0.00	5
Other Roads	0	0.00	4
Other parking/drives	0	0.00	3
Other rooftops	9057	0.21	2
Non-grass landscaped	285	0.01	1
Forest/meadow	0	0.00	0
	9342	**0.21**	**0.42**

North Parcel

Cover	Area (sf)	Area (acre)	Pollutant Ranking
Roads	0	0.00	5
Other Roads	10577	0.24	4
Other parking/drives	8371	0.19	3
Other rooftops	42471	0.98	2
Non-grass landscaped	0	0.00	1
Forest/meadow	0	0.00	0
	61419	**1.41**	**3.50**

South Parcel

Cover	Area (sf)	Area (acre)	Pollutant Ranking
Roads	0	0.00	5
Other Roads	19721	0.45	4
Other parking/drives	0	0.00	3
Other rooftops	67920	1.56	2
Non-grass landscaped	6000	0.14	1
Forest/meadow	32592	0.75	0
	126233	**2.90**	**4.93**

TOTAL AREA (ACRES)	**4.52**
TOTAL AREA (S.F.)	**196,891**

POST POLLUTANT IMPACT RATING	**8.85**
POST DEVELOPMENT IMPACT RATING PER ACRE	**1.96**
PRE-DEVELOPMENT IMPACT RATING PER ACRE	**1.90**
RANKED IMPACT CHANGE DUE TO DEVELOPMENT	**0.06**

Per Chapter 500 a ranked impact change = to 0.06 equates to 60% developed area treatment
See Chapter 500 Table 3 below.

Table 3
Treatment Levels for Redevelopment Projects

Ranked Impact Change Due to Redevelopment	Percentage of Developed Area that Must be Treated
0.0 or less	0% (Stormwater projects) 50% (Site projects)
≥ 0.0 to ≤ 1.0	60%
> 1.0 to ≤ 2.0	70%
> 2.0 to ≤ 3.0	80%
> 3.0	Same treatment level as for new development

Railroad Square
Pre-Development Areas
20-001.1

SP	Subcatchment		Cover	Areas	Existing Treatment
AP-1	SC-1				
			Landscaped	50	
			Woods/Brush	0	
			Ex. Imperv.	9,292	
			Offsite Imp	10,475	
		Total		*19,817*	
	SC-2				
			Landscaped	0	
			Woods/Brush	0	
			Ex. Imperv.	784	
			Offsite Imp	853	
		Total		*1,637*	
	SC-3		Offiste Landscpaed	746	
			landscape	847	
			Woods/Brush	0	
			Ex. Imperv.	2,403	
			Offsite Imp	13,779	
		Total		*17,775*	
	SC-4		Offsite landscape	1,646	
			Landscaped	914	
			Woods/Brush	1,338	
			Ex. Imperv.	1,670	
			Offsite Imp	7,341	
		Total		*12,909*	
	SC-5				
			Landscaped	0	
			Woods/Brush	0	
			Ex. Imperv.	2,744	
			Offsite Imp	5,773	
		Total		*8,517*	
	SC-6				
			Landscaped	0	
			Woods/Brush	0	
			Ex. Imperv.	630	
			Offsite Imp	3,268	
		Total		*3,898*	
	SC-7				
			Offsite Landscape	2,635	
			Woods/Brush	1,040	
			Ex. Imperv.	0	
			Offsite Imp	9,239	
		Total		*12,914*	
	SC-8				
			Offsite Landscape	2,284	
			Woods/Brush	0	
			Ex. Imperv.	0	
			Offsite Imp	9,056	
		Total		*11,340*	
	SC-9				
			Offsite Landscaped	11,072	
			Woods/Brush	0	
			Ex. Imperv.	0	
			Offsite Imp	4,183	
		Total		*15,255*	
AP-2	SC-10		Offsite Landscape	14,742	
			Landscaped	31,907	
			Woods/Brush	56,297	
			Ex. Imperv.	88,906	
			Offsite Imp	10,759	
		Total		*202,611*	
			TOTAL	306,673	7.04

Totals	Landscaped	33,718	0.77	Parcel Size
	Woods/Brush	56,297	1.29	4.51
	Impervious	106,429	2.44	
	Offsite Imp	74,726	1.72	
	Offsite Landscap	35,503	0.82	

Railroad Square
Post-Development Areas
20-001.1

SP	Subcatchmnet		Cover	Areas	Existing Treatment
			Landscaped	303	
			Woods/Brush	0	
AP-1	SC-10		Imperv.	9,039	
			Offsite Imp	10,475	
		Total		*19,817*	
			Landscaped	0	
			Woods/Brush	0	
	SC-20		Imperv.	784	
			Offsite Imp	853	
		Total		*1,637*	
			Offsite Landscape	746	
			Landscaped	754	
			Woods/Brush	0	
	SC-30		Imperv.	2,496	
			Offsite Imp	13,779	
		Total		*17,775*	
			Offsite landscape	1,646	
			Landscaped	0	
			Woods/Brush	1,338	
	SC-40		Imperv.	806	
			Offsite Imp	7,341	
		Total		*11,131*	
			Landscaped	0	
			Woods/Brush	0	
	SC-50		Imperv.	1,775	
			Offsite Imp	5,773	
		Total		*7,548*	
			Landscaped	0	
			Woods/Brush	0	
	SC-60		Imperv.	2,700	
			Offsite Imp	3,268	
		Total		*5,968*	
			Offsite Landscape	2,635	
			Woods/Brush	1,040	
	SC-70		Imperv.	0	
			Offsite Imp	9,239	
		Total		*12,914*	
			Offsite Landscape	2,284	
			Woods/Brush	0	
	SC-80		Ex. Imperv.	0	
			Offsite Imp	9,056	
		Total		*11,340*	
			Offsite Landscaped	11,072	
			Woods/Brush	0	
	SC-90		Imperv.	0	
			Offsite Imp	4,183	
		Total		*15,255*	
			Offsite Landscape	16,896	
			Landscaped	41,443	
			Woods/Brush	0	
AP-2	SC-100		Imperv.	0	
			Offsite Imp	10,765	
		Total		*69,104*	
			Offsite Landscape		
			Landscaped	7,218	
			Woods/Brush	3,766	
AP-2	SC-101		Imperv.	8,017	

Railroad Square
Post-Development Areas
20-001.1

			Offsite Imp		
		Total		*19,001*	
AP-2	**SC-102**		**Offsite Landscape**		
			Landscaped	3,387	
			Woods/Brush		
			Imperv.	4,611	
			Offsite Imp		
		Total		*7,998*	
AP-2	**SC-103**		**Offsite Landscape**		
			Landscaped	1,185	
			Woods/Brush		
			Imperv.	17,688	
			Offsite Imp		
		Total		*18,873*	
AP-2	**SC-104**		**Offsite Landscape**		
			Landscaped	1,786	
			Woods/Brush		
			Imperv.	18,803	
			Offsite Imp		
		Total		*20,589*	
AP-2	**SC-105**		**Offsite Landscape**		
			Landscaped	896	
			Woods/Brush		
			Imperv.	8,810	
			Offsite Imp		
		Total		*9,706*	
AP-2	**SC-106**		**Offsite Landscape**	0	
			Landscaped	15,887	
			Woods/Brush	0	
			Imperv.	24,393	
			Offsite Imp	0	
		Total		*40,280*	
AP-2	**SC-107**		**Offsite Landscape**		
			Landscaped	2,145	
			Woods/Brush		
			Imperv.	3,214	
			Offsite Imp		
		Total		*5,359*	
AP-2	**SC-108**		**Offsite Landscape**		
			Landscaped	2,447	
			Woods/Brush	2,448	
			Imperv.	0	
			Offsite Imp		
		Total		*4,895*	
AP-2	**SC-109**		**Offsite Landscape**		
			Landscaped	250	
			Woods/Brush	0	
			Imperv.	2,326	
			Offsite Imp		
		Total		*2,576*	
AP-2	**SC-110**		**Offsite Landscape**		
			Landscaped	0	
			Woods/Brush	0	
			Imperv.	4,907	
			Offsite Imp		
		Total		*4,907*	
			TOTAL	306,673	7.04

Totals	**Landscaped**	77,701	1.78	Site Area
	Woods/Brush	8,592	0.20	4.51
	Impervious	110,369	2.53	
	Offsite Imp	74,732	1.72	
Offsite Landscap		35,279	0.81	

STORMWATER TREATMENT SUMMARY
RAILROAD SQUARE

	Square Feet	Acres
Total Area	196,455	4.51

Predeveloped Site Summary

	Square Feet	Acres	
Developed Area	140,147	3.22	
Impervious Area	106,429	2.44	onsite
Forrested Area	56,308	1.29	

Proposed Site Summary

	Square Feet	Acres	Percentage of Total Area
Developed Area	188,070	4.32	96%
Impervious Area	110,369	2.53	56%
Forrested Area	8,592	0.2	4%

Proposed Treatment Summary

	Impervious Area Treated		Developed Area Treated		BMP
	Square Feet	Percent of Total Impervious	Square Feet	Percent of Total Developed	
SC-10	520	0.5%	520	0.3%	Pervious Pavers
SC-101	8,017	7%	15,235	8%	Filter Basin
SC-102	0	0%	0	0%	
SC-103	17,688	16%	18,873	10%	Pervious pavers and Sand Filter
SC-104	18,803	17%	20,589	11%	Drip Strip
SC-105	8,810	8%	9,706	5%	Drip Strip
SC-106	24,393	22%	40,280	21%	R-Tank and Sand filter
SC-107	3,214	3%	5,359	3%	Drip Strip
SC-108		0%		0%	
SC-109	2,326	2%	2,576	1%	Pervious Pavers and Sand Flter
SC-110	4,907	4%	4,907	3%	Pervious Pavers and Sand Filter
PROJECT	**88,678**	**80.3%**	**118,045**	**62.8%**	

Chamber System- Underdrained Soil Filter #1 Sizing		Units
Impervious Area	24,393	SF
Landscaped Area	15,887	SF
Storage Volume Required	2,562	CF
Surface Area Required	1,537	SF
Ponding Depth for Water Quality Volume	18	In
Bed Surface Area Provided	1,616	SF
Total Water Quality Storage Volume Provided	4,332	CF

Chamber System- Underdrained Soil Filter #1 Sizing		Units
Impervious Area	8,017	SF
Landscaped Area	7,218	SF
Storage Volume Required	909	CF
Surface Area Required	545	SF
Ponding Depth for Water Quality Volume	18	In
Bed Surface Area Provided	691	SF
Total Water Quality Storage Volume Provided	1,400	CF

Roof Drip Line Filter DF-1 Sizing Lot 4		Units
Impervious Area	18,803	SF
Landscaped Area	1,786	SF
Storage Volume Required	1,626	CF
Storage Volume Provided		
Length	446.0	FT
Width	4.0	FT
Depth	2.8	FT
Stone Porosity	0.4	
Length	0.0	FT
Width	0.0	FT
Depth	0.0	FT
Stone Porosity	0.4	
Total Water Quality Storage Volume Provided	1,962	CF

Roof Drip Line Filter DF-2 Sizing Lot 5		Units
Impervious Area	8,810	SF
Landscaped Area	896	SF
Storage Volume Required	764	CF
Storage Volume Provided		
Length	224.0	FT
Width	4.0	FT
Depth	2.5	FT
Stone Porosity	0.4	
Length	0.0	FT
Width	0.0	FT
Depth	0.0	FT
Stone Porosity	0.4	
Total Water Quality Storage Volume Provided	896	CF

Roof Drip Line Filter DF-3 Sizing Lot 6/7		Units
Impervious Area	3,214	SF
Landscaped Area	2,145	SF
Storage Volume Required	339	CF
Storage Volume Provided		
Length	160.0	FT
Width	3.0	FT
Depth	2.00	FT
Stone Porosity	0.4	
Length	0.0	FT
Width	0.0	FT
Depth	0.0	FT
Stone Porosity	0.0	
Total Water Quality Storage Volume Provided	384	CF

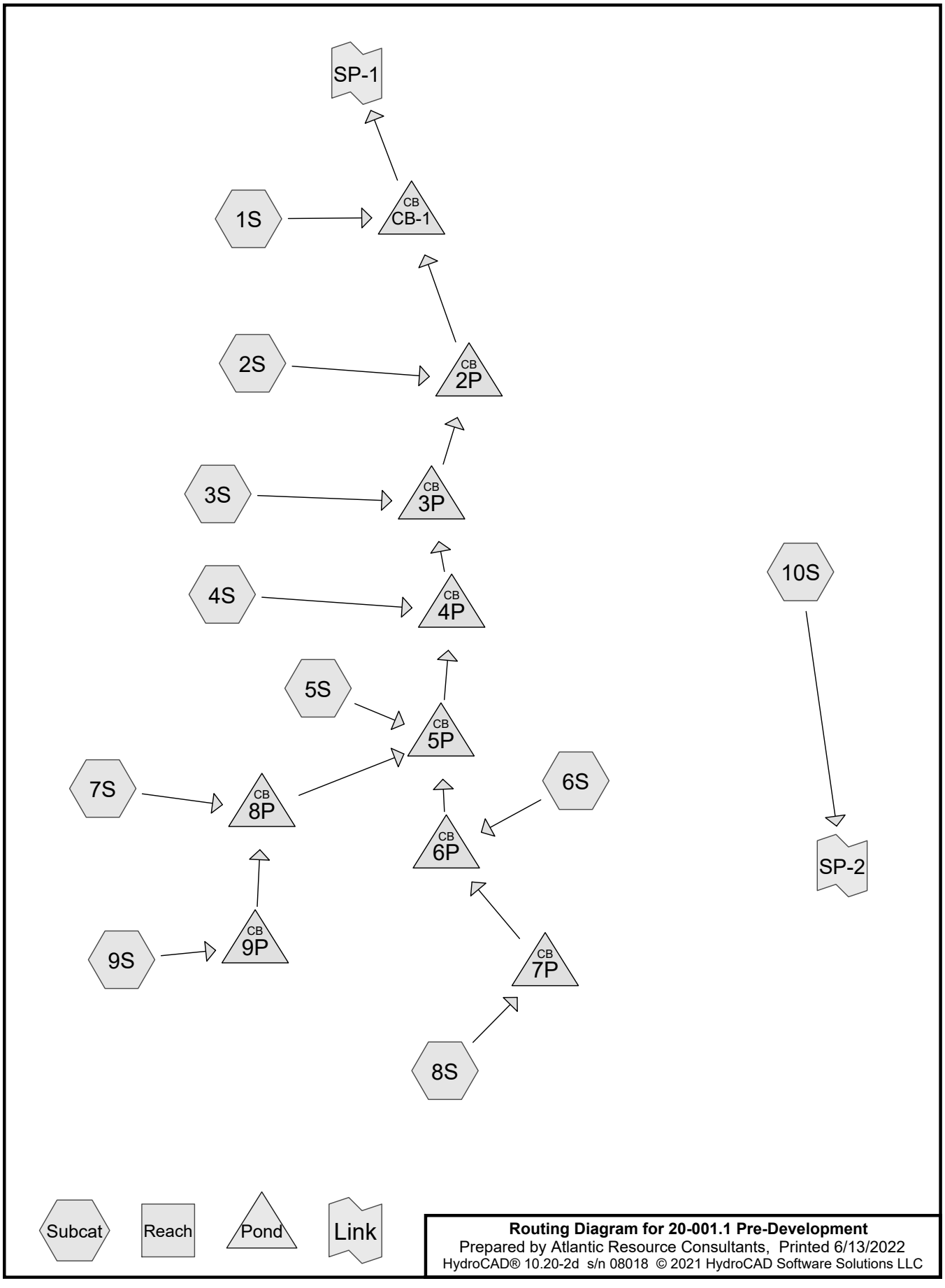
Pervious Pavers Area 1 Watershed 103S		Units
Impervious Area	17,688	SF
Landscaped Area	1,185	SF
Storage Volume Required Stormwater Reservoir	1,514	CF
<u>Storage Volume Provided</u>		
Area	3978.0	SF
Depth	1.00	FT
Stone Porosity	0.4	
Length	0.0	FT
Width	0.0	FT
Depth	0.0	FT
Stone Porosity	0.0	
Total Water Quality Storage Volume Provided	1,591	CF

Pervious Pavers Area 2		
Watershed 109S		**Units**
Impervious Area	2,326	SF
Landscaped Area	250	SF
Storage Volume Required	202	CF
Stormwater Reservoir		
Storage Volume Provided		
Area	1023.0	SF
Depth	1.00	FT
Stone Porosity	0.4	
Length	0.0	FT
Width	0.0	FT
Depth	0.0	FT
Stone Porosity	0.0	
Total Water Quality Storage Volume Provided	409	CF

Pervious Pavers Area 3		
Watershed 110S		**Units**
Impervious Area	4,907	SF
Landscaped Area	0	SF
Storage Volume Required	409	CF
Stormwater Reservoir		
<u>Storage Volume Provided</u>		
Area	3446.0	SF
Depth	1.00	FT
Stone Porosity	0.4	
Length	0.0	FT
Width	0.0	FT
Depth	0.0	FT
Stone Porosity	0.0	
Total Water Quality Storage Volume Provided	1,378	CF

ATTACHMENT B -HYDROCAD RUNOFF AND ROUTING CALCULATIONS

ATTACHMENT B (I) -PRE-DEVELOPMENT MODEL RESULTS



Routing Diagram for 20-001.1 Pre-Development
Prepared by Atlantic Resource Consultants, Printed 6/13/2022
HydroCAD® 10.20-2d s/n 08018 © 2021 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S:

Runoff = 1.36 cfs @ 12.08 hrs, Volume= 0.109 af, Depth= 2.87"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	10,475	98	Offsite impervious
*	9,292	98	Existing Impervious
	50	74	>75% Grass cover, Good, HSG C
	19,817	98	Weighted Average
	50		0.25% Pervious Area
	19,767		99.75% Impervious Area

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

Summary for Subcatchment 2S:

Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 2.87"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	784	98	Existing Impervious
*	853	98	Offsite Impervious
	1,637	98	Weighted Average
	1,637		100.00% Impervious Area

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

Summary for Subcatchment 3S:

Runoff = 1.18 cfs @ 12.09 hrs, Volume= 0.090 af, Depth= 2.65"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	13,779	98	Offsite Impervious
*	2,403	98	Existing Impervious
	1,593	74	>75% Grass cover, Good, HSG C
	17,775	96	Weighted Average
	1,593		8.96% Pervious Area
	16,182		91.04% Impervious Area

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

Summary for Subcatchment 4S:

Runoff = 0.71 cfs @ 12.09 hrs, Volume= 0.051 af, Depth= 2.08"
Routed to Pond 4P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	7,341	98	Offsite Impervious
*	1,670	98	Existing Impervious
	2,560	74	>75% Grass cover, Good, HSG C
	1,338	65	Brush, Good, HSG C
	12,909	90	Weighted Average
	3,898		30.20% Pervious Area
	9,011		69.80% Impervious Area

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

Summary for Subcatchment 5S:

Runoff = 0.58 cfs @ 12.08 hrs, Volume= 0.047 af, Depth= 2.87"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	5,773	98	Offsite Impervious
*	2,744	98	Existing Impervious
	8,517	98	Weighted Average
	8,517		100.00% Impervious Area

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

Summary for Subcatchment 6S:

Runoff = 0.27 cfs @ 12.08 hrs, Volume= 0.021 af, Depth= 2.87"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	3,268	98	Offsite Impervious
*	630	98	Existing Impervious
	3,898	98	Weighted Average
	3,898		100.00% Impervious Area

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

Summary for Subcatchment 7S:

Runoff = 0.71 cfs @ 12.09 hrs, Volume= 0.051 af, Depth= 2.08"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	9,239	98	Offsite Impervious
	2,635	74	>75% Grass cover, Good, HSG C
	1,040	65	Brush, Good, HSG C
	12,914	90	Weighted Average
	3,675		28.46% Pervious Area
	9,239		71.54% Impervious Area

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

Summary for Subcatchment 8S:

Runoff = 0.58 cfs @ 12.00 hrs, Volume= 0.035 af, Depth= 1.60"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	9,056	98	Offsite Impervious
	2,284	30	Brush, Good, HSG A
	11,340	84	Weighted Average
	2,284		20.14% Pervious Area
	9,056		79.86% Impervious Area

Summary for Subcatchment 9S:

Runoff = 0.00 cfs @ 13.80 hrs, Volume= 0.003 af, Depth= 0.09"
Routed to Pond 9P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	4,183	98	Offsite Impervious area
	11,072	30	Brush, Good, HSG A
	15,255	49	Weighted Average
	11,072		72.58% Pervious Area
	4,183		27.42% Impervious Area

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

Summary for Subcatchment 10S:

Runoff = 5.03 cfs @ 12.14 hrs, Volume= 0.420 af, Depth= 1.08"
Routed to Link SP-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	10,759	98	Offsite Impervious
*	68,433	98	Existing Impervious
	36,503	39	>75% Grass cover, Good, HSG A
	6,316	30	Brush, Good, HSG A
	49,266	70	Woods, Good, HSG C
	10,861	55	Woods, Good, HSG B
*	20,473	96	Existing Gravel surface, HSG D
	202,611	76	Weighted Average
	123,419		60.91% Pervious Area
	79,192		39.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	75	0.0200	1.28		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.10"
2.2	314	0.0210	2.33		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
0.4	35	0.3400	1.46		**Shallow Concentrated Flow, C-D** Forest w/Heavy Litter Kv= 2.5 fps
5.0	170	0.0520	0.57		**Shallow Concentrated Flow, D-E** Forest w/Heavy Litter Kv= 2.5 fps
0.7	80	0.0100	1.95	1.95	**Parabolic Channel, E-F** W=3.00' D=0.50' Area=1.0 sf Perim=3.2' n= 0.035 Earth, dense weeds
9.3	674	Total			

Summary for Pond 2P:

Inflow Area = 1.934 ac, 73.27% Impervious, Inflow Depth = 1.91" for 2-Yr Storm event
Inflow = 3.88 cfs @ 12.08 hrs, Volume= 0.307 af
Outflow = 3.88 cfs @ 12.08 hrs, Volume= 0.307 af, Atten= 0%, Lag= 0.0 min
Primary = 3.88 cfs @ 12.08 hrs, Volume= 0.307 af
Routed to Pond CB-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.84' @ 12.08 hrs
Flood Elev= 95.86'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.65'	**12.0" Round Culvert** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.65' / 90.00' S= 0.0103 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.84 cfs @ 12.08 hrs HW=92.80' (Free Discharge)
1=Culvert (Inlet Controls 3.84 cfs @ 4.89 fps)

Summary for Pond 3P:

Inflow Area = 1.896 ac, 72.74% Impervious, Inflow Depth = 1.89" for 2-Yr Storm event
Inflow = 3.77 cfs @ 12.08 hrs, Volume= 0.298 af
Outflow = 3.77 cfs @ 12.08 hrs, Volume= 0.298 af, Atten= 0%, Lag= 0.0 min
Primary = 3.77 cfs @ 12.08 hrs, Volume= 0.298 af
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.84' @ 12.08 hrs
Flood Elev= 95.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.75'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 90.29' / 90.75' S= -0.0092 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.73 cfs @ 12.08 hrs HW=92.81' (Free Discharge)
└**1=Culvert** (Inlet Controls 3.73 cfs @ 4.74 fps)

Summary for Pond 4P:

Inflow Area = 1.488 ac, 67.72% Impervious, Inflow Depth = 1.68" for 2-Yr Storm event
Inflow = 2.60 cfs @ 12.07 hrs, Volume= 0.208 af
Outflow = 2.60 cfs @ 12.07 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min
Primary = 2.60 cfs @ 12.07 hrs, Volume= 0.208 af
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.11' @ 12.07 hrs
Flood Elev= 96.14'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.85'	**12.0" Round Culvert** L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.85' / 90.29' S= 0.0073 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.57 cfs @ 12.07 hrs HW=92.09' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.57 cfs @ 3.27 fps)

Summary for Pond 5P:

Inflow Area = 1.192 ac, 67.20% Impervious, Inflow Depth = 1.58" for 2-Yr Storm event
Inflow = 1.91 cfs @ 12.07 hrs, Volume= 0.157 af
Outflow = 1.91 cfs @ 12.07 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min
Primary = 1.91 cfs @ 12.07 hrs, Volume= 0.157 af
Routed to Pond 4P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.09' @ 12.07 hrs
Flood Elev= 95.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.13'	**12.0" Round Culvert** L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.13' / 90.85' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	95.65'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.89 cfs @ 12.07 hrs HW=92.08' (Free Discharge)
├**1=Culvert** (Barrel Controls 1.89 cfs @ 3.14 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 6P:

Inflow Area = 0.350 ac, 85.01% Impervious, Inflow Depth = 1.92" for 2-Yr Storm event
Inflow = 0.76 cfs @ 12.01 hrs, Volume= 0.056 af
Outflow = 0.76 cfs @ 12.01 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min
Primary = 0.76 cfs @ 12.01 hrs, Volume= 0.056 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.33' @ 12.01 hrs
Flood Elev= 96.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.83'	**12.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.83' / 91.23' S= 0.0094 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.74 cfs @ 12.01 hrs HW=92.33' (Free Discharge)
1=Culvert (Inlet Controls 0.74 cfs @ 1.90 fps)

Summary for Pond 7P:

Inflow Area = 0.260 ac, 79.86% Impervious, Inflow Depth = 1.60" for 2-Yr Storm event
Inflow = 0.58 cfs @ 12.00 hrs, Volume= 0.035 af
Outflow = 0.58 cfs @ 12.00 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.58 cfs @ 12.00 hrs, Volume= 0.035 af
Routed to Pond 6P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.89' @ 12.00 hrs
Flood Elev= 97.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.43'	**12.0" Round Culvert** L= 105.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.43' / 92.03' S= 0.0038 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.57 cfs @ 12.00 hrs HW=92.89' (Free Discharge)
1=Culvert (Barrel Controls 0.57 cfs @ 2.37 fps)

Summary for Pond 8P:

Inflow Area = 0.647 ac, 47.65% Impervious, Inflow Depth = 1.00" for 2-Yr Storm event
Inflow = 0.71 cfs @ 12.09 hrs, Volume= 0.054 af
Outflow = 0.71 cfs @ 12.09 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 12.09 hrs, Volume= 0.054 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 92.65' @ 12.09 hrs
Flood Elev= 97.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.16'	**12.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.16' / 91.23' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.09 hrs HW=92.64' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.71 cfs @ 1.87 fps)

Summary for Pond 9P:

Inflow Area = 0.350 ac, 27.42% Impervious, Inflow Depth = 0.09" for 2-Yr Storm event
Inflow = 0.00 cfs @ 13.80 hrs, Volume= 0.003 af
Outflow = 0.00 cfs @ 13.80 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 13.80 hrs, Volume= 0.003 af
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.09' @ 13.80 hrs
Flood Elev= 96.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.06'	**12.0" Round Culvert** L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.06' / 92.16' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 13.80 hrs HW=93.09' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.00 cfs @ 0.50 fps)

Summary for Pond CB-1:

Inflow Area = 2.389 ac, 78.31% Impervious, Inflow Depth = 2.09" for 2-Yr Storm event
Inflow = 5.24 cfs @ 12.08 hrs, Volume= 0.416 af
Outflow = 5.24 cfs @ 12.08 hrs, Volume= 0.416 af, Atten= 0%, Lag= 0.0 min
Primary = 5.24 cfs @ 12.08 hrs, Volume= 0.416 af
Routed to Link SP-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 91.84' @ 12.08 hrs
Flood Elev= 95.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	89.95'	**15.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 89.95' / 89.50' S= 0.0129 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.18 cfs @ 12.08 hrs HW=91.81' (Free Discharge)
└**1=Culvert** (Inlet Controls 5.18 cfs @ 4.22 fps)

Summary for Link SP-1:

Inflow Area = 2.389 ac, 78.31% Impervious, Inflow Depth = 2.09" for 2-Yr Storm event
Inflow = 5.24 cfs @ 12.08 hrs, Volume= 0.416 af
Primary = 5.24 cfs @ 12.08 hrs, Volume= 0.416 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Link SP-2:

Inflow Area = 4.651 ac, 39.09% Impervious, Inflow Depth = 1.08" for 2-Yr Storm event
Inflow = 5.03 cfs @ 12.14 hrs, Volume= 0.420 af
Primary = 5.03 cfs @ 12.14 hrs, Volume= 0.420 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Subcatchment 1S:

Runoff = 2.03 cfs @ 12.08 hrs, Volume= 0.165 af, Depth= 4.36"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	10,475	98	Offsite impervious
*	9,292	98	Existing Impervious
	50	74	>75% Grass cover, Good, HSG C
	19,817	98	Weighted Average
	50		0.25% Pervious Area
	19,767		99.75% Impervious Area

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

Summary for Subcatchment 2S:

Runoff = 0.17 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 4.36"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	784	98	Existing Impervious
*	853	98	Offsite Impervious
	1,637	98	Weighted Average
	1,637		100.00% Impervious Area

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

Summary for Subcatchment 3S:

Runoff = 1.79 cfs @ 12.08 hrs, Volume= 0.141 af, Depth= 4.14"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	13,779	98	Offsite Impervious
*	2,403	98	Existing Impervious
	1,593	74	>75% Grass cover, Good, HSG C
	17,775	96	Weighted Average
	1,593		8.96% Pervious Area
	16,182		91.04% Impervious Area

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

Summary for Subcatchment 4S:

Runoff = 1.17 cfs @ 12.09 hrs, Volume= 0.086 af, Depth= 3.49"
Routed to Pond 4P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	7,341	98	Offsite Impervious
*	1,670	98	Existing Impervious
	2,560	74	>75% Grass cover, Good, HSG C
	1,338	65	Brush, Good, HSG C
	12,909	90	Weighted Average
	3,898		30.20% Pervious Area
	9,011		69.80% Impervious Area

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

Summary for Subcatchment 5S:

Runoff = 0.87 cfs @ 12.08 hrs, Volume= 0.071 af, Depth= 4.36"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	5,773	98	Offsite Impervious
*	2,744	98	Existing Impervious
	8,517	98	Weighted Average
	8,517		100.00% Impervious Area

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

Summary for Subcatchment 6S:

Runoff = 0.40 cfs @ 12.08 hrs, Volume= 0.033 af, Depth= 4.36"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	3,268	98	Offsite Impervious
*	630	98	Existing Impervious
	3,898	98	Weighted Average
	3,898		100.00% Impervious Area

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

Summary for Subcatchment 7S:

Runoff = 1.17 cfs @ 12.09 hrs, Volume= 0.086 af, Depth= 3.49"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	9,239	98	Offsite Impervious
	2,635	74	>75% Grass cover, Good, HSG C
	1,040	65	Brush, Good, HSG C
	12,914	90	Weighted Average
	3,675		28.46% Pervious Area
	9,239		71.54% Impervious Area

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

Summary for Subcatchment 8S:

Runoff = 1.05 cfs @ 12.00 hrs, Volume= 0.063 af, Depth= 2.91"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	9,056	98	Offsite Impervious
	2,284	30	Brush, Good, HSG A
	11,340	84	Weighted Average
	2,284		20.14% Pervious Area
	9,056		79.86% Impervious Area

Summary for Subcatchment 9S:

Runoff = 0.09 cfs @ 12.15 hrs, Volume= 0.014 af, Depth= 0.49"
Routed to Pond 9P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	4,183	98	Offsite Impervious area
	11,072	30	Brush, Good, HSG A
	15,255	49	Weighted Average
	11,072		72.58% Pervious Area
	4,183		27.42% Impervious Area

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

Summary for Subcatchment 10S:

Runoff = 10.68 cfs @ 12.13 hrs, Volume= 0.857 af, Depth= 2.21"
Routed to Link SP-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	10,759	98	Offsite Impervious
*	68,433	98	Existing Impervious
	36,503	39	>75% Grass cover, Good, HSG A
	6,316	30	Brush, Good, HSG A
	49,266	70	Woods, Good, HSG C
	10,861	55	Woods, Good, HSG B
*	20,473	96	Existing Gravel surface, HSG D
	202,611	76	Weighted Average
	123,419		60.91% Pervious Area
	79,192		39.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	75	0.0200	1.28		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.10"
2.2	314	0.0210	2.33		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
0.4	35	0.3400	1.46		**Shallow Concentrated Flow, C-D** Forest w/Heavy Litter Kv= 2.5 fps
5.0	170	0.0520	0.57		**Shallow Concentrated Flow, D-E** Forest w/Heavy Litter Kv= 2.5 fps
0.7	80	0.0100	1.95	1.95	**Parabolic Channel, E-F** W=3.00' D=0.50' Area=1.0 sf Perim=3.2' n= 0.035 Earth, dense weeds
9.3	674	Total			

Summary for Pond 2P:

Inflow Area = 1.934 ac, 73.27% Impervious, Inflow Depth = 3.15" for 10-Yr Storm event
Inflow = 6.20 cfs @ 12.08 hrs, Volume= 0.508 af
Outflow = 6.20 cfs @ 12.08 hrs, Volume= 0.508 af, Atten= 0%, Lag= 0.0 min
Primary = 6.20 cfs @ 12.08 hrs, Volume= 0.508 af
Routed to Pond CB-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 95.46' @ 12.08 hrs
Flood Elev= 95.86'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.65'	**12.0" Round Culvert** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.65' / 90.00' S= 0.0103 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=6.13 cfs @ 12.08 hrs HW=95.36' (Free Discharge)
1=Culvert (Inlet Controls 6.13 cfs @ 7.80 fps)

Summary for Pond 3P:

Inflow Area = 1.896 ac, 72.74% Impervious, Inflow Depth = 3.13" for 10-Yr Storm event
Inflow = 6.03 cfs @ 12.08 hrs, Volume= 0.494 af
Outflow = 6.03 cfs @ 12.08 hrs, Volume= 0.494 af, Atten= 0%, Lag= 0.0 min
Primary = 6.03 cfs @ 12.08 hrs, Volume= 0.494 af
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 95.33' @ 12.08 hrs
Flood Elev= 95.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.75'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 90.29' / 90.75' S= -0.0092 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.96 cfs @ 12.08 hrs HW=95.24' (Free Discharge)
└**1=Culvert** (Inlet Controls 5.96 cfs @ 7.59 fps)

Summary for Pond 4P:

Inflow Area = 1.488 ac, 67.72% Impervious, Inflow Depth = 2.85" for 10-Yr Storm event
Inflow = 4.26 cfs @ 12.07 hrs, Volume= 0.354 af
Outflow = 4.26 cfs @ 12.07 hrs, Volume= 0.354 af, Atten= 0%, Lag= 0.0 min
Primary = 4.26 cfs @ 12.07 hrs, Volume= 0.354 af
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.38' @ 12.07 hrs
Flood Elev= 96.14'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.85'	**12.0" Round Culvert** L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.85' / 90.29' S= 0.0073 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.21 cfs @ 12.07 hrs HW=93.34' (Free Discharge)
└**1=Culvert** (Inlet Controls 4.21 cfs @ 5.36 fps)

Summary for Pond 5P:

Inflow Area = 1.192 ac, 67.20% Impervious, Inflow Depth = 2.69" for 10-Yr Storm event
Inflow = 3.11 cfs @ 12.07 hrs, Volume= 0.267 af
Outflow = 3.11 cfs @ 12.07 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min
Primary = 3.11 cfs @ 12.07 hrs, Volume= 0.267 af
Routed to Pond 4P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.77' @ 12.07 hrs
Flood Elev= 95.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.13'	**12.0" Round Culvert** L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.13' / 90.85' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	95.65'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.08 cfs @ 12.07 hrs HW=92.75' (Free Discharge)
├**1=Culvert** (Barrel Controls 3.08 cfs @ 3.93 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 6P:

Inflow Area = 0.350 ac, 85.01% Impervious, Inflow Depth = 3.28" for 10-Yr Storm event
Inflow = 1.31 cfs @ 12.01 hrs, Volume= 0.096 af
Outflow = 1.31 cfs @ 12.01 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min
Primary = 1.31 cfs @ 12.01 hrs, Volume= 0.096 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.53' @ 12.01 hrs
Flood Elev= 96.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.83'	**12.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.83' / 91.23' S= 0.0094 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.28 cfs @ 12.01 hrs HW=92.52' (Free Discharge)
1=Culvert (Inlet Controls 1.28 cfs @ 2.23 fps)

Summary for Pond 7P:

Inflow Area = 0.260 ac, 79.86% Impervious, Inflow Depth = 2.91" for 10-Yr Storm event
Inflow = 1.05 cfs @ 12.00 hrs, Volume= 0.063 af
Outflow = 1.05 cfs @ 12.00 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.00 hrs, Volume= 0.063 af
Routed to Pond 6P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.08' @ 12.00 hrs
Flood Elev= 97.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.43'	**12.0" Round Culvert** L= 105.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.43' / 92.03' S= 0.0038 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.04 cfs @ 12.00 hrs HW=93.08' (Free Discharge)
1=Culvert (Barrel Controls 1.04 cfs @ 2.75 fps)

Summary for Pond 8P:

Inflow Area = 0.647 ac, 47.65% Impervious, Inflow Depth = 1.87" for 10-Yr Storm event
Inflow = 1.24 cfs @ 12.09 hrs, Volume= 0.101 af
Outflow = 1.24 cfs @ 12.09 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.24 cfs @ 12.09 hrs, Volume= 0.101 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 92.83' @ 12.09 hrs
Flood Elev= 97.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.16'	**12.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.16' / 91.23' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.24 cfs @ 12.09 hrs HW=92.83' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.24 cfs @ 2.20 fps)

Summary for Pond 9P:

Inflow Area = 0.350 ac, 27.42% Impervious, Inflow Depth = 0.49" for 10-Yr Storm event
Inflow = 0.09 cfs @ 12.15 hrs, Volume= 0.014 af
Outflow = 0.09 cfs @ 12.15 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 12.15 hrs, Volume= 0.014 af
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.22' @ 12.15 hrs
Flood Elev= 96.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.06'	**12.0" Round Culvert** L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.06' / 92.16' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 12.15 hrs HW=93.22' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.09 cfs @ 1.09 fps)

Summary for Pond CB-1:

Inflow Area = 2.389 ac, 78.31% Impervious, Inflow Depth = 3.38" for 10-Yr Storm event
Inflow = 8.23 cfs @ 12.08 hrs, Volume= 0.673 af
Outflow = 8.23 cfs @ 12.08 hrs, Volume= 0.673 af, Atten= 0%, Lag= 0.0 min
Primary = 8.23 cfs @ 12.08 hrs, Volume= 0.673 af
Routed to Link SP-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.68' @ 12.08 hrs
Flood Elev= 95.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	89.95'	**15.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 89.95' / 89.50' S= 0.0129 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=8.14 cfs @ 12.08 hrs HW=93.62' (Free Discharge)
↑**1=Culvert** (Inlet Controls 8.14 cfs @ 6.63 fps)

Summary for Link SP-1:

Inflow Area = 2.389 ac, 78.31% Impervious, Inflow Depth = 3.38" for 10-Yr Storm event
Inflow = 8.23 cfs @ 12.08 hrs, Volume= 0.673 af
Primary = 8.23 cfs @ 12.08 hrs, Volume= 0.673 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Link SP-2:

Inflow Area = 4.651 ac, 39.09% Impervious, Inflow Depth = 2.21" for 10-Yr Storm event
Inflow = 10.68 cfs @ 12.13 hrs, Volume= 0.857 af
Primary = 10.68 cfs @ 12.13 hrs, Volume= 0.857 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Subcatchment 1S:

Runoff = 2.57 cfs @ 12.08 hrs, Volume= 0.211 af, Depth= 5.56"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	10,475	98	Offsite impervious
*	9,292	98	Existing Impervious
	50	74	>75% Grass cover, Good, HSG C
	19,817	98	Weighted Average
	50		0.25% Pervious Area
	19,767		99.75% Impervious Area

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

Summary for Subcatchment 2S:

Runoff = 0.21 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 5.56"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	784	98	Existing Impervious
*	853	98	Offsite Impervious
	1,637	98	Weighted Average
	1,637		100.00% Impervious Area

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

Summary for Subcatchment 3S:

Runoff = 2.28 cfs @ 12.08 hrs, Volume= 0.181 af, Depth= 5.33"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	13,779	98	Offsite Impervious
*	2,403	98	Existing Impervious
	1,593	74	>75% Grass cover, Good, HSG C
	17,775	96	Weighted Average
	1,593		8.96% Pervious Area
	16,182		91.04% Impervious Area

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

Summary for Subcatchment 4S:

Runoff = 1.53 cfs @ 12.09 hrs, Volume= 0.115 af, Depth= 4.65"
Routed to Pond 4P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	7,341	98	Offsite Impervious
*	1,670	98	Existing Impervious
	2,560	74	>75% Grass cover, Good, HSG C
	1,338	65	Brush, Good, HSG C
	12,909	90	Weighted Average
	3,898		30.20% Pervious Area
	9,011		69.80% Impervious Area

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

Summary for Subcatchment 5S:

Runoff = 1.10 cfs @ 12.08 hrs, Volume= 0.091 af, Depth= 5.56"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	5,773	98	Offsite Impervious
*	2,744	98	Existing Impervious
	8,517	98	Weighted Average
	8,517		100.00% Impervious Area

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

Summary for Subcatchment 6S:

Runoff = 0.51 cfs @ 12.08 hrs, Volume= 0.041 af, Depth= 5.56"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	3,268	98	Offsite Impervious
*	630	98	Existing Impervious
	3,898	98	Weighted Average
	3,898		100.00% Impervious Area

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

Summary for Subcatchment 7S:

Runoff = 1.54 cfs @ 12.09 hrs, Volume= 0.115 af, Depth= 4.65"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	9,239	98	Offsite Impervious
	2,635	74	>75% Grass cover, Good, HSG C
	1,040	65	Brush, Good, HSG C
	12,914	90	Weighted Average
	3,675		28.46% Pervious Area
	9,239		71.54% Impervious Area

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

Summary for Subcatchment 8S:

Runoff = 1.43 cfs @ 12.00 hrs, Volume= 0.087 af, Depth= 4.01"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	9,056	98	Offsite Impervious
	2,284	30	Brush, Good, HSG A
	11,340	84	Weighted Average
	2,284		20.14% Pervious Area
	9,056		79.86% Impervious Area

Summary for Subcatchment 9S:

Runoff = 0.29 cfs @ 12.11 hrs, Volume= 0.029 af, Depth= 0.98"
Routed to Pond 9P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	4,183	98	Offsite Impervious area
	11,072	30	Brush, Good, HSG A
	15,255	49	Weighted Average
	11,072		72.58% Pervious Area
	4,183		27.42% Impervious Area

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

Summary for Subcatchment 10S:

Runoff = 15.59 cfs @ 12.13 hrs, Volume= 1.244 af, Depth= 3.21"
Routed to Link SP-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	10,759	98	Offsite Impervious
*	68,433	98	Existing Impervious
	36,503	39	>75% Grass cover, Good, HSG A
	6,316	30	Brush, Good, HSG A
	49,266	70	Woods, Good, HSG C
	10,861	55	Woods, Good, HSG B
*	20,473	96	Existing Gravel surface, HSG D
	202,611	76	Weighted Average
	123,419		60.91% Pervious Area
	79,192		39.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	75	0.0200	1.28		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.10"
2.2	314	0.0210	2.33		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
0.4	35	0.3400	1.46		**Shallow Concentrated Flow, C-D** Forest w/Heavy Litter Kv= 2.5 fps
5.0	170	0.0520	0.57		**Shallow Concentrated Flow, D-E** Forest w/Heavy Litter Kv= 2.5 fps
0.7	80	0.0100	1.95	1.95	**Parabolic Channel, E-F** W=3.00' D=0.50' Area=1.0 sf Perim=3.2' n= 0.035 Earth, dense weeds
9.3	674	Total			

Summary for Pond 2P:

Inflow Area = 1.934 ac, 73.27% Impervious, Inflow Depth = 4.19" for 25-Yr Storm event
Inflow = 8.21 cfs @ 12.08 hrs, Volume= 0.676 af
Outflow = 8.21 cfs @ 12.08 hrs, Volume= 0.676 af, Atten= 0%, Lag= 0.0 min
Primary = 8.21 cfs @ 12.08 hrs, Volume= 0.676 af
Routed to Pond CB-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 98.70' @ 12.08 hrs
Flood Elev= 95.86'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.65'	**12.0" Round Culvert** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.65' / 90.00' S= 0.0103 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=8.11 cfs @ 12.08 hrs HW=98.53' (Free Discharge)
1=Culvert (Inlet Controls 8.11 cfs @ 10.33 fps)

Summary for Pond 3P:

Inflow Area = 1.896 ac, 72.74% Impervious, Inflow Depth = 4.17" for 25-Yr Storm event
Inflow = 8.00 cfs @ 12.08 hrs, Volume= 0.659 af
Outflow = 8.00 cfs @ 12.08 hrs, Volume= 0.659 af, Atten= 0%, Lag= 0.0 min
Primary = 8.00 cfs @ 12.08 hrs, Volume= 0.659 af
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 98.41' @ 12.08 hrs
Flood Elev= 95.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.75'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 90.29' / 90.75' S= -0.0092 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=7.90 cfs @ 12.08 hrs HW=98.26' (Free Discharge)
└**1=Culvert** (Inlet Controls 7.90 cfs @ 10.06 fps)

Summary for Pond 4P:

Inflow Area = 1.488 ac, 67.72% Impervious, Inflow Depth = 3.85" for 25-Yr Storm event
Inflow = 5.74 cfs @ 12.07 hrs, Volume= 0.477 af
Outflow = 5.74 cfs @ 12.07 hrs, Volume= 0.477 af, Atten= 0%, Lag= 0.0 min
Primary = 5.74 cfs @ 12.07 hrs, Volume= 0.477 af
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 95.04' @ 12.07 hrs
Flood Elev= 96.14'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.85'	**12.0" Round Culvert** L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.85' / 90.29' S= 0.0073 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.67 cfs @ 12.07 hrs HW=94.96' (Free Discharge)
└**1=Culvert** (Inlet Controls 5.67 cfs @ 7.22 fps)

Summary for Pond 5P:

Inflow Area = 1.192 ac, 67.20% Impervious, Inflow Depth = 3.65" for 25-Yr Storm event
Inflow = 4.23 cfs @ 12.07 hrs, Volume= 0.363 af
Outflow = 4.23 cfs @ 12.07 hrs, Volume= 0.363 af, Atten= 0%, Lag= 0.0 min
Primary = 4.23 cfs @ 12.07 hrs, Volume= 0.363 af
Routed to Pond 4P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.64' @ 12.07 hrs
Flood Elev= 95.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.13'	**12.0" Round Culvert** L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.13' / 90.85' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	95.65'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.20 cfs @ 12.07 hrs HW=93.60' (Free Discharge)
├**1=Culvert** (Inlet Controls 4.20 cfs @ 5.34 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 6P:

Inflow Area = 0.350 ac, 85.01% Impervious, Inflow Depth = 4.41" for 25-Yr Storm event
Inflow = 1.76 cfs @ 12.01 hrs, Volume= 0.128 af
Outflow = 1.76 cfs @ 12.01 hrs, Volume= 0.128 af, Atten= 0%, Lag= 0.0 min
Primary = 1.76 cfs @ 12.01 hrs, Volume= 0.128 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.68' @ 12.01 hrs
Flood Elev= 96.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.83'	**12.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.83' / 91.23' S= 0.0094 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.73 cfs @ 12.01 hrs HW=92.67' (Free Discharge)
1=Culvert (Inlet Controls 1.73 cfs @ 2.46 fps)

Summary for Pond 7P:

Inflow Area = 0.260 ac, 79.86% Impervious, Inflow Depth = 4.01" for 25-Yr Storm event
Inflow = 1.43 cfs @ 12.00 hrs, Volume= 0.087 af
Outflow = 1.43 cfs @ 12.00 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min
Primary = 1.43 cfs @ 12.00 hrs, Volume= 0.087 af
Routed to Pond 6P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.22' @ 12.00 hrs
Flood Elev= 97.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.43'	**12.0" Round Culvert** L= 105.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.43' / 92.03' S= 0.0038 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.42 cfs @ 12.00 hrs HW=93.21' (Free Discharge)
1=Culvert (Barrel Controls 1.42 cfs @ 2.96 fps)

Summary for Pond 8P:

Inflow Area = 0.647 ac, 47.65% Impervious, Inflow Depth = 2.66" for 25-Yr Storm event
Inflow = 1.81 cfs @ 12.09 hrs, Volume= 0.143 af
Outflow = 1.81 cfs @ 12.09 hrs, Volume= 0.143 af, Atten= 0%, Lag= 0.0 min
Primary = 1.81 cfs @ 12.09 hrs, Volume= 0.143 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 93.03' @ 12.09 hrs
Flood Elev= 97.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.16'	**12.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.16' / 91.23' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.81 cfs @ 12.09 hrs HW=93.03' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.81 cfs @ 2.50 fps)

Summary for Pond 9P:

Inflow Area = 0.350 ac, 27.42% Impervious, Inflow Depth = 0.98" for 25-Yr Storm event
Inflow = 0.29 cfs @ 12.11 hrs, Volume= 0.029 af
Outflow = 0.29 cfs @ 12.11 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.29 cfs @ 12.11 hrs, Volume= 0.029 af
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.36' @ 12.11 hrs
Flood Elev= 96.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.06'	**12.0" Round Culvert** L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.06' / 92.16' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.29 cfs @ 12.11 hrs HW=93.36' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.29 cfs @ 1.47 fps)

Summary for Pond CB-1:

Inflow Area = 2.389 ac, 78.31% Impervious, Inflow Depth = 4.46" for 25-Yr Storm event
Inflow = 10.77 cfs @ 12.08 hrs, Volume= 0.887 af
Outflow = 10.77 cfs @ 12.08 hrs, Volume= 0.887 af, Atten= 0%, Lag= 0.0 min
Primary = 10.77 cfs @ 12.08 hrs, Volume= 0.887 af
Routed to Link SP-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 95.90' @ 12.08 hrs
Flood Elev= 95.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	89.95'	**15.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 89.95' / 89.50' S= 0.0129 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=10.65 cfs @ 12.08 hrs HW=95.79' (Free Discharge)
1=Culvert (Inlet Controls 10.65 cfs @ 8.68 fps)

Summary for Link SP-1:

Inflow Area = 2.389 ac, 78.31% Impervious, Inflow Depth = 4.46" for 25-Yr Storm event
Inflow = 10.77 cfs @ 12.08 hrs, Volume= 0.887 af
Primary = 10.77 cfs @ 12.08 hrs, Volume= 0.887 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Link SP-2:

Inflow Area = 4.651 ac, 39.09% Impervious, Inflow Depth = 3.21" for 25-Yr Storm event
Inflow = 15.59 cfs @ 12.13 hrs, Volume= 1.244 af
Primary = 15.59 cfs @ 12.13 hrs, Volume= 1.244 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Subcatchment 1S:

Runoff = 3.60 cfs @ 12.08 hrs, Volume= 0.298 af, Depth= 7.86"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	10,475	98	Offsite impervious
*	9,292	98	Existing Impervious
	50	74	>75% Grass cover, Good, HSG C
	19,817	98	Weighted Average
	50		0.25% Pervious Area
	19,767		99.75% Impervious Area

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

Summary for Subcatchment 2S:

Runoff = 0.30 cfs @ 12.08 hrs, Volume= 0.025 af, Depth= 7.86"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	784	98	Existing Impervious
*	853	98	Offsite Impervious
	1,637	98	Weighted Average
	1,637		100.00% Impervious Area

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

Summary for Subcatchment 3S:

Runoff = 3.20 cfs @ 12.08 hrs, Volume= 0.259 af, Depth= 7.62"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	13,779	98	Offsite Impervious
*	2,403	98	Existing Impervious
	1,593	74	>75% Grass cover, Good, HSG C
	17,775	96	Weighted Average
	1,593		8.96% Pervious Area
	16,182		91.04% Impervious Area

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

Summary for Subcatchment 4S:

Runoff = 2.23 cfs @ 12.09 hrs, Volume= 0.171 af, Depth= 6.90"
Routed to Pond 4P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	7,341	98	Offsite Impervious
*	1,670	98	Existing Impervious
	2,560	74	>75% Grass cover, Good, HSG C
	1,338	65	Brush, Good, HSG C
	12,909	90	Weighted Average
	3,898		30.20% Pervious Area
	9,011		69.80% Impervious Area

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

Summary for Subcatchment 5S:

Runoff = 1.55 cfs @ 12.08 hrs, Volume= 0.128 af, Depth= 7.86"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	5,773	98	Offsite Impervious
*	2,744	98	Existing Impervious
	8,517	98	Weighted Average
	8,517		100.00% Impervious Area

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

Summary for Subcatchment 6S:

Runoff = 0.71 cfs @ 12.08 hrs, Volume= 0.059 af, Depth= 7.86"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	3,268	98	Offsite Impervious
*	630	98	Existing Impervious
	3,898	98	Weighted Average
	3,898		100.00% Impervious Area

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

Summary for Subcatchment 7S:

Runoff = 2.23 cfs @ 12.09 hrs, Volume= 0.171 af, Depth= 6.90"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	9,239	98	Offsite Impervious
	2,635	74	>75% Grass cover, Good, HSG C
	1,040	65	Brush, Good, HSG C
	12,914	90	Weighted Average
	3,675		28.46% Pervious Area
	9,239		71.54% Impervious Area

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

Summary for Subcatchment 8S:

Runoff = 2.17 cfs @ 12.00 hrs, Volume= 0.134 af, Depth= 6.19"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	9,056	98	Offsite Impervious
	2,284	30	Brush, Good, HSG A
	11,340	84	Weighted Average
	2,284		20.14% Pervious Area
	9,056		79.86% Impervious Area

Summary for Subcatchment 9S:

Runoff = 0.82 cfs @ 12.10 hrs, Volume= 0.064 af, Depth= 2.21"
Routed to Pond 9P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	4,183	98	Offsite Impervious area
	11,072	30	Brush, Good, HSG A
	15,255	49	Weighted Average
	11,072		72.58% Pervious Area
	4,183		27.42% Impervious Area

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

Summary for Subcatchment 10S:

Runoff = 25.36 cfs @ 12.13 hrs, Volume= 2.035 af, Depth= 5.25"
Routed to Link SP-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	10,759	98	Offsite Impervious
*	68,433	98	Existing Impervious
	36,503	39	>75% Grass cover, Good, HSG A
	6,316	30	Brush, Good, HSG A
	49,266	70	Woods, Good, HSG C
	10,861	55	Woods, Good, HSG B
*	20,473	96	Existing Gravel surface, HSG D
	202,611	76	Weighted Average
	123,419		60.91% Pervious Area
	79,192		39.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	75	0.0200	1.28		**Sheet Flow, A-B** Smooth surfaces n= 0.011 P2= 3.10"
2.2	314	0.0210	2.33		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
0.4	35	0.3400	1.46		**Shallow Concentrated Flow, C-D** Forest w/Heavy Litter Kv= 2.5 fps
5.0	170	0.0520	0.57		**Shallow Concentrated Flow, D-E** Forest w/Heavy Litter Kv= 2.5 fps
0.7	80	0.0100	1.95	1.95	**Parabolic Channel, E-F** W=3.00' D=0.50' Area=1.0 sf Perim=3.2' n= 0.035 Earth, dense weeds
9.3	674	Total			

Summary for Pond 2P:

Inflow Area = 1.934 ac, 73.27% Impervious, Inflow Depth = 6.27" for 100-Yr Storm event
Inflow = 12.16 cfs @ 12.08 hrs, Volume= 1.010 af
Outflow = 12.16 cfs @ 12.08 hrs, Volume= 1.010 af, Atten= 0%, Lag= 0.0 min
Primary = 12.16 cfs @ 12.08 hrs, Volume= 1.010 af
Routed to Pond CB-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 107.72' @ 12.08 hrs
Flood Elev= 95.86'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.65'	**12.0" Round Culvert** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.65' / 90.00' S= 0.0103 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=12.02 cfs @ 12.08 hrs HW=107.36' (Free Discharge)
1=Culvert (Inlet Controls 12.02 cfs @ 15.31 fps)

Summary for Pond 3P:

Inflow Area = 1.896 ac, 72.74% Impervious, Inflow Depth = 6.24" for 100-Yr Storm event
Inflow = 11.86 cfs @ 12.08 hrs, Volume= 0.986 af
Outflow = 11.86 cfs @ 12.08 hrs, Volume= 0.986 af, Atten= 0%, Lag= 0.0 min
Primary = 11.86 cfs @ 12.08 hrs, Volume= 0.986 af
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 107.03' @ 12.08 hrs
Flood Elev= 95.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.75'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 90.29' / 90.75' S= -0.0092 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=11.73 cfs @ 12.08 hrs HW=106.68' (Free Discharge)
└**1=Culvert** (Inlet Controls 11.73 cfs @ 14.93 fps)

Summary for Pond 4P:

Inflow Area = 1.488 ac, 67.72% Impervious, Inflow Depth = 5.86" for 100-Yr Storm event
Inflow = 8.70 cfs @ 12.07 hrs, Volume= 0.726 af
Outflow = 8.70 cfs @ 12.07 hrs, Volume= 0.726 af, Atten= 0%, Lag= 0.0 min
Primary = 8.70 cfs @ 12.07 hrs, Volume= 0.726 af
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 99.82' @ 12.07 hrs
Flood Elev= 96.14'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.85'	**12.0" Round Culvert** L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.85' / 90.29' S= 0.0073 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=8.59 cfs @ 12.07 hrs HW=99.63' (Free Discharge)
└**1=Culvert** (Inlet Controls 8.59 cfs @ 10.94 fps)

Summary for Pond 5P:

Inflow Area = 1.192 ac, 67.20% Impervious, Inflow Depth = 5.60" for 100-Yr Storm event
Inflow = 6.50 cfs @ 12.07 hrs, Volume= 0.556 af
Outflow = 6.50 cfs @ 12.07 hrs, Volume= 0.556 af, Atten= 0%, Lag= 0.0 min
Primary = 6.50 cfs @ 12.07 hrs, Volume= 0.556 af
Routed to Pond 4P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 95.72' @ 12.07 hrs
Flood Elev= 95.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.13'	**12.0" Round Culvert** L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.13' / 90.85' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	95.65'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.43 cfs @ 12.07 hrs HW=95.71' (Free Discharge)
├**1=Culvert** (Inlet Controls 6.03 cfs @ 7.68 fps)
└**2=Orifice/Grate** (Weir Controls 0.40 cfs @ 0.81 fps)

Summary for Pond 6P:

Inflow Area = 0.350 ac, 85.01% Impervious, Inflow Depth = 6.62" for 100-Yr Storm event
Inflow = 2.63 cfs @ 12.01 hrs, Volume= 0.193 af
Outflow = 2.63 cfs @ 12.01 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min
Primary = 2.63 cfs @ 12.01 hrs, Volume= 0.193 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.10' @ 12.01 hrs
Flood Elev= 96.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.83'	**12.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.83' / 91.23' S= 0.0094 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.58 cfs @ 12.01 hrs HW=93.08' (Free Discharge)
1=Culvert (Inlet Controls 2.58 cfs @ 3.29 fps)

Summary for Pond 7P:

Inflow Area = 0.260 ac, 79.86% Impervious, Inflow Depth = 6.19" for 100-Yr Storm event
Inflow = 2.17 cfs @ 12.00 hrs, Volume= 0.134 af
Outflow = 2.17 cfs @ 12.00 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 2.17 cfs @ 12.00 hrs, Volume= 0.134 af
Routed to Pond 6P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.49' @ 12.00 hrs
Flood Elev= 97.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.43'	**12.0" Round Culvert** L= 105.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.43' / 92.03' S= 0.0038 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.16 cfs @ 12.00 hrs HW=93.48' (Free Discharge)
1=Culvert (Barrel Controls 2.16 cfs @ 3.24 fps)

Summary for Pond 8P:

Inflow Area = 0.647 ac, 47.65% Impervious, Inflow Depth = 4.36" for 100-Yr Storm event
Inflow = 3.04 cfs @ 12.09 hrs, Volume= 0.235 af
Outflow = 3.04 cfs @ 12.09 hrs, Volume= 0.235 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.09 hrs, Volume= 0.235 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 93.70' @ 12.09 hrs
Flood Elev= 97.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.16'	**12.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.16' / 91.23' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.03 cfs @ 12.09 hrs HW=93.69' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 3.03 cfs @ 3.86 fps)

Summary for Pond 9P:

Inflow Area = 0.350 ac, 27.42% Impervious, Inflow Depth = 2.21" for 100-Yr Storm event
Inflow = 0.82 cfs @ 12.10 hrs, Volume= 0.064 af
Outflow = 0.82 cfs @ 12.10 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 12.10 hrs, Volume= 0.064 af
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.59' @ 12.10 hrs
Flood Elev= 96.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.06'	**12.0" Round Culvert** L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.06' / 92.16' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.81 cfs @ 12.10 hrs HW=93.58' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.81 cfs @ 1.94 fps)

Summary for Pond CB-1:

Inflow Area = 2.389 ac, 78.31% Impervious, Inflow Depth = 6.57" for 100-Yr Storm event
Inflow = 15.75 cfs @ 12.08 hrs, Volume= 1.308 af
Outflow = 15.75 cfs @ 12.08 hrs, Volume= 1.308 af, Atten= 0%, Lag= 0.0 min
Primary = 15.75 cfs @ 12.08 hrs, Volume= 1.308 af
Routed to Link SP-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 101.96' @ 12.08 hrs
Flood Elev= 95.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	89.95'	**15.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 89.95' / 89.50' S= 0.0129 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=15.57 cfs @ 12.08 hrs HW=101.71' (Free Discharge)
└**1=Culvert** (Inlet Controls 15.57 cfs @ 12.68 fps)

Summary for Link SP-1:

Inflow Area = 2.389 ac, 78.31% Impervious, Inflow Depth = 6.57" for 100-Yr Storm event
Inflow = 15.75 cfs @ 12.08 hrs, Volume= 1.308 af
Primary = 15.75 cfs @ 12.08 hrs, Volume= 1.308 af, Atten= 0%, Lag= 0.0 min

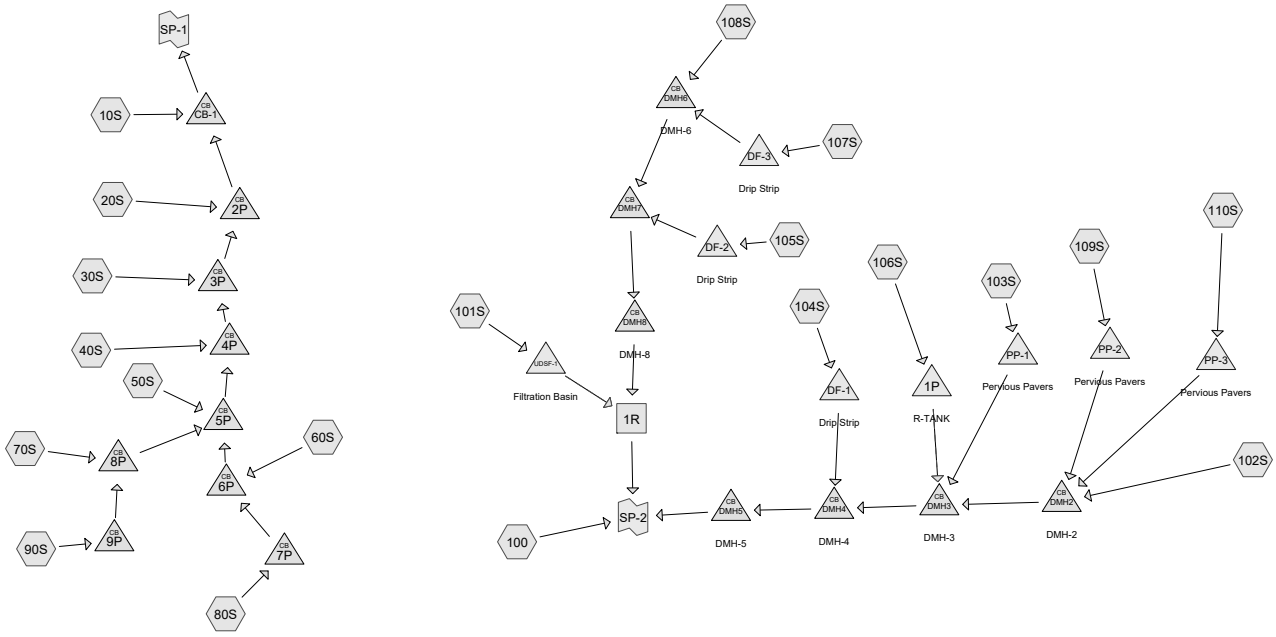
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Link SP-2:

Inflow Area = 4.651 ac, 39.09% Impervious, Inflow Depth = 5.25" for 100-Yr Storm event
Inflow = 25.36 cfs @ 12.13 hrs, Volume= 2.035 af
Primary = 25.36 cfs @ 12.13 hrs, Volume= 2.035 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

ATTACHMENT B (II) -POST-DEVELOPMENT MODEL RESULTS



Subcat Reach Pond Link

Routing Diagram for 20-001.1 Post-Development
Prepared by Atlantic Resource Consultants, Printed 6/13/2022

Summary for Subcatchment 10S:

Runoff = 1.36 cfs @ 12.08 hrs, Volume= 0.109 af, Depth= 2.87"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	10,475	98	Offsite impervious
*	9,057	98	Existing Impervious
	285	74	>75% Grass cover, Good, HSG C
	19,817	98	Weighted Average
	285		1.44% Pervious Area
	19,532		98.56% Impervious Area

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

Summary for Subcatchment 20S:

Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 2.87"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	784	98	Existing Impervious
*	853	98	Offsite Impervious
	1,637	98	Weighted Average
	1,637		100.00% Impervious Area

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

Summary for Subcatchment 30S:

Runoff = 1.18 cfs @ 12.09 hrs, Volume= 0.090 af, Depth= 2.65"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	13,779	98	Offsite Impervious
*	2,496	98	Impervious
*	746	74	Offsite Landscaped
	754	74	>75% Grass cover, Good, HSG C
	17,775	96	Weighted Average
	1,500		8.44% Pervious Area
	16,275		91.56% Impervious Area

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

Summary for Subcatchment 40S:

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.044 af, Depth= 2.08"
Routed to Pond 4P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	7,341	98	Offsite Impervious
*	806	98	Existing Impervious
	1,646	74	>75% Grass cover, Good, HSG C
	1,338	65	Brush, Good, HSG C
	11,131	90	Weighted Average
	2,984		26.81% Pervious Area
	8,147		73.19% Impervious Area

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

Summary for Subcatchment 50S:

Runoff = 0.52 cfs @ 12.08 hrs, Volume= 0.041 af, Depth= 2.87"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	5,773	98	Offsite Impervious
*	1,775	98	Existing Impervious
	7,548	98	Weighted Average
	7,548		100.00% Impervious Area

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

Summary for Subcatchment 60S:

Runoff = 0.41 cfs @ 12.08 hrs, Volume= 0.033 af, Depth= 2.87"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	3,268	98	Offsite Impervious
*	2,700	98	Existing Impervious
	5,968	98	Weighted Average
	5,968		100.00% Impervious Area

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

Summary for Subcatchment 70S:

Runoff = 0.71 cfs @ 12.09 hrs, Volume= 0.051 af, Depth= 2.08"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	9,239	98	Offsite Impervious
	2,635	74	>75% Grass cover, Good, HSG C
	1,040	65	Brush, Good, HSG C
	12,914	90	Weighted Average
	3,675		28.46% Pervious Area
	9,239		71.54% Impervious Area

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

Summary for Subcatchment 80S:

Runoff = 0.58 cfs @ 12.00 hrs, Volume= 0.035 af, Depth= 1.60"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	9,056	98	Offsite Impervious
	2,284	30	Brush, Good, HSG A
	11,340	84	Weighted Average
	2,284		20.14% Pervious Area
	9,056		79.86% Impervious Area

Summary for Subcatchment 90S:

Runoff = 0.00 cfs @ 13.80 hrs, Volume= 0.003 af, Depth= 0.09"
Routed to Pond 9P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	4,183	98	Offsite Impervious area
	11,072	30	Brush, Good, HSG A
	15,255	49	Weighted Average
	11,072		72.58% Pervious Area
	4,183		27.42% Impervious Area

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

Summary for Subcatchment 100:

Runoff = 1.46 cfs @ 12.29 hrs, Volume= 0.159 af, Depth= 1.20"
Routed to Link SP-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
	41,443	74	>75% Grass cover, Good, HSG C
*	16,896	74	OFSITE AREA TO BE UPDATED
*	10,765	98	Offsite Impervious
	69,104	78	Weighted Average
	58,339		84.42% Pervious Area
	10,765		15.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.3	75	0.0930	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.10"
3.2	110	0.0540	0.58		**Shallow Concentrated Flow, B-C** Forest w/Heavy Litter Kv= 2.5 fps
0.6	70	0.0100	1.95	1.95	**Parabolic Channel, C-D** W=3.00' D=0.50' Area=1.0 sf Perim=3.2' n= 0.035
20.1	255	Total			

Summary for Subcatchment 101S:

Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 1.53"
Routed to Pond UDSF-1 : Filtration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
8,017	98	Paved parking, HSG D
3,766	70	Woods, Good, HSG C
7,218	74	>75% Grass cover, Good, HSG C
19,001	83	Weighted Average
10,984		57.81% Pervious Area
8,017		42.19% Impervious Area

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

Summary for Subcatchment 102S:

Runoff = 0.41 cfs @ 12.09 hrs, Volume= 0.029 af, Depth= 1.91"
Routed to Pond DMH2 : DMH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
4,611	98	Roofs, HSG D
3,387	74	>75% Grass cover, Good, HSG C
7,998	88	Weighted Average
3,387		42.35% Pervious Area
4,611		57.65% Impervious Area

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

Summary for Subcatchment 103S:

Runoff = 1.25 cfs @ 12.09 hrs, Volume= 0.096 af, Depth= 2.65"
Routed to Pond PP-1 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
17,688	98	Paved parking, HSG D
1,185	74	>75% Grass cover, Good, HSG C
18,873	96	Weighted Average
1,185		6.28% Pervious Area
17,688		93.72% Impervious Area

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

Summary for Subcatchment 104S:

Runoff = 1.41 cfs @ 12.08 hrs, Volume= 0.113 af, Depth= 2.87"
Routed to Pond DF-1 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
	18,803	98	Roofs, HSG D
*	1,786	98	Stone
	20,589	98	Weighted Average
	20,589		100.00% Impervious Area

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

Summary for Subcatchment 105S:

Runoff = 0.67 cfs @ 12.08 hrs, Volume= 0.053 af, Depth= 2.87"
Routed to Pond DF-2 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
	8,810	98	Roofs, HSG D
*	896	98	Stone
	9,706	98	Weighted Average
	9,706		100.00% Impervious Area

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

Summary for Subcatchment 106S:

Runoff = 2.13 cfs @ 12.09 hrs, Volume= 0.153 af, Depth= 1.99"
Routed to Pond 1P : R-TANK

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
21,170	98	Paved parking, HSG D
3,223	98	Roofs, HSG D
15,887	74	>75% Grass cover, Good, HSG C
40,280	89	Weighted Average
15,887		39.44% Pervious Area
24,393		60.56% Impervious Area

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

Summary for Subcatchment 107S:

Runoff = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af, Depth= 2.16"
Routed to Pond DF-3 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
	3,214	98	Roofs, HSG D
*	480	98	Stone
	1,665	74	>75% Grass cover, Good, HSG C
	5,359	91	Weighted Average
	1,665		31.07% Pervious Area
	3,694		68.93% Impervious Area

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

Summary for Subcatchment 108S:

Runoff = 0.10 cfs @ 12.10 hrs, Volume= 0.008 af, Depth= 0.87"
Routed to Pond DMH6 : DMH-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
2,447	74	>75% Grass cover, Good, HSG C
2,448	70	Woods, Good, HSG C
4,895	72	Weighted Average
4,895		100.00% Pervious Area

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

Summary for Subcatchment 109S:

Runoff = 0.17 cfs @ 12.09 hrs, Volume= 0.013 af, Depth= 2.65"
Routed to Pond PP-2 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
2,326	98	Paved parking, HSG D
250	74	>75% Grass cover, Good, HSG C
2,576	96	Weighted Average
250		9.70% Pervious Area
2,326		90.30% Impervious Area

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

Summary for Subcatchment 110S:

Runoff = 0.34 cfs @ 12.08 hrs, Volume= 0.027 af, Depth= 2.87"
Routed to Pond PP-3 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

Area (sf)	CN	Description
4,907	98	Paved parking, HSG D
4,907		100.00% Impervious Area

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

Summary for Reach 1R:

Inflow Area = 0.894 ac, 54.97% Impervious, Inflow Depth = 1.84" for 2-Yr Storm event
Inflow = 1.25 cfs @ 12.16 hrs, Volume= 0.137 af
Outflow = 1.24 cfs @ 12.19 hrs, Volume= 0.137 af, Atten= 1%, Lag= 1.7 min
Routed to Link SP-2 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Max. Velocity= 1.23 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.35 fps, Avg. Travel Time= 8.3 min

Peak Storage= 175 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 20.50'
Bank-Full Depth= 0.50' Flow Area= 11.3 sf, Capacity= 60.16 cfs

20.00' x 0.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 5.0 '/' Top Width= 25.00'
Length= 173.0' Slope= 0.0462 '/'
Inlet Invert= 80.00', Outlet Invert= 72.00'

Summary for Pond 1P: R-TANK

Inflow Area = 0.925 ac, 60.56% Impervious, Inflow Depth = 1.99" for 2-Yr Storm event
Inflow = 2.13 cfs @ 12.09 hrs, Volume= 0.153 af
Outflow = 0.74 cfs @ 12.38 hrs, Volume= 0.153 af, Atten= 65%, Lag= 17.3 min
Primary = 0.74 cfs @ 12.38 hrs, Volume= 0.153 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 88.60' @ 12.38 hrs Surf.Area= 3,593 sf Storage= 1,542 cf
Flood Elev= 91.30' Surf.Area= 3,593 sf Storage= 6,075 cf

Plug-Flow detention time= 27.5 min calculated for 0.153 af (100% of inflow)
Center-of-Mass det. time= 27.6 min (839.9 - 812.3)

Volume	Invert	Avail.Storage	Storage Description
#1	85.30'	1,131 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
#2A	88.22'	1,396 cf	**31.56'W x 62.65'L x 4.07'H Field A** 8,049 cf Overall - 4,560 cf Embedded = 3,489 cf x 40.0% Voids
#3A	88.47'	4,332 cf	**ACF R-Tank HD 2** x 525 Inside #2 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 525 Chambers in 21 Rows
		6,859 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
85.30	1,616	0.0	0	0
85.63	1,616	40.0	213	213
85.97	1,616	20.0	110	323
86.47	1,616	20.0	162	485
86.97	1,616	20.0	162	646
87.47	1,616	20.0	162	808
87.97	1,616	20.0	162	970
88.47	1,616	20.0	162	1,131

Device	Routing	Invert	Outlet Devices
#1	Primary	85.10'	**15.0" Round Culvert** L= 126.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.10' / 83.50' S= 0.0127 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	85.30'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	90.60'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 4.0' Crest Height
#4	Device 1	90.00'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.74 cfs @ 12.38 hrs HW=88.60' (Free Discharge)
└**1=Culvert** (Passes 0.74 cfs of 7.90 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.74 cfs @ 8.52 fps)
  ├**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 2P:

Inflow Area = 1.918 ac, 74.25% Impervious, Inflow Depth = 1.91" for 2-Yr Storm event
Inflow = 3.86 cfs @ 12.08 hrs, Volume= 0.306 af
Outflow = 3.86 cfs @ 12.08 hrs, Volume= 0.306 af, Atten= 0%, Lag= 0.0 min
Primary = 3.86 cfs @ 12.08 hrs, Volume= 0.306 af
Routed to Pond CB-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.82' @ 12.08 hrs
Flood Elev= 95.86'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.65'	**12.0" Round Culvert** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.65' / 90.00' S= 0.0103 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.82 cfs @ 12.08 hrs HW=92.78' (Free Discharge)
1=Culvert (Inlet Controls 3.82 cfs @ 4.86 fps)

Summary for Pond 3P:

Inflow Area = 1.881 ac, 73.74% Impervious, Inflow Depth = 1.90" for 2-Yr Storm event
Inflow = 3.75 cfs @ 12.08 hrs, Volume= 0.297 af
Outflow = 3.75 cfs @ 12.08 hrs, Volume= 0.297 af, Atten= 0%, Lag= 0.0 min
Primary = 3.75 cfs @ 12.08 hrs, Volume= 0.297 af
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.82' @ 12.08 hrs
Flood Elev= 95.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.75'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.29' / 90.75' S= -0.0092 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.70 cfs @ 12.08 hrs HW=92.79' (Free Discharge)
1=Culvert (Inlet Controls 3.70 cfs @ 4.72 fps)

Summary for Pond 4P:

Inflow Area = 1.473 ac, 68.80% Impervious, Inflow Depth = 1.69" for 2-Yr Storm event
Inflow = 2.58 cfs @ 12.07 hrs, Volume= 0.207 af
Outflow = 2.58 cfs @ 12.07 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min
Primary = 2.58 cfs @ 12.07 hrs, Volume= 0.207 af
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.10' @ 12.07 hrs
Flood Elev= 96.14'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.85'	**12.0" Round Culvert** L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.85' / 90.29' S= 0.0073 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.55 cfs @ 12.07 hrs HW=92.08' (Free Discharge)
1=Culvert (Inlet Controls 2.55 cfs @ 3.25 fps)

Summary for Pond 5P:

Inflow Area = 1.217 ac, 67.88% Impervious, Inflow Depth = 1.60" for 2-Yr Storm event
Inflow = 1.98 cfs @ 12.07 hrs, Volume= 0.163 af
Outflow = 1.98 cfs @ 12.07 hrs, Volume= 0.163 af, Atten= 0%, Lag= 0.0 min
Primary = 1.98 cfs @ 12.07 hrs, Volume= 0.163 af
Routed to Pond 4P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.12' @ 12.07 hrs
Flood Elev= 95.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.13'	**12.0" Round Culvert** L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.13' / 90.85' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	95.65'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.96 cfs @ 12.07 hrs HW=92.11' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.96 cfs @ 3.17 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 6P:

Inflow Area = 0.397 ac, 86.80% Impervious, Inflow Depth = 2.04" for 2-Yr Storm event
Inflow = 0.85 cfs @ 12.02 hrs, Volume= 0.067 af
Outflow = 0.85 cfs @ 12.02 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.02 hrs, Volume= 0.067 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.37' @ 12.02 hrs
Flood Elev= 96.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.83'	**12.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.83' / 91.23' S= 0.0094 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.84 cfs @ 12.02 hrs HW=92.37' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.84 cfs @ 1.97 fps)

Summary for Pond 7P:

Inflow Area = 0.260 ac, 79.86% Impervious, Inflow Depth = 1.60" for 2-Yr Storm event
Inflow = 0.58 cfs @ 12.00 hrs, Volume= 0.035 af
Outflow = 0.58 cfs @ 12.00 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.58 cfs @ 12.00 hrs, Volume= 0.035 af
Routed to Pond 6P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.89' @ 12.00 hrs
Flood Elev= 97.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.43'	**12.0" Round Culvert** L= 105.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.43' / 92.03' S= 0.0038 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.57 cfs @ 12.00 hrs HW=92.89' (Free Discharge)
1=Culvert (Barrel Controls 0.57 cfs @ 2.37 fps)

Summary for Pond 8P:

Inflow Area = 0.647 ac, 47.65% Impervious, Inflow Depth = 1.00" for 2-Yr Storm event
Inflow = 0.71 cfs @ 12.09 hrs, Volume= 0.054 af
Outflow = 0.71 cfs @ 12.09 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 12.09 hrs, Volume= 0.054 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.65' @ 12.09 hrs
Flood Elev= 97.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.16'	**12.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.16' / 91.23' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.09 hrs HW=92.64' (Free Discharge)
1=Culvert (Inlet Controls 0.71 cfs @ 1.87 fps)

Summary for Pond 9P:

Inflow Area = 0.350 ac, 27.42% Impervious, Inflow Depth = 0.09" for 2-Yr Storm event
Inflow = 0.00 cfs @ 13.80 hrs, Volume= 0.003 af
Outflow = 0.00 cfs @ 13.80 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 13.80 hrs, Volume= 0.003 af
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.09' @ 13.80 hrs
Flood Elev= 96.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.06'	**12.0" Round Culvert** L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.06' / 92.16' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 13.80 hrs HW=93.09' (Free Discharge)
1=Culvert (Inlet Controls 0.00 cfs @ 0.50 fps)

Summary for Pond CB-1:

Inflow Area = 2.373 ac, 78.91% Impervious, Inflow Depth = 2.10" for 2-Yr Storm event
Inflow = 5.22 cfs @ 12.08 hrs, Volume= 0.415 af
Outflow = 5.22 cfs @ 12.08 hrs, Volume= 0.415 af, Atten= 0%, Lag= 0.0 min
Primary = 5.22 cfs @ 12.08 hrs, Volume= 0.415 af
Routed to Link SP-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 91.82' @ 12.08 hrs
Flood Elev= 95.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	89.95'	**15.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 89.95' / 89.50' S= 0.0129 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.16 cfs @ 12.08 hrs HW=91.80' (Free Discharge)
1=Culvert (Inlet Controls 5.16 cfs @ 4.20 fps)

Summary for Pond DF-1: Drip Strip

Inflow Area = 0.473 ac,100.00% Impervious, Inflow Depth = 2.87" for 2-Yr Storm event
Inflow = 1.41 cfs @ 12.08 hrs, Volume= 0.113 af
Outflow = 0.78 cfs @ 12.21 hrs, Volume= 0.109 af, Atten= 45%, Lag= 7.4 min
Primary = 0.78 cfs @ 12.21 hrs, Volume= 0.109 af
Routed to Pond DMH4 : DMH-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 83.50' @ 12.21 hrs Surf.Area= 1,786 sf Storage= 894 cf

Plug-Flow detention time= 58.8 min calculated for 0.109 af (96% of inflow)
Center-of-Mass det. time= 36.7 min (793.8 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1	81.83'	8,485 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.83	1,786	0.0	0	0
82.16	1,786	30.0	177	177
94.00	1,786	30.0	6,344	6,521
94.25	1,786	40.0	179	6,699
94.75	1,786	40.0	357	7,056
95.75	1,786	40.0	714	7,771
96.75	1,786	40.0	714	8,485

Device	Routing	Invert	Outlet Devices
#1	Primary	82.16'	**6.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.16' / 81.00' S= 0.0232 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.78 cfs @ 12.21 hrs HW=83.50' (Free Discharge)
1=Culvert (Inlet Controls 0.78 cfs @ 3.97 fps)

Summary for Pond DF-2: Drip Strip

Inflow Area = 0.223 ac,100.00% Impervious, Inflow Depth = 2.87" for 2-Yr Storm event
Inflow = 0.67 cfs @ 12.08 hrs, Volume= 0.053 af
Outflow = 0.51 cfs @ 12.15 hrs, Volume= 0.051 af, Atten= 23%, Lag= 4.0 min
Primary = 0.51 cfs @ 12.15 hrs, Volume= 0.051 af
Routed to Pond DMH7 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 82.89' @ 12.15 hrs Surf.Area= 896 sf Storage= 284 cf

Plug-Flow detention time= 52.5 min calculated for 0.051 af (96% of inflow)
Center-of-Mass det. time= 29.5 min (786.5 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1	81.83'	4,257 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.83	896	0.0	0	0
82.16	896	30.0	89	89
94.00	896	30.0	3,183	3,271
94.25	896	40.0	90	3,361
94.75	896	40.0	179	3,540
95.75	896	40.0	358	3,898
96.75	896	40.0	358	4,257

Device	Routing	Invert	Outlet Devices
#1	Primary	82.16'	**6.0" Round Culvert** L= 95.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.16' / 80.00' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.52 cfs @ 12.15 hrs HW=82.89' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.52 cfs @ 2.62 fps)

Summary for Pond DF-3: Drip Strip

Inflow Area = 0.123 ac, 68.93% Impervious, Inflow Depth = 2.16" for 2-Yr Storm event
Inflow = 0.31 cfs @ 12.09 hrs, Volume= 0.022 af
Outflow = 0.21 cfs @ 12.18 hrs, Volume= 0.022 af, Atten= 32%, Lag= 5.4 min
Primary = 0.21 cfs @ 12.18 hrs, Volume= 0.022 af
Routed to Pond DMH6 : DMH-6

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.65' @ 12.18 hrs Surf.Area= 1,786 sf Storage= 174 cf

Plug-Flow detention time= 37.4 min calculated for 0.022 af (100% of inflow)
Center-of-Mass det. time= 37.5 min (841.2 - 803.7)

Volume	Invert	Avail.Storage	Storage Description
#1	93.33'	2,859 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
93.33	1,786	0.0	0	0
93.66	1,786	30.0	177	177
94.00	1,786	30.0	182	359
95.00	1,786	40.0	714	1,073
95.50	1,786	40.0	357	1,431
96.50	1,786	40.0	714	2,145
97.50	1,786	40.0	714	2,859

Device	Routing	Invert	Outlet Devices
#1	Primary	93.33'	**6.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.33' / 92.00' S= 0.0266 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.21 cfs @ 12.18 hrs HW=93.65' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.21 cfs @ 1.53 fps)

Summary for Pond DMH2: DMH-2

Inflow Area = 0.355 ac, 76.51% Impervious, Inflow Depth = 2.34" for 2-Yr Storm event
Inflow = 0.89 cfs @ 12.10 hrs, Volume= 0.069 af
Outflow = 0.89 cfs @ 12.10 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.10 hrs, Volume= 0.069 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 86.47' @ 12.10 hrs
Flood Elev= 94.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	86.00'	**18.0" Round Culvert** L= 150.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 86.00' / 83.50' S= 0.0167 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.87 cfs @ 12.10 hrs HW=86.47' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.87 cfs @ 1.84 fps)

Summary for Pond DMH3: DMH-3

Inflow Area = 1.713 ac, 72.25% Impervious, Inflow Depth = 2.23" for 2-Yr Storm event
Inflow = 1.87 cfs @ 12.11 hrs, Volume= 0.318 af
Outflow = 1.87 cfs @ 12.11 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min
Primary = 1.87 cfs @ 12.11 hrs, Volume= 0.318 af
Routed to Pond DMH4 : DMH-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 82.23' @ 12.11 hrs
Flood Elev= 96.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	81.51'	**18.0" Round Culvert** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.51' / 81.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.86 cfs @ 12.11 hrs HW=82.23' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 1.86 cfs @ 3.23 fps)

Summary for Pond DMH4: DMH-4

Inflow Area = 2.186 ac, 78.25% Impervious, Inflow Depth = 2.34" for 2-Yr Storm event
Inflow = 2.59 cfs @ 12.12 hrs, Volume= 0.427 af
Outflow = 2.59 cfs @ 12.12 hrs, Volume= 0.427 af, Atten= 0%, Lag= 0.0 min
Primary = 2.59 cfs @ 12.12 hrs, Volume= 0.427 af
Routed to Pond DMH5 : DMH-5

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 81.85' @ 12.12 hrs
Flood Elev= 96.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	81.00'	**18.0" Round Culvert** L= 213.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.00' / 79.90' S= 0.0052 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.57 cfs @ 12.12 hrs HW=81.85' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.57 cfs @ 2.48 fps)

Summary for Pond DMH5: DMH-5

Inflow Area = 2.186 ac, 78.25% Impervious, Inflow Depth = 2.34" for 2-Yr Storm event
Inflow = 2.59 cfs @ 12.12 hrs, Volume= 0.427 af
Outflow = 2.59 cfs @ 12.12 hrs, Volume= 0.427 af, Atten= 0%, Lag= 0.0 min
Primary = 2.59 cfs @ 12.12 hrs, Volume= 0.427 af
Routed to Link SP-2 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 80.65' @ 12.12 hrs
Flood Elev= 96.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	79.80'	**18.0" Round Culvert** L= 55.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 79.80' / 78.00' S= 0.0327 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.58 cfs @ 12.12 hrs HW=80.65' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.58 cfs @ 2.48 fps)

Summary for Pond DMH6: DMH-6

Inflow Area = 0.235 ac, 36.02% Impervious, Inflow Depth = 1.55" for 2-Yr Storm event
Inflow = 0.29 cfs @ 12.14 hrs, Volume= 0.030 af
Outflow = 0.29 cfs @ 12.14 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min
Primary = 0.29 cfs @ 12.14 hrs, Volume= 0.030 af
Routed to Pond DMH7 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 90.28' @ 12.14 hrs
Flood Elev= 95.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.00'	**15.0" Round Culvert** L= 163.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.00' / 80.85' S= 0.0561 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.29 cfs @ 12.14 hrs HW=90.28' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.29 cfs @ 1.42 fps)

Summary for Pond DMH7:

Inflow Area = 0.458 ac, 67.13% Impervious, Inflow Depth = 2.14" for 2-Yr Storm event
Inflow = 0.81 cfs @ 12.15 hrs, Volume= 0.082 af
Outflow = 0.81 cfs @ 12.15 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min
Primary = 0.81 cfs @ 12.15 hrs, Volume= 0.082 af
Routed to Pond DMH8 : DMH-8

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 81.22' @ 12.15 hrs
Flood Elev= 90.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	80.75'	**18.0" Round Culvert** L= 49.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.75' / 80.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.80 cfs @ 12.15 hrs HW=81.22' (Free Discharge)
1=Culvert (Barrel Controls 0.80 cfs @ 2.57 fps)

Summary for Pond DMH8: DMH-8

Inflow Area = 0.458 ac, 67.13% Impervious, Inflow Depth = 2.14" for 2-Yr Storm event
Inflow = 0.81 cfs @ 12.15 hrs, Volume= 0.082 af
Outflow = 0.81 cfs @ 12.15 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min
Primary = 0.81 cfs @ 12.15 hrs, Volume= 0.082 af
Routed to Reach 1R :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 80.87' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	80.40'	**18.0" Round Culvert** L= 93.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.40' / 80.00' S= 0.0043 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=0.81 cfs @ 12.15 hrs HW=80.87' (Free Discharge)
1=Culvert (Barrel Controls 0.81 cfs @ 2.56 fps)

Summary for Pond PP-1: Pervious Pavers

Inflow Area = 0.433 ac, 93.72% Impervious, Inflow Depth = 2.65" for 2-Yr Storm event
Inflow = 1.25 cfs @ 12.09 hrs, Volume= 0.096 af
Outflow = 0.35 cfs @ 12.43 hrs, Volume= 0.096 af, Atten= 72%, Lag= 20.6 min
Primary = 0.35 cfs @ 12.43 hrs, Volume= 0.096 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 91.68' @ 12.43 hrs Surf.Area= 3,978 sf Storage= 1,353 cf
Flood Elev= 95.00' Surf.Area= 3,978 sf Storage= 7,630 cf

Plug-Flow detention time= 76.5 min calculated for 0.096 af (100% of inflow)
Center-of-Mass det. time= 77.0 min (852.0 - 775.0)

Volume	Invert	Avail.Storage	Storage Description
#1	90.83'	7,630 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.83	3,978	0.0	0	0
91.16	3,978	40.0	525	525
91.50	3,978	40.0	541	1,066
92.00	3,978	40.0	796	1,862
93.00	3,978	40.0	1,591	3,453
94.00	3,978	40.0	1,591	5,044
94.50	3,978	30.0	597	5,641
95.00	3,978	100.0	1,989	7,630

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.35 cfs @ 12.43 hrs HW=91.68' (Free Discharge)
└─**1=Culvert** (Passes 0.35 cfs of 1.76 cfs potential flow)
└─**2=Orifice/Grate** (Orifice Controls 0.35 cfs @ 3.98 fps)

Summary for Pond PP-2: Pervious Pavers

Inflow Area = 0.059 ac, 90.30% Impervious, Inflow Depth = 2.65" for 2-Yr Storm event
Inflow = 0.17 cfs @ 12.09 hrs, Volume= 0.013 af
Outflow = 0.17 cfs @ 12.09 hrs, Volume= 0.013 af, Atten= 1%, Lag= 0.6 min
Primary = 0.17 cfs @ 12.09 hrs, Volume= 0.013 af
Routed to Pond DMH2 : DMH-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.84' @ 12.09 hrs Surf.Area= 1,023 sf Storage= 6 cf
Flood Elev= 97.50' Surf.Area= 1,023 sf Storage= 2,116 cf

Plug-Flow detention time= 0.6 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (775.5 - 775.0)

Volume	Invert	Avail.Storage	Storage Description
#1	92.83'	2,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.83	1,023	0.0	0	0
93.33	1,023	40.0	205	205
94.00	1,023	40.0	274	479
95.00	1,023	40.0	409	888
95.50	1,023	40.0	205	1,093
96.00	1,023	40.0	205	1,297
97.00	1,023	30.0	307	1,604
97.50	1,023	100.0	512	2,116

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.57 cfs @ 12.09 hrs HW=92.84' (Free Discharge)
↑—**1=Culvert** (Passes 0.57 cfs of 3.67 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.57 cfs @ 6.54 fps)

Summary for Pond PP-3: Pervious Pavers

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth = 2.87" for 2-Yr Storm event
Inflow = 0.34 cfs @ 12.08 hrs, Volume= 0.027 af
Outflow = 0.32 cfs @ 12.11 hrs, Volume= 0.027 af, Atten= 6%, Lag= 1.8 min
Primary = 0.32 cfs @ 12.11 hrs, Volume= 0.027 af
Routed to Pond DMH2 : DMH-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.36' @ 12.11 hrs Surf.Area= 3,446 sf Storage= 37 cf
Flood Elev= 96.50' Surf.Area= 3,446 sf Storage= 6,437 cf

Plug-Flow detention time= 1.9 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 1.9 min (759.0 - 757.1)

Volume	Invert	Avail.Storage	Storage Description
#1	92.33'	6,437 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.33	3,446	0.0	0	0
92.83	3,446	40.0	689	689
93.00	3,446	40.0	234	924
94.00	3,446	40.0	1,378	2,302
94.50	3,446	40.0	689	2,991
95.00	3,446	40.0	689	3,680
96.00	3,446	30.0	1,034	4,714
96.50	3,446	100.0	1,723	6,437

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.49 cfs @ 12.11 hrs HW=92.36' (Free Discharge)
↑**1=Culvert** (Passes 0.49 cfs of 3.02 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 0.49 cfs @ 5.62 fps)

Summary for Pond UDSF-1: Filtration Basin

Inflow Area = 0.436 ac, 42.19% Impervious, Inflow Depth = 1.53" for 2-Yr Storm event
Inflow = 0.78 cfs @ 12.09 hrs, Volume= 0.056 af
Outflow = 0.46 cfs @ 12.21 hrs, Volume= 0.056 af, Atten= 41%, Lag= 7.2 min
Primary = 0.46 cfs @ 12.21 hrs, Volume= 0.056 af
Routed to Reach 1R :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 81.68' @ 12.21 hrs Surf.Area= 691 sf Storage= 327 cf

Plug-Flow detention time= 14.4 min calculated for 0.056 af (100% of inflow)
Center-of-Mass det. time= 14.3 min (848.7 - 834.4)

Volume	Invert	Avail.Storage	Storage Description
#1	80.33'	3,282 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
80.33	691	0.0	0	0
80.67	691	40.0	94	94
81.00	691	40.0	91	185
81.50	691	30.0	104	289
82.00	691	30.0	104	392
82.50	691	30.0	104	496
83.00	835	100.0	382	878
84.00	1,172	100.0	1,004	1,881
85.00	1,629	100.0	1,401	3,282

Device	Routing	Invert	Outlet Devices
#1	Primary	80.33'	**12.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.33' / 80.00' S= 0.0132 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	80.33'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	84.50'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	84.50'	**10.0' long + 3.0 '/' SideZ x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65
2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.46 cfs @ 12.21 hrs HW=81.68' (Free Discharge)
└**1=Culvert** (Passes 0.46 cfs of 3.49 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.46 cfs @ 5.25 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=80.33' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link SP-1:

Inflow Area = 2.373 ac, 78.91% Impervious, Inflow Depth = 2.10" for 2-Yr Storm event
Inflow = 5.22 cfs @ 12.08 hrs, Volume= 0.415 af
Primary = 5.22 cfs @ 12.08 hrs, Volume= 0.415 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Link SP-2:

Inflow Area = 4.667 ac, 52.49% Impervious, Inflow Depth = 1.86" for 2-Yr Storm event
Inflow = 4.93 cfs @ 12.22 hrs, Volume= 0.723 af
Primary = 4.93 cfs @ 12.22 hrs, Volume= 0.723 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Subcatchment 10S:

Runoff = 2.03 cfs @ 12.08 hrs, Volume= 0.165 af, Depth= 4.36"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	10,475	98	Offsite impervious
*	9,057	98	Existing Impervious
	285	74	>75% Grass cover, Good, HSG C
	19,817	98	Weighted Average
	285		1.44% Pervious Area
	19,532		98.56% Impervious Area

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

Summary for Subcatchment 20S:

Runoff = 0.17 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 4.36"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	784	98	Existing Impervious
*	853	98	Offsite Impervious
	1,637	98	Weighted Average
	1,637		100.00% Impervious Area

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

Summary for Subcatchment 30S:

Runoff = 1.79 cfs @ 12.08 hrs, Volume= 0.141 af, Depth= 4.14"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	13,779	98	Offsite Impervious
*	2,496	98	Impervious
*	746	74	Offsite Landscaped
	754	74	>75% Grass cover, Good, HSG C
	17,775	96	Weighted Average
	1,500		8.44% Pervious Area
	16,275		91.56% Impervious Area

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

Summary for Subcatchment 40S:

Runoff = 1.01 cfs @ 12.09 hrs, Volume= 0.074 af, Depth= 3.49"
Routed to Pond 4P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	7,341	98	Offsite Impervious
*	806	98	Existing Impervious
	1,646	74	>75% Grass cover, Good, HSG C
	1,338	65	Brush, Good, HSG C
	11,131	90	Weighted Average
	2,984		26.81% Pervious Area
	8,147		73.19% Impervious Area

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

Summary for Subcatchment 50S:

Runoff = 0.77 cfs @ 12.08 hrs, Volume= 0.063 af, Depth= 4.36"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	5,773	98	Offsite Impervious
*	1,775	98	Existing Impervious
	7,548	98	Weighted Average
	7,548		100.00% Impervious Area

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

Summary for Subcatchment 60S:

Runoff = 0.61 cfs @ 12.08 hrs, Volume= 0.050 af, Depth= 4.36"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	3,268	98	Offsite Impervious
*	2,700	98	Existing Impervious
	5,968	98	Weighted Average
	5,968		100.00% Impervious Area

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

Summary for Subcatchment 70S:

Runoff = 1.17 cfs @ 12.09 hrs, Volume= 0.086 af, Depth= 3.49"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	9,239	98	Offsite Impervious
	2,635	74	>75% Grass cover, Good, HSG C
	1,040	65	Brush, Good, HSG C
	12,914	90	Weighted Average
	3,675		28.46% Pervious Area
	9,239		71.54% Impervious Area

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

Summary for Subcatchment 80S:

Runoff = 1.05 cfs @ 12.00 hrs, Volume= 0.063 af, Depth= 2.91"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	9,056	98	Offsite Impervious
	2,284	30	Brush, Good, HSG A
	11,340	84	Weighted Average
	2,284		20.14% Pervious Area
	9,056		79.86% Impervious Area

Summary for Subcatchment 90S:

Runoff = 0.09 cfs @ 12.15 hrs, Volume= 0.014 af, Depth= 0.49"
Routed to Pond 9P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	4,183	98	Offsite Impervious area
	11,072	30	Brush, Good, HSG A
	15,255	49	Weighted Average
	11,072		72.58% Pervious Area
	4,183		27.42% Impervious Area

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

Summary for Subcatchment 100:

Runoff = 2.96 cfs @ 12.28 hrs, Volume= 0.314 af, Depth= 2.38"
Routed to Link SP-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
	41,443	74	>75% Grass cover, Good, HSG C
*	16,896	74	OFSITE AREA TO BE UPDATED
*	10,765	98	Offsite Impervious
	69,104	78	Weighted Average
	58,339		84.42% Pervious Area
	10,765		15.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.3	75	0.0930	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.10"
3.2	110	0.0540	0.58		**Shallow Concentrated Flow, B-C** Forest w/Heavy Litter Kv= 2.5 fps
0.6	70	0.0100	1.95	1.95	**Parabolic Channel, C-D** W=3.00' D=0.50' Area=1.0 sf Perim=3.2' n= 0.035
20.1	255	Total			

Summary for Subcatchment 101S:

Runoff = 1.43 cfs @ 12.09 hrs, Volume= 0.102 af, Depth= 2.81"
Routed to Pond UDSF-1 : Filtration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

Area (sf)	CN	Description
8,017	98	Paved parking, HSG D
3,766	70	Woods, Good, HSG C
7,218	74	>75% Grass cover, Good, HSG C
19,001	83	Weighted Average
10,984		57.81% Pervious Area
8,017		42.19% Impervious Area

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

Summary for Subcatchment 102S:

Runoff = 0.69 cfs @ 12.09 hrs, Volume= 0.050 af, Depth= 3.29"
Routed to Pond DMH2 : DMH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

Area (sf)	CN	Description
4,611	98	Roofs, HSG D
3,387	74	>75% Grass cover, Good, HSG C
7,998	88	Weighted Average
3,387		42.35% Pervious Area
4,611		57.65% Impervious Area

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

Summary for Subcatchment 103S:

Runoff = 1.90 cfs @ 12.08 hrs, Volume= 0.149 af, Depth= 4.14"
Routed to Pond PP-1 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

Area (sf)	CN	Description
17,688	98	Paved parking, HSG D
1,185	74	>75% Grass cover, Good, HSG C
18,873	96	Weighted Average
1,185		6.28% Pervious Area
17,688		93.72% Impervious Area

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

Summary for Subcatchment 104S:

Runoff = 2.11 cfs @ 12.08 hrs, Volume= 0.172 af, Depth= 4.36"
Routed to Pond DF-1 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
	18,803	98	Roofs, HSG D
*	1,786	98	Stone
	20,589	98	Weighted Average
	20,589		100.00% Impervious Area

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

Summary for Subcatchment 105S:

Runoff = 1.00 cfs @ 12.08 hrs, Volume= 0.081 af, Depth= 4.36"
Routed to Pond DF-2 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
	8,810	98	Roofs, HSG D
*	896	98	Stone
	9,706	98	Weighted Average
	9,706		100.00% Impervious Area

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

Summary for Subcatchment 106S:

Runoff = 3.57 cfs @ 12.09 hrs, Volume= 0.261 af, Depth= 3.39"
Routed to Pond 1P : R-TANK

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
	21,170	98	Paved parking, HSG D
	3,223	98	Roofs, HSG D
	15,887	74	>75% Grass cover, Good, HSG C
	40,280	89	Weighted Average
	15,887		39.44% Pervious Area
	24,393		60.56% Impervious Area

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

Summary for Subcatchment 107S:

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.037 af, Depth= 3.59"
Routed to Pond DF-3 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
	3,214	98	Roofs, HSG D
*	480	98	Stone
	1,665	74	>75% Grass cover, Good, HSG C
	5,359	91	Weighted Average
	1,665		31.07% Pervious Area
	3,694		68.93% Impervious Area

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

Summary for Subcatchment 108S:

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 0.018 af, Depth= 1.89"
Routed to Pond DMH6 : DMH-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

Area (sf)	CN	Description
2,447	74	>75% Grass cover, Good, HSG C
2,448	70	Woods, Good, HSG C
4,895	72	Weighted Average
4,895		100.00% Pervious Area

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

Summary for Subcatchment 109S:

Runoff = 0.26 cfs @ 12.08 hrs, Volume= 0.020 af, Depth= 4.14"
Routed to Pond PP-2 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

Area (sf)	CN	Description
2,326	98	Paved parking, HSG D
250	74	>75% Grass cover, Good, HSG C
2,576	96	Weighted Average
250		9.70% Pervious Area
2,326		90.30% Impervious Area

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

Summary for Subcatchment 110S:

Runoff = 0.50 cfs @ 12.08 hrs, Volume= 0.041 af, Depth= 4.36"
Routed to Pond PP-3 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

Area (sf)	CN	Description
4,907	98	Paved parking, HSG D
4,907		100.00% Impervious Area

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

Summary for Reach 1R:

Inflow Area = 0.894 ac, 54.97% Impervious, Inflow Depth = 3.16" for 10-Yr Storm event
Inflow = 1.88 cfs @ 12.15 hrs, Volume= 0.236 af
Outflow = 1.87 cfs @ 12.17 hrs, Volume= 0.236 af, Atten= 1%, Lag= 1.4 min
Routed to Link SP-2 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Max. Velocity= 1.44 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 0.40 fps, Avg. Travel Time= 7.3 min

Peak Storage= 224 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.06' , Surface Width= 20.64'
Bank-Full Depth= 0.50' Flow Area= 11.3 sf, Capacity= 60.16 cfs

20.00' x 0.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 5.0 '/' Top Width= 25.00'
Length= 173.0' Slope= 0.0462 '/'
Inlet Invert= 80.00', Outlet Invert= 72.00'

‡

Summary for Pond 1P: R-TANK

Inflow Area = 0.925 ac, 60.56% Impervious, Inflow Depth = 3.39" for 10-Yr Storm event
Inflow = 3.57 cfs @ 12.09 hrs, Volume= 0.261 af
Outflow = 0.85 cfs @ 12.48 hrs, Volume= 0.261 af, Atten= 76%, Lag= 23.6 min
Primary = 0.85 cfs @ 12.48 hrs, Volume= 0.261 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 89.59' @ 12.48 hrs Surf.Area= 3,593 sf Storage= 3,214 cf
Flood Elev= 91.30' Surf.Area= 3,593 sf Storage= 6,075 cf

Plug-Flow detention time= 35.5 min calculated for 0.261 af (100% of inflow)
Center-of-Mass det. time= 35.6 min (832.9 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1	85.30'	1,131 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
#2A	88.22'	1,396 cf	**31.56'W x 62.65'L x 4.07'H Field A** 8,049 cf Overall - 4,560 cf Embedded = 3,489 cf x 40.0% Voids
#3A	88.47'	4,332 cf	**ACF R-Tank HD 2** x 525 Inside #2 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 525 Chambers in 21 Rows
		6,859 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
85.30	1,616	0.0	0	0
85.63	1,616	40.0	213	213
85.97	1,616	20.0	110	323
86.47	1,616	20.0	162	485
86.97	1,616	20.0	162	646
87.47	1,616	20.0	162	808
87.97	1,616	20.0	162	970
88.47	1,616	20.0	162	1,131

Device	Routing	Invert	Outlet Devices
#1	Primary	85.10'	**15.0" Round Culvert** L= 126.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.10' / 83.50' S= 0.0127 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	85.30'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	90.60'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 4.0' Crest Height
#4	Device 1	90.00'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.85 cfs @ 12.48 hrs HW=89.59' (Free Discharge)
└**1=Culvert** (Passes 0.85 cfs of 9.17 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.85 cfs @ 9.78 fps)
  ├**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 2P:

Inflow Area = 1.918 ac, 74.25% Impervious, Inflow Depth = 3.16" for 10-Yr Storm event
Inflow = 6.15 cfs @ 12.08 hrs, Volume= 0.505 af
Outflow = 6.15 cfs @ 12.08 hrs, Volume= 0.505 af, Atten= 0%, Lag= 0.0 min
Primary = 6.15 cfs @ 12.08 hrs, Volume= 0.505 af
Routed to Pond CB-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 95.39' @ 12.08 hrs
Flood Elev= 95.86'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.65'	**12.0" Round Culvert** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.65' / 90.00' S= 0.0103 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=6.08 cfs @ 12.08 hrs HW=95.30' (Free Discharge)
1=Culvert (Inlet Controls 6.08 cfs @ 7.74 fps)

Summary for Pond 3P:

Inflow Area = 1.881 ac, 73.74% Impervious, Inflow Depth = 3.14" for 10-Yr Storm event
Inflow = 5.98 cfs @ 12.08 hrs, Volume= 0.491 af
Outflow = 5.98 cfs @ 12.08 hrs, Volume= 0.491 af, Atten= 0%, Lag= 0.0 min
Primary = 5.98 cfs @ 12.08 hrs, Volume= 0.491 af
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 95.26' @ 12.08 hrs
Flood Elev= 95.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.75'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.29' / 90.75' S= -0.0092 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.92 cfs @ 12.08 hrs HW=95.18' (Free Discharge)
1=Culvert (Inlet Controls 5.92 cfs @ 7.53 fps)

Summary for Pond 4P:

Inflow Area = 1.473 ac, 68.80% Impervious, Inflow Depth = 2.86" for 10-Yr Storm event
Inflow = 4.21 cfs @ 12.07 hrs, Volume= 0.351 af
Outflow = 4.21 cfs @ 12.07 hrs, Volume= 0.351 af, Atten= 0%, Lag= 0.0 min
Primary = 4.21 cfs @ 12.07 hrs, Volume= 0.351 af
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.34' @ 12.07 hrs
Flood Elev= 96.14'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.85'	**12.0" Round Culvert** L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.85' / 90.29' S= 0.0073 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.16 cfs @ 12.07 hrs HW=93.29' (Free Discharge)
1=Culvert (Inlet Controls 4.16 cfs @ 5.30 fps)

Summary for Pond 5P:

Inflow Area = 1.217 ac, 67.88% Impervious, Inflow Depth = 2.73" for 10-Yr Storm event
Inflow = 3.22 cfs @ 12.07 hrs, Volume= 0.276 af
Outflow = 3.22 cfs @ 12.07 hrs, Volume= 0.276 af, Atten= 0%, Lag= 0.0 min
Primary = 3.22 cfs @ 12.07 hrs, Volume= 0.276 af
Routed to Pond 4P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.83' @ 12.07 hrs
Flood Elev= 95.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.13'	**12.0" Round Culvert** L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.13' / 90.85' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	95.65'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.19 cfs @ 12.07 hrs HW=92.82' (Free Discharge)
1=Culvert (Barrel Controls 3.19 cfs @ 4.06 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond 6P:

Inflow Area = 0.397 ac, 86.80% Impervious, Inflow Depth = 3.41" for 10-Yr Storm event
Inflow = 1.46 cfs @ 12.01 hrs, Volume= 0.113 af
Outflow = 1.46 cfs @ 12.01 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min
Primary = 1.46 cfs @ 12.01 hrs, Volume= 0.113 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.58' @ 12.01 hrs
Flood Elev= 96.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.83'	**12.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.83' / 91.23' S= 0.0094 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.43 cfs @ 12.01 hrs HW=92.57' (Free Discharge)
1=Culvert (Inlet Controls 1.43 cfs @ 2.30 fps)

Summary for Pond 7P:

Inflow Area = 0.260 ac, 79.86% Impervious, Inflow Depth = 2.91" for 10-Yr Storm event
Inflow = 1.05 cfs @ 12.00 hrs, Volume= 0.063 af
Outflow = 1.05 cfs @ 12.00 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.00 hrs, Volume= 0.063 af
Routed to Pond 6P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.08' @ 12.00 hrs
Flood Elev= 97.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.43'	**12.0" Round Culvert** L= 105.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.43' / 92.03' S= 0.0038 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.04 cfs @ 12.00 hrs HW=93.08' (Free Discharge)
1=Culvert (Barrel Controls 1.04 cfs @ 2.75 fps)

Summary for Pond 8P:

Inflow Area = 0.647 ac, 47.65% Impervious, Inflow Depth = 1.87" for 10-Yr Storm event
Inflow = 1.24 cfs @ 12.09 hrs, Volume= 0.101 af
Outflow = 1.24 cfs @ 12.09 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.24 cfs @ 12.09 hrs, Volume= 0.101 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.83' @ 12.09 hrs
Flood Elev= 97.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.16'	**12.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.16' / 91.23' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.24 cfs @ 12.09 hrs HW=92.83' (Free Discharge)
1=Culvert (Inlet Controls 1.24 cfs @ 2.20 fps)

Summary for Pond 9P:

Inflow Area = 0.350 ac, 27.42% Impervious, Inflow Depth = 0.49" for 10-Yr Storm event
Inflow = 0.09 cfs @ 12.15 hrs, Volume= 0.014 af
Outflow = 0.09 cfs @ 12.15 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 12.15 hrs, Volume= 0.014 af
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.22' @ 12.15 hrs
Flood Elev= 96.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.06'	**12.0" Round Culvert** L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.06' / 92.16' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 12.15 hrs HW=93.22' (Free Discharge)
1=Culvert (Inlet Controls 0.09 cfs @ 1.09 fps)

Summary for Pond CB-1:

Inflow Area = 2.373 ac, 78.91% Impervious, Inflow Depth = 3.39" for 10-Yr Storm event
Inflow = 8.18 cfs @ 12.08 hrs, Volume= 0.671 af
Outflow = 8.18 cfs @ 12.08 hrs, Volume= 0.671 af, Atten= 0%, Lag= 0.0 min
Primary = 8.18 cfs @ 12.08 hrs, Volume= 0.671 af
Routed to Link SP-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.65' @ 12.08 hrs
Flood Elev= 95.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	89.95'	**15.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 89.95' / 89.50' S= 0.0129 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=8.09 cfs @ 12.08 hrs HW=93.58' (Free Discharge)
1=Culvert (Inlet Controls 8.09 cfs @ 6.59 fps)

Summary for Pond DF-1: Drip Strip

Inflow Area = 0.473 ac,100.00% Impervious, Inflow Depth = 4.36" for 10-Yr Storm event
Inflow = 2.11 cfs @ 12.08 hrs, Volume= 0.172 af
Outflow = 1.04 cfs @ 12.23 hrs, Volume= 0.168 af, Atten= 51%, Lag= 8.9 min
Primary = 1.04 cfs @ 12.23 hrs, Volume= 0.168 af
Routed to Pond DMH4 : DMH-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 84.35' @ 12.23 hrs Surf.Area= 1,786 sf Storage= 1,348 cf

Plug-Flow detention time= 47.1 min calculated for 0.168 af (98% of inflow)
Center-of-Mass det. time= 31.9 min (781.4 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	81.83'	8,485 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.83	1,786	0.0	0	0
82.16	1,786	30.0	177	177
94.00	1,786	30.0	6,344	6,521
94.25	1,786	40.0	179	6,699
94.75	1,786	40.0	357	7,056
95.75	1,786	40.0	714	7,771
96.75	1,786	40.0	714	8,485

Device	Routing	Invert	Outlet Devices
#1	Primary	82.16'	**6.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.16' / 81.00' S= 0.0232 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=1.04 cfs @ 12.23 hrs HW=84.34' (Free Discharge)
1=Culvert (Inlet Controls 1.04 cfs @ 5.29 fps)

Summary for Pond DF-2: Drip Strip

Inflow Area = 0.223 ac,100.00% Impervious, Inflow Depth = 4.36" for 10-Yr Storm event
Inflow = 1.00 cfs @ 12.08 hrs, Volume= 0.081 af
Outflow = 0.71 cfs @ 12.16 hrs, Volume= 0.079 af, Atten= 29%, Lag= 4.7 min
Primary = 0.71 cfs @ 12.16 hrs, Volume= 0.079 af
Routed to Pond DMH7 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 83.32' @ 12.16 hrs Surf.Area= 896 sf Storage= 400 cf

Plug-Flow detention time= 40.2 min calculated for 0.079 af (97% of inflow)
Center-of-Mass det. time= 24.2 min (773.7 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	81.83'	4,257 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.83	896	0.0	0	0
82.16	896	30.0	89	89
94.00	896	30.0	3,183	3,271
94.25	896	40.0	90	3,361
94.75	896	40.0	179	3,540
95.75	896	40.0	358	3,898
96.75	896	40.0	358	4,257

Device	Routing	Invert	Outlet Devices
#1	Primary	82.16'	**6.0" Round Culvert** L= 95.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.16' / 80.00' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.71 cfs @ 12.16 hrs HW=83.31' (Free Discharge)
1=Culvert (Inlet Controls 0.71 cfs @ 3.61 fps)

Summary for Pond DF-3: Drip Strip

Inflow Area = 0.123 ac, 68.93% Impervious, Inflow Depth = 3.59" for 10-Yr Storm event
Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.037 af
Outflow = 0.35 cfs @ 12.17 hrs, Volume= 0.037 af, Atten= 30%, Lag= 4.9 min
Primary = 0.35 cfs @ 12.17 hrs, Volume= 0.037 af
Routed to Pond DMH6 : DMH-6

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.79' @ 12.17 hrs Surf.Area= 1,786 sf Storage= 247 cf

Plug-Flow detention time= 30.6 min calculated for 0.037 af (100% of inflow)
Center-of-Mass det. time= 30.7 min (820.3 - 789.6)

Volume	Invert	Avail.Storage	Storage Description
#1	93.33'	2,859 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
93.33	1,786	0.0	0	0
93.66	1,786	30.0	177	177
94.00	1,786	30.0	182	359
95.00	1,786	40.0	714	1,073
95.50	1,786	40.0	357	1,431
96.50	1,786	40.0	714	2,145
97.50	1,786	40.0	714	2,859

Device	Routing	Invert	Outlet Devices
#1	Primary	93.33'	**6.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.33' / 92.00' S= 0.0266 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.34 cfs @ 12.17 hrs HW=93.79' (Free Discharge)
1=Culvert (Inlet Controls 0.34 cfs @ 1.82 fps)

Summary for Pond DMH2: DMH-2

Inflow Area = 0.355 ac, 76.51% Impervious, Inflow Depth = 3.77" for 10-Yr Storm event
Inflow = 1.41 cfs @ 12.10 hrs, Volume= 0.112 af
Outflow = 1.41 cfs @ 12.10 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 12.10 hrs, Volume= 0.112 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 86.61' @ 12.10 hrs
Flood Elev= 94.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	86.00'	**18.0" Round Culvert** L= 150.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 86.00' / 83.50' S= 0.0167 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.39 cfs @ 12.10 hrs HW=86.60' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.39 cfs @ 2.09 fps)

Summary for Pond DMH3: DMH-3

Inflow Area = 1.713 ac, 72.25% Impervious, Inflow Depth = 3.66" for 10-Yr Storm event
Inflow = 2.56 cfs @ 12.10 hrs, Volume= 0.522 af
Outflow = 2.56 cfs @ 12.10 hrs, Volume= 0.522 af, Atten= 0%, Lag= 0.0 min
Primary = 2.56 cfs @ 12.10 hrs, Volume= 0.522 af
Routed to Pond DMH4 : DMH-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 82.38' @ 12.10 hrs
Flood Elev= 96.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	81.51'	**18.0" Round Culvert** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.51' / 81.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.53 cfs @ 12.10 hrs HW=82.37' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 2.53 cfs @ 3.47 fps)

Summary for Pond DMH4: DMH-4

Inflow Area = 2.186 ac, 78.25% Impervious, Inflow Depth = 3.79" for 10-Yr Storm event
Inflow = 3.49 cfs @ 12.12 hrs, Volume= 0.690 af
Outflow = 3.49 cfs @ 12.12 hrs, Volume= 0.690 af, Atten= 0%, Lag= 0.0 min
Primary = 3.49 cfs @ 12.12 hrs, Volume= 0.690 af
Routed to Pond DMH5 : DMH-5

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 82.02' @ 12.12 hrs
Flood Elev= 96.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	81.00'	**18.0" Round Culvert** L= 213.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.00' / 79.90' S= 0.0052 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.48 cfs @ 12.12 hrs HW=82.02' (Free Discharge)
└**1=Culvert** (Inlet Controls 3.48 cfs @ 2.72 fps)

Summary for Pond DMH5: DMH-5

Inflow Area = 2.186 ac, 78.25% Impervious, Inflow Depth = 3.79" for 10-Yr Storm event
Inflow = 3.49 cfs @ 12.12 hrs, Volume= 0.690 af
Outflow = 3.49 cfs @ 12.12 hrs, Volume= 0.690 af, Atten= 0%, Lag= 0.0 min
Primary = 3.49 cfs @ 12.12 hrs, Volume= 0.690 af
Routed to Link SP-2 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 80.82' @ 12.12 hrs
Flood Elev= 96.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	79.80'	**18.0" Round Culvert** L= 55.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 79.80' / 78.00' S= 0.0327 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.48 cfs @ 12.12 hrs HW=80.82' (Free Discharge)
└**1=Culvert** (Inlet Controls 3.48 cfs @ 2.72 fps)

Summary for Pond DMH6: DMH-6

Inflow Area = 0.235 ac, 36.02% Impervious, Inflow Depth = 2.78" for 10-Yr Storm event
Inflow = 0.56 cfs @ 12.12 hrs, Volume= 0.055 af
Outflow = 0.56 cfs @ 12.12 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min
Primary = 0.56 cfs @ 12.12 hrs, Volume= 0.055 af
Routed to Pond DMH7 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 90.39' @ 12.12 hrs
Flood Elev= 95.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.00'	**15.0" Round Culvert** L= 163.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.00' / 80.85' S= 0.0561 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.56 cfs @ 12.12 hrs HW=90.39' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.56 cfs @ 1.69 fps)

Summary for Pond DMH7:

Inflow Area = 0.458 ac, 67.13% Impervious, Inflow Depth = 3.50" for 10-Yr Storm event
Inflow = 1.26 cfs @ 12.14 hrs, Volume= 0.134 af
Outflow = 1.26 cfs @ 12.14 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 1.26 cfs @ 12.14 hrs, Volume= 0.134 af
Routed to Pond DMH8 : DMH-8

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 81.35' @ 12.14 hrs
Flood Elev= 90.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	80.75'	**18.0" Round Culvert** L= 49.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.75' / 80.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.25 cfs @ 12.14 hrs HW=81.34' (Free Discharge)
1=Culvert (Barrel Controls 1.25 cfs @ 2.84 fps)

Summary for Pond DMH8: DMH-8

Inflow Area = 0.458 ac, 67.13% Impervious, Inflow Depth = 3.50" for 10-Yr Storm event
Inflow = 1.26 cfs @ 12.14 hrs, Volume= 0.134 af
Outflow = 1.26 cfs @ 12.14 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 1.26 cfs @ 12.14 hrs, Volume= 0.134 af
Routed to Reach 1R :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 80.99' @ 12.14 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	80.40'	**18.0" Round Culvert** L= 93.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.40' / 80.00' S= 0.0043 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.25 cfs @ 12.14 hrs HW=80.99' (Free Discharge)
1=Culvert (Barrel Controls 1.25 cfs @ 2.85 fps)

Summary for Pond PP-1: Pervious Pavers

Inflow Area = 0.433 ac, 93.72% Impervious, Inflow Depth = 4.14" for 10-Yr Storm event
Inflow = 1.90 cfs @ 12.08 hrs, Volume= 0.149 af
Outflow = 0.46 cfs @ 12.47 hrs, Volume= 0.149 af, Atten= 76%, Lag= 22.9 min
Primary = 0.46 cfs @ 12.47 hrs, Volume= 0.149 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 92.18' @ 12.47 hrs Surf.Area= 3,978 sf Storage= 2,144 cf
Flood Elev= 95.00' Surf.Area= 3,978 sf Storage= 7,630 cf

Plug-Flow detention time= 74.8 min calculated for 0.149 af (100% of inflow)
Center-of-Mass det. time= 74.5 min (838.9 - 764.4)

Volume	Invert	Avail.Storage	Storage Description
#1	90.83'	7,630 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.83	3,978	0.0	0	0
91.16	3,978	40.0	525	525
91.50	3,978	40.0	541	1,066
92.00	3,978	40.0	796	1,862
93.00	3,978	40.0	1,591	3,453
94.00	3,978	40.0	1,591	5,044
94.50	3,978	30.0	597	5,641
95.00	3,978	100.0	1,989	7,630

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.46 cfs @ 12.47 hrs HW=92.18' (Free Discharge)
└**1=Culvert** (Passes 0.46 cfs of 2.75 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.46 cfs @ 5.23 fps)

Summary for Pond PP-2: Pervious Pavers

Inflow Area = 0.059 ac, 90.30% Impervious, Inflow Depth = 4.14" for 10-Yr Storm event
Inflow = 0.26 cfs @ 12.08 hrs, Volume= 0.020 af
Outflow = 0.26 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 1%, Lag= 0.6 min
Primary = 0.26 cfs @ 12.09 hrs, Volume= 0.020 af
Routed to Pond DMH2 : DMH-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.85' @ 12.09 hrs Surf.Area= 1,023 sf Storage= 9 cf
Flood Elev= 97.50' Surf.Area= 1,023 sf Storage= 2,116 cf

Plug-Flow detention time= 0.6 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (765.0 - 764.4)

Volume	Invert	Avail.Storage	Storage Description
#1	92.83'	2,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.83	1,023	0.0	0	0
93.33	1,023	40.0	205	205
94.00	1,023	40.0	274	479
95.00	1,023	40.0	409	888
95.50	1,023	40.0	205	1,093
96.00	1,023	40.0	205	1,297
97.00	1,023	30.0	307	1,604
97.50	1,023	100.0	512	2,116

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.57 cfs @ 12.09 hrs HW=92.85' (Free Discharge)
↑—**1=Culvert** (Passes 0.57 cfs of 3.68 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.57 cfs @ 6.56 fps)

Summary for Pond PP-3: Pervious Pavers

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth = 4.36" for 10-Yr Storm event
Inflow = 0.50 cfs @ 12.08 hrs, Volume= 0.041 af
Outflow = 0.47 cfs @ 12.11 hrs, Volume= 0.041 af, Atten= 6%, Lag= 1.8 min
Primary = 0.47 cfs @ 12.11 hrs, Volume= 0.041 af
Routed to Pond DMH2 : DMH-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.37' @ 12.11 hrs Surf.Area= 3,446 sf Storage= 55 cf
Flood Elev= 96.50' Surf.Area= 3,446 sf Storage= 6,437 cf

Plug-Flow detention time= 1.9 min calculated for 0.041 af (100% of inflow)
Center-of-Mass det. time= 1.9 min (751.4 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	92.33'	6,437 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.33	3,446	0.0	0	0
92.83	3,446	40.0	689	689
93.00	3,446	40.0	234	924
94.00	3,446	40.0	1,378	2,302
94.50	3,446	40.0	689	2,991
95.00	3,446	40.0	689	3,680
96.00	3,446	30.0	1,034	4,714
96.50	3,446	100.0	1,723	6,437

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.49 cfs @ 12.11 hrs HW=92.37' (Free Discharge)
└**1=Culvert** (Passes 0.49 cfs of 3.04 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.49 cfs @ 5.64 fps)

Summary for Pond UDSF-1: Filtration Basin

Inflow Area = 0.436 ac, 42.19% Impervious, Inflow Depth = 2.81" for 10-Yr Storm event
Inflow = 1.43 cfs @ 12.09 hrs, Volume= 0.102 af
Outflow = 0.64 cfs @ 12.28 hrs, Volume= 0.102 af, Atten= 55%, Lag= 11.7 min
Primary = 0.64 cfs @ 12.28 hrs, Volume= 0.102 af
Routed to Reach 1R :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 82.84' @ 12.28 hrs Surf.Area= 788 sf Storage= 746 cf

Plug-Flow detention time= 14.5 min calculated for 0.102 af (100% of inflow)
Center-of-Mass det. time= 14.5 min (831.4 - 816.9)

Volume	Invert	Avail.Storage	Storage Description
#1	80.33'	3,282 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
80.33	691	0.0	0	0
80.67	691	40.0	94	94
81.00	691	40.0	91	185
81.50	691	30.0	104	289
82.00	691	30.0	104	392
82.50	691	30.0	104	496
83.00	835	100.0	382	878
84.00	1,172	100.0	1,004	1,881
85.00	1,629	100.0	1,401	3,282

Device	Routing	Invert	Outlet Devices
#1	Primary	80.33'	**12.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.33' / 80.00' S= 0.0132 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	80.33'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	84.50'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	84.50'	**10.0' long + 3.0 '/' SideZ x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65
2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.64 cfs @ 12.28 hrs HW=82.84' (Free Discharge)
└**1=Culvert** (Passes 0.64 cfs of 5.36 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.64 cfs @ 7.37 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=80.33' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link SP-1:

Inflow Area = 2.373 ac, 78.91% Impervious, Inflow Depth = 3.39" for 10-Yr Storm event
Inflow = 8.18 cfs @ 12.08 hrs, Volume= 0.671 af
Primary = 8.18 cfs @ 12.08 hrs, Volume= 0.671 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Link SP-2:

Inflow Area = 4.667 ac, 52.49% Impervious, Inflow Depth = 3.19" for 10-Yr Storm event
Inflow = 7.74 cfs @ 12.23 hrs, Volume= 1.240 af
Primary = 7.74 cfs @ 12.23 hrs, Volume= 1.240 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Subcatchment 10S:

Runoff = 2.57 cfs @ 12.08 hrs, Volume= 0.211 af, Depth= 5.56"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	10,475	98	Offsite impervious
*	9,057	98	Existing Impervious
	285	74	>75% Grass cover, Good, HSG C
	19,817	98	Weighted Average
	285		1.44% Pervious Area
	19,532		98.56% Impervious Area

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

Summary for Subcatchment 20S:

Runoff = 0.21 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 5.56"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	784	98	Existing Impervious
*	853	98	Offsite Impervious
	1,637	98	Weighted Average
	1,637		100.00% Impervious Area

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

Summary for Subcatchment 30S:

Runoff = 2.28 cfs @ 12.08 hrs, Volume= 0.181 af, Depth= 5.33"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	13,779	98	Offsite Impervious
*	2,496	98	Impervious
*	746	74	Offsite Landscaped
	754	74	>75% Grass cover, Good, HSG C
	17,775	96	Weighted Average
	1,500		8.44% Pervious Area
	16,275		91.56% Impervious Area

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

Summary for Subcatchment 40S:

Runoff = 1.32 cfs @ 12.09 hrs, Volume= 0.099 af, Depth= 4.65"
Routed to Pond 4P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	7,341	98	Offsite Impervious
*	806	98	Existing Impervious
	1,646	74	>75% Grass cover, Good, HSG C
	1,338	65	Brush, Good, HSG C
	11,131	90	Weighted Average
	2,984		26.81% Pervious Area
	8,147		73.19% Impervious Area

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

Summary for Subcatchment 50S:

Runoff = 0.98 cfs @ 12.08 hrs, Volume= 0.080 af, Depth= 5.56"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	5,773	98	Offsite Impervious
*	1,775	98	Existing Impervious
	7,548	98	Weighted Average
	7,548		100.00% Impervious Area

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

Summary for Subcatchment 60S:

Runoff = 0.77 cfs @ 12.08 hrs, Volume= 0.064 af, Depth= 5.56"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	3,268	98	Offsite Impervious
*	2,700	98	Existing Impervious
	5,968	98	Weighted Average
	5,968		100.00% Impervious Area

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

Summary for Subcatchment 70S:

Runoff = 1.54 cfs @ 12.09 hrs, Volume= 0.115 af, Depth= 4.65"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	9,239	98	Offsite Impervious
	2,635	74	>75% Grass cover, Good, HSG C
	1,040	65	Brush, Good, HSG C
	12,914	90	Weighted Average
	3,675		28.46% Pervious Area
	9,239		71.54% Impervious Area

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

Summary for Subcatchment 80S:

Runoff = 1.43 cfs @ 12.00 hrs, Volume= 0.087 af, Depth= 4.01"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	9,056	98	Offsite Impervious
	2,284	30	Brush, Good, HSG A
	11,340	84	Weighted Average
	2,284		20.14% Pervious Area
	9,056		79.86% Impervious Area

Summary for Subcatchment 90S:

Runoff = 0.29 cfs @ 12.11 hrs, Volume= 0.029 af, Depth= 0.98"
Routed to Pond 9P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
*	4,183	98	Offsite Impervious area
	11,072	30	Brush, Good, HSG A
	15,255	49	Weighted Average
	11,072		72.58% Pervious Area
	4,183		27.42% Impervious Area

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

Summary for Subcatchment 100:

Runoff = 4.26 cfs @ 12.28 hrs, Volume= 0.450 af, Depth= 3.40"
Routed to Link SP-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
	41,443	74	>75% Grass cover, Good, HSG C
*	16,896	74	OFSITE AREA TO BE UPDATED
*	10,765	98	Offsite Impervious
	69,104	78	Weighted Average
	58,339		84.42% Pervious Area
	10,765		15.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.3	75	0.0930	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.10"
3.2	110	0.0540	0.58		**Shallow Concentrated Flow, B-C** Forest w/Heavy Litter Kv= 2.5 fps
0.6	70	0.0100	1.95	1.95	**Parabolic Channel, C-D** W=3.00' D=0.50' Area=1.0 sf Perim=3.2' n= 0.035
20.1	255	Total			

Summary for Subcatchment 101S:

Runoff = 1.97 cfs @ 12.09 hrs, Volume= 0.142 af, Depth= 3.91"
Routed to Pond UDSF-1 : Filtration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
8,017	98	Paved parking, HSG D
3,766	70	Woods, Good, HSG C
7,218	74	>75% Grass cover, Good, HSG C
19,001	83	Weighted Average
10,984		57.81% Pervious Area
8,017		42.19% Impervious Area

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

Summary for Subcatchment 102S:

Runoff = 0.92 cfs @ 12.09 hrs, Volume= 0.068 af, Depth= 4.43"
Routed to Pond DMH2 : DMH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
4,611	98	Roofs, HSG D
3,387	74	>75% Grass cover, Good, HSG C
7,998	88	Weighted Average
3,387		42.35% Pervious Area
4,611		57.65% Impervious Area

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

Summary for Subcatchment 103S:

Runoff = 2.42 cfs @ 12.08 hrs, Volume= 0.192 af, Depth= 5.33"
Routed to Pond PP-1 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
17,688	98	Paved parking, HSG D
1,185	74	>75% Grass cover, Good, HSG C
18,873	96	Weighted Average
1,185		6.28% Pervious Area
17,688		93.72% Impervious Area

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

Summary for Subcatchment 104S:

Runoff = 2.67 cfs @ 12.08 hrs, Volume= 0.219 af, Depth= 5.56"
Routed to Pond DF-1 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
	18,803	98	Roofs, HSG D
*	1,786	98	Stone
	20,589	98	Weighted Average
	20,589		100.00% Impervious Area

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

Summary for Subcatchment 105S:

Runoff = 1.26 cfs @ 12.08 hrs, Volume= 0.103 af, Depth= 5.56"
Routed to Pond DF-2 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
	8,810	98	Roofs, HSG D
*	896	98	Stone
	9,706	98	Weighted Average
	9,706		100.00% Impervious Area

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

Summary for Subcatchment 106S:

Runoff = 4.71 cfs @ 12.09 hrs, Volume= 0.350 af, Depth= 4.54"
Routed to Pond 1P : R-TANK

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
21,170	98	Paved parking, HSG D
3,223	98	Roofs, HSG D
15,887	74	>75% Grass cover, Good, HSG C
40,280	89	Weighted Average
15,887		39.44% Pervious Area
24,393		60.56% Impervious Area

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

Summary for Subcatchment 107S:

Runoff = 0.65 cfs @ 12.09 hrs, Volume= 0.049 af, Depth= 4.76"
Routed to Pond DF-3 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

	Area (sf)	CN	Description
	3,214	98	Roofs, HSG D
*	480	98	Stone
	1,665	74	>75% Grass cover, Good, HSG C
	5,359	91	Weighted Average
	1,665		31.07% Pervious Area
	3,694		68.93% Impervious Area

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

Summary for Subcatchment 108S:

Runoff = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af, Depth= 2.83"
Routed to Pond DMH6 : DMH-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
2,447	74	>75% Grass cover, Good, HSG C
2,448	70	Woods, Good, HSG C
4,895	72	Weighted Average
4,895		100.00% Pervious Area

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

Summary for Subcatchment 109S:

Runoff = 0.33 cfs @ 12.08 hrs, Volume= 0.026 af, Depth= 5.33"
Routed to Pond PP-2 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
2,326	98	Paved parking, HSG D
250	74	>75% Grass cover, Good, HSG C
2,576	96	Weighted Average
250		9.70% Pervious Area
2,326		90.30% Impervious Area

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

Summary for Subcatchment 110S:

Runoff = 0.64 cfs @ 12.08 hrs, Volume= 0.052 af, Depth= 5.56"
Routed to Pond PP-3 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

Area (sf)	CN	Description
4,907	98	Paved parking, HSG D
4,907		100.00% Impervious Area

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

Summary for Reach 1R:

Inflow Area = 0.894 ac, 54.97% Impervious, Inflow Depth = 4.27" for 25-Yr Storm event
Inflow = 2.26 cfs @ 12.14 hrs, Volume= 0.319 af
Outflow = 2.25 cfs @ 12.16 hrs, Volume= 0.319 af, Atten= 0%, Lag= 1.2 min
Routed to Link SP-2 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Max. Velocity= 1.55 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.43 fps, Avg. Travel Time= 6.7 min

Peak Storage= 251 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.07' , Surface Width= 20.71'
Bank-Full Depth= 0.50' Flow Area= 11.3 sf, Capacity= 60.16 cfs

20.00' x 0.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 5.0 '/' Top Width= 25.00'
Length= 173.0' Slope= 0.0462 '/'
Inlet Invert= 80.00', Outlet Invert= 72.00'

‡

Summary for Pond 1P: R-TANK

Inflow Area = 0.925 ac, 60.56% Impervious, Inflow Depth = 4.54" for 25-Yr Storm event
Inflow = 4.71 cfs @ 12.09 hrs, Volume= 0.350 af
Outflow = 1.35 cfs @ 12.43 hrs, Volume= 0.350 af, Atten= 71%, Lag= 20.4 min
Primary = 1.35 cfs @ 12.43 hrs, Volume= 0.350 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 90.32' @ 12.43 hrs Surf.Area= 3,593 sf Storage= 4,441 cf
Flood Elev= 91.30' Surf.Area= 3,593 sf Storage= 6,075 cf

Plug-Flow detention time= 40.6 min calculated for 0.350 af (100% of inflow)
Center-of-Mass det. time= 40.3 min (829.6 - 789.3)

Volume	Invert	Avail.Storage	Storage Description
#1	85.30'	1,131 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
#2A	88.22'	1,396 cf	**31.56'W x 62.65'L x 4.07'H Field A** 8,049 cf Overall - 4,560 cf Embedded = 3,489 cf x 40.0% Voids
#3A	88.47'	4,332 cf	**ACF R-Tank HD 2** x 525 Inside #2 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 525 Chambers in 21 Rows
		6,859 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
85.30	1,616	0.0	0	0
85.63	1,616	40.0	213	213
85.97	1,616	20.0	110	323
86.47	1,616	20.0	162	485
86.97	1,616	20.0	162	646
87.47	1,616	20.0	162	808
87.97	1,616	20.0	162	970
88.47	1,616	20.0	162	1,131

Device	Routing	Invert	Outlet Devices
#1	Primary	85.10'	**15.0" Round Culvert** L= 126.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.10' / 83.50' S= 0.0127 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	85.30'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	90.60'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 4.0' Crest Height
#4	Device 1	90.00'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.35 cfs @ 12.43 hrs HW=90.32' (Free Discharge)
└**1=Culvert** (Passes 1.35 cfs of 10.00 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.93 cfs @ 10.61 fps)
  ├**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Orifice Controls 0.42 cfs @ 1.93 fps)

Summary for Pond 2P:

Inflow Area = 1.918 ac, 74.25% Impervious, Inflow Depth = 4.20" for 25-Yr Storm event
Inflow = 8.14 cfs @ 12.08 hrs, Volume= 0.672 af
Outflow = 8.14 cfs @ 12.08 hrs, Volume= 0.672 af, Atten= 0%, Lag= 0.0 min
Primary = 8.14 cfs @ 12.08 hrs, Volume= 0.672 af
Routed to Pond CB-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 98.57' @ 12.08 hrs
Flood Elev= 95.86'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.65'	**12.0" Round Culvert** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.65' / 90.00' S= 0.0103 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=8.05 cfs @ 12.08 hrs HW=98.41' (Free Discharge)
1=Culvert (Inlet Controls 8.05 cfs @ 10.24 fps)

Summary for Pond 3P:

Inflow Area = 1.881 ac, 73.74% Impervious, Inflow Depth = 4.18" for 25-Yr Storm event
Inflow = 7.93 cfs @ 12.08 hrs, Volume= 0.655 af
Outflow = 7.93 cfs @ 12.08 hrs, Volume= 0.655 af, Atten= 0%, Lag= 0.0 min
Primary = 7.93 cfs @ 12.08 hrs, Volume= 0.655 af
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 98.29' @ 12.08 hrs
Flood Elev= 95.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.75'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.29' / 90.75' S= -0.0092 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=7.84 cfs @ 12.08 hrs HW=98.14' (Free Discharge)
1=Culvert (Inlet Controls 7.84 cfs @ 9.98 fps)

Summary for Pond 4P:

Inflow Area = 1.473 ac, 68.80% Impervious, Inflow Depth = 3.86" for 25-Yr Storm event
Inflow = 5.67 cfs @ 12.07 hrs, Volume= 0.473 af
Outflow = 5.67 cfs @ 12.07 hrs, Volume= 0.473 af, Atten= 0%, Lag= 0.0 min
Primary = 5.67 cfs @ 12.07 hrs, Volume= 0.473 af
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 94.96' @ 12.07 hrs
Flood Elev= 96.14'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.85'	**12.0" Round Culvert** L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.85' / 90.29' S= 0.0073 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.61 cfs @ 12.07 hrs HW=94.88' (Free Discharge)
1=Culvert (Inlet Controls 5.61 cfs @ 7.14 fps)

Summary for Pond 5P:

Inflow Area = 1.217 ac, 67.88% Impervious, Inflow Depth = 3.69" for 25-Yr Storm event
Inflow = 4.37 cfs @ 12.07 hrs, Volume= 0.374 af
Outflow = 4.37 cfs @ 12.07 hrs, Volume= 0.374 af, Atten= 0%, Lag= 0.0 min
Primary = 4.37 cfs @ 12.07 hrs, Volume= 0.374 af
Routed to Pond 4P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.77' @ 12.07 hrs
Flood Elev= 95.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.13'	**12.0" Round Culvert** L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.13' / 90.85' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	95.65'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.33 cfs @ 12.07 hrs HW=93.74' (Free Discharge)
1=Culvert (Inlet Controls 4.33 cfs @ 5.52 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond 6P:

Inflow Area = 0.397 ac, 86.80% Impervious, Inflow Depth = 4.54" for 25-Yr Storm event
Inflow = 1.95 cfs @ 12.01 hrs, Volume= 0.150 af
Outflow = 1.95 cfs @ 12.01 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min
Primary = 1.95 cfs @ 12.01 hrs, Volume= 0.150 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.75' @ 12.01 hrs
Flood Elev= 96.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.83'	**12.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.83' / 91.23' S= 0.0094 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.91 cfs @ 12.01 hrs HW=92.73' (Free Discharge)
1=Culvert (Inlet Controls 1.91 cfs @ 2.55 fps)

Summary for Pond 7P:

Inflow Area = 0.260 ac, 79.86% Impervious, Inflow Depth = 4.01" for 25-Yr Storm event
Inflow = 1.43 cfs @ 12.00 hrs, Volume= 0.087 af
Outflow = 1.43 cfs @ 12.00 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min
Primary = 1.43 cfs @ 12.00 hrs, Volume= 0.087 af
Routed to Pond 6P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.22' @ 12.00 hrs
Flood Elev= 97.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.43'	**12.0" Round Culvert** L= 105.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.43' / 92.03' S= 0.0038 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.42 cfs @ 12.00 hrs HW=93.21' (Free Discharge)
1=Culvert (Barrel Controls 1.42 cfs @ 2.96 fps)

Summary for Pond 8P:

Inflow Area = 0.647 ac, 47.65% Impervious, Inflow Depth = 2.66" for 25-Yr Storm event
Inflow = 1.81 cfs @ 12.09 hrs, Volume= 0.143 af
Outflow = 1.81 cfs @ 12.09 hrs, Volume= 0.143 af, Atten= 0%, Lag= 0.0 min
Primary = 1.81 cfs @ 12.09 hrs, Volume= 0.143 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.03' @ 12.09 hrs
Flood Elev= 97.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.16'	**12.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.16' / 91.23' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.81 cfs @ 12.09 hrs HW=93.03' (Free Discharge)
1=Culvert (Inlet Controls 1.81 cfs @ 2.50 fps)

Summary for Pond 9P:

Inflow Area = 0.350 ac, 27.42% Impervious, Inflow Depth = 0.98" for 25-Yr Storm event
Inflow = 0.29 cfs @ 12.11 hrs, Volume= 0.029 af
Outflow = 0.29 cfs @ 12.11 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.29 cfs @ 12.11 hrs, Volume= 0.029 af
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.36' @ 12.11 hrs
Flood Elev= 96.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.06'	**12.0" Round Culvert** L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.06' / 92.16' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.29 cfs @ 12.11 hrs HW=93.36' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.29 cfs @ 1.47 fps)

Summary for Pond CB-1:

Inflow Area = 2.373 ac, 78.91% Impervious, Inflow Depth = 4.46" for 25-Yr Storm event
Inflow = 10.70 cfs @ 12.08 hrs, Volume= 0.883 af
Outflow = 10.70 cfs @ 12.08 hrs, Volume= 0.883 af, Atten= 0%, Lag= 0.0 min
Primary = 10.70 cfs @ 12.08 hrs, Volume= 0.883 af
Routed to Link SP-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 95.83' @ 12.08 hrs
Flood Elev= 95.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	89.95'	**15.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 89.95' / 89.50' S= 0.0129 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=10.58 cfs @ 12.08 hrs HW=95.72' (Free Discharge)
└**1=Culvert** (Inlet Controls 10.58 cfs @ 8.62 fps)

Summary for Pond DF-1: Drip Strip

Inflow Area = 0.473 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-Yr Storm event
Inflow = 2.67 cfs @ 12.08 hrs, Volume= 0.219 af
Outflow = 1.22 cfs @ 12.25 hrs, Volume= 0.215 af, Atten= 54%, Lag= 10.0 min
Primary = 1.22 cfs @ 12.25 hrs, Volume= 0.215 af
Routed to Pond DMH4 : DMH-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 85.10' @ 12.25 hrs Surf.Area= 1,786 sf Storage= 1,751 cf

Plug-Flow detention time= 41.9 min calculated for 0.215 af (98% of inflow)
Center-of-Mass det. time= 29.7 min (775.4 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	81.83'	8,485 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.83	1,786	0.0	0	0
82.16	1,786	30.0	177	177
94.00	1,786	30.0	6,344	6,521
94.25	1,786	40.0	179	6,699
94.75	1,786	40.0	357	7,056
95.75	1,786	40.0	714	7,771
96.75	1,786	40.0	714	8,485

Device	Routing	Invert	Outlet Devices
#1	Primary	82.16'	**6.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.16' / 81.00' S= 0.0232 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=1.22 cfs @ 12.25 hrs HW=85.10' (Free Discharge)
1=Culvert (Inlet Controls 1.22 cfs @ 6.23 fps)

Summary for Pond DF-2: Drip Strip

Inflow Area = 0.223 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-Yr Storm event
Inflow = 1.26 cfs @ 12.08 hrs, Volume= 0.103 af
Outflow = 0.85 cfs @ 12.17 hrs, Volume= 0.101 af, Atten= 32%, Lag= 5.2 min
Primary = 0.85 cfs @ 12.17 hrs, Volume= 0.101 af
Routed to Pond DMH7 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 83.71' @ 12.17 hrs Surf.Area= 896 sf Storage= 506 cf

Plug-Flow detention time= 34.5 min calculated for 0.101 af (98% of inflow)
Center-of-Mass det. time= 21.6 min (767.3 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	81.83'	4,257 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.83	896	0.0	0	0
82.16	896	30.0	89	89
94.00	896	30.0	3,183	3,271
94.25	896	40.0	90	3,361
94.75	896	40.0	179	3,540
95.75	896	40.0	358	3,898
96.75	896	40.0	358	4,257

Device	Routing	Invert	Outlet Devices
#1	Primary	82.16'	**6.0" Round Culvert** L= 95.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.16' / 80.00' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.85 cfs @ 12.17 hrs HW=83.71' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.85 cfs @ 4.33 fps)

Summary for Pond DF-3: Drip Strip

Inflow Area = 0.123 ac, 68.93% Impervious, Inflow Depth = 4.76" for 25-Yr Storm event
Inflow = 0.65 cfs @ 12.09 hrs, Volume= 0.049 af
Outflow = 0.43 cfs @ 12.18 hrs, Volume= 0.049 af, Atten= 34%, Lag= 5.4 min
Primary = 0.43 cfs @ 12.18 hrs, Volume= 0.049 af
Routed to Pond DMH6 : DMH-6

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.91' @ 12.18 hrs Surf.Area= 1,786 sf Storage= 312 cf

Plug-Flow detention time= 28.1 min calculated for 0.049 af (100% of inflow)
Center-of-Mass det. time= 27.7 min (809.8 - 782.1)

Volume	Invert	Avail.Storage	Storage Description
#1	93.33'	2,859 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
93.33	1,786	0.0	0	0
93.66	1,786	30.0	177	177
94.00	1,786	30.0	182	359
95.00	1,786	40.0	714	1,073
95.50	1,786	40.0	357	1,431
96.50	1,786	40.0	714	2,145
97.50	1,786	40.0	714	2,859

Device	Routing	Invert	Outlet Devices
#1	Primary	93.33'	**6.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.33' / 92.00' S= 0.0266 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.43 cfs @ 12.18 hrs HW=93.91' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.43 cfs @ 2.19 fps)

Summary for Pond DMH2: DMH-2

Inflow Area = 0.355 ac, 76.51% Impervious, Inflow Depth = 4.94" for 25-Yr Storm event
Inflow = 1.74 cfs @ 12.09 hrs, Volume= 0.146 af
Outflow = 1.74 cfs @ 12.09 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.0 min
Primary = 1.74 cfs @ 12.09 hrs, Volume= 0.146 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 86.68' @ 12.09 hrs
Flood Elev= 94.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	86.00'	**18.0" Round Culvert** L= 150.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 86.00' / 83.50' S= 0.0167 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.73 cfs @ 12.09 hrs HW=86.68' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 1.73 cfs @ 2.22 fps)

Summary for Pond DMH3: DMH-3

Inflow Area = 1.713 ac, 72.25% Impervious, Inflow Depth = 4.82" for 25-Yr Storm event
Inflow = 2.99 cfs @ 12.10 hrs, Volume= 0.689 af
Outflow = 2.99 cfs @ 12.10 hrs, Volume= 0.689 af, Atten= 0%, Lag= 0.0 min
Primary = 2.99 cfs @ 12.10 hrs, Volume= 0.689 af
Routed to Pond DMH4 : DMH-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 82.46' @ 12.10 hrs
Flood Elev= 96.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	81.51'	**18.0" Round Culvert** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.51' / 81.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.97 cfs @ 12.10 hrs HW=82.46' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 2.97 cfs @ 3.59 fps)

Summary for Pond DMH4: DMH-4

Inflow Area = 2.186 ac, 78.25% Impervious, Inflow Depth = 4.96" for 25-Yr Storm event
Inflow = 4.07 cfs @ 12.12 hrs, Volume= 0.904 af
Outflow = 4.07 cfs @ 12.12 hrs, Volume= 0.904 af, Atten= 0%, Lag= 0.0 min
Primary = 4.07 cfs @ 12.12 hrs, Volume= 0.904 af
Routed to Pond DMH5 : DMH-5

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 82.13' @ 12.12 hrs
Flood Elev= 96.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	81.00'	**18.0" Round Culvert** L= 213.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.00' / 79.90' S= 0.0052 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=4.06 cfs @ 12.12 hrs HW=82.13' (Free Discharge)
└**1=Culvert** (Inlet Controls 4.06 cfs @ 2.85 fps)

Summary for Pond DMH5: DMH-5

Inflow Area = 2.186 ac, 78.25% Impervious, Inflow Depth = 4.96" for 25-Yr Storm event
Inflow = 4.07 cfs @ 12.12 hrs, Volume= 0.904 af
Outflow = 4.07 cfs @ 12.12 hrs, Volume= 0.904 af, Atten= 0%, Lag= 0.0 min
Primary = 4.07 cfs @ 12.12 hrs, Volume= 0.904 af
Routed to Link SP-2 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 80.93' @ 12.12 hrs
Flood Elev= 96.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	79.80'	**18.0" Round Culvert** L= 55.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 79.80' / 78.00' S= 0.0327 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=4.06 cfs @ 12.12 hrs HW=80.93' (Free Discharge)
└**1=Culvert** (Inlet Controls 4.06 cfs @ 2.85 fps)

Summary for Pond DMH6: DMH-6

Inflow Area = 0.235 ac, 36.02% Impervious, Inflow Depth = 3.84" for 25-Yr Storm event
Inflow = 0.76 cfs @ 12.11 hrs, Volume= 0.075 af
Outflow = 0.76 cfs @ 12.11 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min
Primary = 0.76 cfs @ 12.11 hrs, Volume= 0.075 af
Routed to Pond DMH7 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 90.46' @ 12.11 hrs
Flood Elev= 95.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.00'	**15.0" Round Culvert** L= 163.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.00' / 80.85' S= 0.0561 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.75 cfs @ 12.11 hrs HW=90.46' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.75 cfs @ 1.83 fps)

Summary for Pond DMH7:

Inflow Area = 0.458 ac, 67.13% Impervious, Inflow Depth = 4.62" for 25-Yr Storm event
Inflow = 1.58 cfs @ 12.13 hrs, Volume= 0.177 af
Outflow = 1.58 cfs @ 12.13 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min
Primary = 1.58 cfs @ 12.13 hrs, Volume= 0.177 af
Routed to Pond DMH8 : DMH-8

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 81.43' @ 12.13 hrs
Flood Elev= 90.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	80.75'	**18.0" Round Culvert** L= 49.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.75' / 80.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.57 cfs @ 12.13 hrs HW=81.43' (Free Discharge)
1=Culvert (Barrel Controls 1.57 cfs @ 2.99 fps)

Summary for Pond DMH8: DMH-8

Inflow Area = 0.458 ac, 67.13% Impervious, Inflow Depth = 4.62" for 25-Yr Storm event
Inflow = 1.58 cfs @ 12.13 hrs, Volume= 0.177 af
Outflow = 1.58 cfs @ 12.13 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min
Primary = 1.58 cfs @ 12.13 hrs, Volume= 0.177 af
Routed to Reach 1R :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 81.07' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	80.40'	**18.0" Round Culvert** L= 93.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.40' / 80.00' S= 0.0043 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.57 cfs @ 12.13 hrs HW=81.07' (Free Discharge)
1=Culvert (Barrel Controls 1.57 cfs @ 3.01 fps)

Summary for Pond PP-1: Pervious Pavers

Inflow Area = 0.433 ac, 93.72% Impervious, Inflow Depth = 5.33" for 25-Yr Storm event
Inflow = 2.42 cfs @ 12.08 hrs, Volume= 0.192 af
Outflow = 0.53 cfs @ 12.49 hrs, Volume= 0.192 af, Atten= 78%, Lag= 24.2 min
Primary = 0.53 cfs @ 12.49 hrs, Volume= 0.192 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 92.60' @ 12.49 hrs Surf.Area= 3,978 sf Storage= 2,812 cf
Flood Elev= 95.00' Surf.Area= 3,978 sf Storage= 7,630 cf

Plug-Flow detention time= 74.8 min calculated for 0.192 af (100% of inflow)
Center-of-Mass det. time= 75.2 min (834.2 - 759.0)

Volume	Invert	Avail.Storage	Storage Description
#1	90.83'	7,630 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.83	3,978	0.0	0	0
91.16	3,978	40.0	525	525
91.50	3,978	40.0	541	1,066
92.00	3,978	40.0	796	1,862
93.00	3,978	40.0	1,591	3,453
94.00	3,978	40.0	1,591	5,044
94.50	3,978	30.0	597	5,641
95.00	3,978	100.0	1,989	7,630

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.53 cfs @ 12.49 hrs HW=92.60' (Free Discharge)
└─**1=Culvert** (Passes 0.53 cfs of 3.36 cfs potential flow)
└─**2=Orifice/Grate** (Orifice Controls 0.53 cfs @ 6.09 fps)

Summary for Pond PP-2: Pervious Pavers

Inflow Area = 0.059 ac, 90.30% Impervious, Inflow Depth = 5.33" for 25-Yr Storm event
Inflow = 0.33 cfs @ 12.08 hrs, Volume= 0.026 af
Outflow = 0.33 cfs @ 12.09 hrs, Volume= 0.026 af, Atten= 1%, Lag= 0.6 min
Primary = 0.33 cfs @ 12.09 hrs, Volume= 0.026 af
Routed to Pond DMH2 : DMH-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.86' @ 12.09 hrs Surf.Area= 1,023 sf Storage= 11 cf
Flood Elev= 97.50' Surf.Area= 1,023 sf Storage= 2,116 cf

Plug-Flow detention time= 0.6 min calculated for 0.026 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (759.5 - 759.0)

Volume	Invert	Avail.Storage	Storage Description
#1	92.83'	2,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.83	1,023	0.0	0	0
93.33	1,023	40.0	205	205
94.00	1,023	40.0	274	479
95.00	1,023	40.0	409	888
95.50	1,023	40.0	205	1,093
96.00	1,023	40.0	205	1,297
97.00	1,023	30.0	307	1,604
97.50	1,023	100.0	512	2,116

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.57 cfs @ 12.09 hrs HW=92.86' (Free Discharge)
↑—**1=Culvert** (Passes 0.57 cfs of 3.69 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.57 cfs @ 6.57 fps)

Summary for Pond PP-3: Pervious Pavers

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-Yr Storm event
Inflow = 0.64 cfs @ 12.08 hrs, Volume= 0.052 af
Outflow = 0.50 cfs @ 12.15 hrs, Volume= 0.052 af, Atten= 22%, Lag= 3.8 min
Primary = 0.50 cfs @ 12.15 hrs, Volume= 0.052 af
Routed to Pond DMH2 : DMH-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.40' @ 12.15 hrs Surf.Area= 3,446 sf Storage= 90 cf
Flood Elev= 96.50' Surf.Area= 3,446 sf Storage= 6,437 cf

Plug-Flow detention time= 2.0 min calculated for 0.052 af (100% of inflow)
Center-of-Mass det. time= 2.0 min (747.7 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	92.33'	6,437 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.33	3,446	0.0	0	0
92.83	3,446	40.0	689	689
93.00	3,446	40.0	234	924
94.00	3,446	40.0	1,378	2,302
94.50	3,446	40.0	689	2,991
95.00	3,446	40.0	689	3,680
96.00	3,446	30.0	1,034	4,714
96.50	3,446	100.0	1,723	6,437

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.50 cfs @ 12.15 hrs HW=92.40' (Free Discharge)
↑**1=Culvert** (Passes 0.50 cfs of 3.08 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 0.50 cfs @ 5.69 fps)

Summary for Pond UDSF-1: Filtration Basin

Inflow Area = 0.436 ac, 42.19% Impervious, Inflow Depth = 3.91" for 25-Yr Storm event
Inflow = 1.97 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 0.71 cfs @ 12.36 hrs, Volume= 0.142 af, Atten= 64%, Lag= 16.2 min
Primary = 0.71 cfs @ 12.36 hrs, Volume= 0.142 af
Routed to Reach 1R :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 83.39' @ 12.36 hrs Surf.Area= 967 sf Storage= 1,230 cf

Plug-Flow detention time= 16.7 min calculated for 0.142 af (100% of inflow)
Center-of-Mass det. time= 16.8 min (824.3 - 807.6)

Volume	Invert	Avail.Storage	Storage Description
#1	80.33'	3,282 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
80.33	691	0.0	0	0
80.67	691	40.0	94	94
81.00	691	40.0	91	185
81.50	691	30.0	104	289
82.00	691	30.0	104	392
82.50	691	30.0	104	496
83.00	835	100.0	382	878
84.00	1,172	100.0	1,004	1,881
85.00	1,629	100.0	1,401	3,282

Device	Routing	Invert	Outlet Devices
#1	Primary	80.33'	**12.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.33' / 80.00' S= 0.0132 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	80.33'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	84.50'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	84.50'	**10.0' long + 3.0 '/' SideZ x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65
2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.71 cfs @ 12.36 hrs HW=83.39' (Free Discharge)
└**1=Culvert** (Passes 0.71 cfs of 6.05 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.71 cfs @ 8.19 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=80.33' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link SP-1:

Inflow Area = 2.373 ac, 78.91% Impervious, Inflow Depth = 4.46" for 25-Yr Storm event
Inflow = 10.70 cfs @ 12.08 hrs, Volume= 0.883 af
Primary = 10.70 cfs @ 12.08 hrs, Volume= 0.883 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Link SP-2:

Inflow Area = 4.667 ac, 52.49% Impervious, Inflow Depth = 4.30" for 25-Yr Storm event
Inflow = 10.08 cfs @ 12.25 hrs, Volume= 1.672 af
Primary = 10.08 cfs @ 12.25 hrs, Volume= 1.672 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Subcatchment 10S:

Runoff = 3.60 cfs @ 12.08 hrs, Volume= 0.298 af, Depth= 7.86"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	10,475	98	Offsite impervious
*	9,057	98	Existing Impervious
	285	74	>75% Grass cover, Good, HSG C
	19,817	98	Weighted Average
	285		1.44% Pervious Area
	19,532		98.56% Impervious Area

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

Summary for Subcatchment 20S:

Runoff = 0.30 cfs @ 12.08 hrs, Volume= 0.025 af, Depth= 7.86"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	784	98	Existing Impervious
*	853	98	Offsite Impervious
	1,637	98	Weighted Average
	1,637		100.00% Impervious Area

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

Summary for Subcatchment 30S:

Runoff = 3.20 cfs @ 12.08 hrs, Volume= 0.259 af, Depth= 7.62"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	13,779	98	Offsite Impervious
*	2,496	98	Impervious
*	746	74	Offsite Landscaped
	754	74	>75% Grass cover, Good, HSG C
	17,775	96	Weighted Average
	1,500		8.44% Pervious Area
	16,275		91.56% Impervious Area

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

Summary for Subcatchment 40S:

Runoff = 1.92 cfs @ 12.09 hrs, Volume= 0.147 af, Depth= 6.90"
Routed to Pond 4P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	7,341	98	Offsite Impervious
*	806	98	Existing Impervious
	1,646	74	>75% Grass cover, Good, HSG C
	1,338	65	Brush, Good, HSG C
	11,131	90	Weighted Average
	2,984		26.81% Pervious Area
	8,147		73.19% Impervious Area

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

Summary for Subcatchment 50S:

Runoff = 1.37 cfs @ 12.08 hrs, Volume= 0.113 af, Depth= 7.86"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	5,773	98	Offsite Impervious
*	1,775	98	Existing Impervious
	7,548	98	Weighted Average
	7,548		100.00% Impervious Area

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

Summary for Subcatchment 60S:

Runoff = 1.08 cfs @ 12.08 hrs, Volume= 0.090 af, Depth= 7.86"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	3,268	98	Offsite Impervious
*	2,700	98	Existing Impervious
	5,968	98	Weighted Average
	5,968		100.00% Impervious Area

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

Summary for Subcatchment 70S:

Runoff = 2.23 cfs @ 12.09 hrs, Volume= 0.171 af, Depth= 6.90"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	9,239	98	Offsite Impervious
	2,635	74	>75% Grass cover, Good, HSG C
	1,040	65	Brush, Good, HSG C
	12,914	90	Weighted Average
	3,675		28.46% Pervious Area
	9,239		71.54% Impervious Area

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

Summary for Subcatchment 80S:

Runoff = 2.17 cfs @ 12.00 hrs, Volume= 0.134 af, Depth= 6.19"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	9,056	98	Offsite Impervious
	2,284	30	Brush, Good, HSG A
	11,340	84	Weighted Average
	2,284		20.14% Pervious Area
	9,056		79.86% Impervious Area

Summary for Subcatchment 90S:

Runoff = 0.82 cfs @ 12.10 hrs, Volume= 0.064 af, Depth= 2.21"
Routed to Pond 9P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
*	4,183	98	Offsite Impervious area
	11,072	30	Brush, Good, HSG A
	15,255	49	Weighted Average
	11,072		72.58% Pervious Area
	4,183		27.42% Impervious Area

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

Summary for Subcatchment 100:

Runoff = 6.81 cfs @ 12.27 hrs, Volume= 0.725 af, Depth= 5.48"
Routed to Link SP-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
	41,443	74	>75% Grass cover, Good, HSG C
*	16,896	74	OFSITE AREA TO BE UPDATED
*	10,765	98	Offsite Impervious
	69,104	78	Weighted Average
	58,339		84.42% Pervious Area
	10,765		15.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.3	75	0.0930	0.08		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 3.10"
3.2	110	0.0540	0.58		**Shallow Concentrated Flow, B-C** Forest w/Heavy Litter Kv= 2.5 fps
0.6	70	0.0100	1.95	1.95	**Parabolic Channel, C-D** W=3.00' D=0.50' Area=1.0 sf Perim=3.2' n= 0.035
20.1	255	Total			

Summary for Subcatchment 101S:

Runoff = 3.00 cfs @ 12.09 hrs, Volume= 0.221 af, Depth= 6.07"
Routed to Pond UDSF-1 : Filtration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

Area (sf)	CN	Description
8,017	98	Paved parking, HSG D
3,766	70	Woods, Good, HSG C
7,218	74	>75% Grass cover, Good, HSG C
19,001	83	Weighted Average
10,984		57.81% Pervious Area
8,017		42.19% Impervious Area

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

Summary for Subcatchment 102S:

Runoff = 1.35 cfs @ 12.09 hrs, Volume= 0.102 af, Depth= 6.67"
Routed to Pond DMH2 : DMH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

Area (sf)	CN	Description
4,611	98	Roofs, HSG D
3,387	74	>75% Grass cover, Good, HSG C
7,998	88	Weighted Average
3,387		42.35% Pervious Area
4,611		57.65% Impervious Area

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

Summary for Subcatchment 103S:

Runoff = 3.40 cfs @ 12.08 hrs, Volume= 0.275 af, Depth= 7.62"
Routed to Pond PP-1 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

Area (sf)	CN	Description
17,688	98	Paved parking, HSG D
1,185	74	>75% Grass cover, Good, HSG C
18,873	96	Weighted Average
1,185		6.28% Pervious Area
17,688		93.72% Impervious Area

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

Summary for Subcatchment 104S:

Runoff = 3.74 cfs @ 12.08 hrs, Volume= 0.310 af, Depth= 7.86"
Routed to Pond DF-1 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
	18,803	98	Roofs, HSG D
*	1,786	98	Stone
	20,589	98	Weighted Average
	20,589		100.00% Impervious Area

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

Summary for Subcatchment 105S:

Runoff = 1.76 cfs @ 12.08 hrs, Volume= 0.146 af, Depth= 7.86"
Routed to Pond DF-2 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
	8,810	98	Roofs, HSG D
*	896	98	Stone
	9,706	98	Weighted Average
	9,706		100.00% Impervious Area

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

Summary for Subcatchment 106S:

Runoff = 6.88 cfs @ 12.09 hrs, Volume= 0.523 af, Depth= 6.78"
Routed to Pond 1P : R-TANK

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
	21,170	98	Paved parking, HSG D
	3,223	98	Roofs, HSG D
	15,887	74	>75% Grass cover, Good, HSG C
	40,280	89	Weighted Average
	15,887		39.44% Pervious Area
	24,393		60.56% Impervious Area

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

Summary for Subcatchment 107S:

Runoff = 0.93 cfs @ 12.08 hrs, Volume= 0.072 af, Depth= 7.02"
Routed to Pond DF-3 : Drip Strip

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

	Area (sf)	CN	Description
	3,214	98	Roofs, HSG D
*	480	98	Stone
	1,665	74	>75% Grass cover, Good, HSG C
	5,359	91	Weighted Average
	1,665		31.07% Pervious Area
	3,694		68.93% Impervious Area

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

Summary for Subcatchment 108S:

Runoff = 0.63 cfs @ 12.09 hrs, Volume= 0.045 af, Depth= 4.78"
Routed to Pond DMH6 : DMH-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

Area (sf)	CN	Description
2,447	74	>75% Grass cover, Good, HSG C
2,448	70	Woods, Good, HSG C
4,895	72	Weighted Average
4,895		100.00% Pervious Area

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

Summary for Subcatchment 109S:

Runoff = 0.46 cfs @ 12.08 hrs, Volume= 0.038 af, Depth= 7.62"
Routed to Pond PP-2 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

Area (sf)	CN	Description
2,326	98	Paved parking, HSG D
250	74	>75% Grass cover, Good, HSG C
2,576	96	Weighted Average
250		9.70% Pervious Area
2,326		90.30% Impervious Area

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

Summary for Subcatchment 110S:

Runoff = 0.89 cfs @ 12.08 hrs, Volume= 0.074 af, Depth= 7.86"
Routed to Pond PP-3 : Pervious Pavers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Yr Storm Rainfall=8.10"

Area (sf)	CN	Description
4,907	98	Paved parking, HSG D
4,907		100.00% Impervious Area

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

Summary for Reach 1R:

Inflow Area = 0.894 ac, 54.97% Impervious, Inflow Depth = 6.46" for 100-Yr Storm event
Inflow = 2.92 cfs @ 12.13 hrs, Volume= 0.481 af
Outflow = 2.91 cfs @ 12.16 hrs, Volume= 0.481 af, Atten= 0%, Lag= 1.4 min
Routed to Link SP-2 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Max. Velocity= 1.71 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 0.48 fps, Avg. Travel Time= 6.0 min

Peak Storage= 293 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.08' , Surface Width= 20.83'
Bank-Full Depth= 0.50' Flow Area= 11.3 sf, Capacity= 60.16 cfs

20.00' x 0.50' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 5.0 '/' Top Width= 25.00'
Length= 173.0' Slope= 0.0462 '/'
Inlet Invert= 80.00', Outlet Invert= 72.00'

Summary for Pond 1P: R-TANK

Inflow Area = 0.925 ac, 60.56% Impervious, Inflow Depth = 6.78" for 100-Yr Storm event
Inflow = 6.88 cfs @ 12.09 hrs, Volume= 0.523 af
Outflow = 4.42 cfs @ 12.19 hrs, Volume= 0.523 af, Atten= 36%, Lag= 6.1 min
Primary = 4.42 cfs @ 12.19 hrs, Volume= 0.523 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 90.82' @ 12.19 hrs Surf.Area= 3,593 sf Storage= 5,273 cf
Flood Elev= 91.30' Surf.Area= 3,593 sf Storage= 6,075 cf

Plug-Flow detention time= 35.6 min calculated for 0.523 af (100% of inflow)
Center-of-Mass det. time= 35.7 min (814.4 - 778.7)

Volume	Invert	Avail.Storage	Storage Description
#1	85.30'	1,131 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
#2A	88.22'	1,396 cf	**31.56'W x 62.65'L x 4.07'H Field A** 8,049 cf Overall - 4,560 cf Embedded = 3,489 cf x 40.0% Voids
#3A	88.47'	4,332 cf	**ACF R-Tank HD 2** x 525 Inside #2 Inside= 15.7"W x 33.9"H => 3.52 sf x 2.35'L = 8.3 cf Outside= 15.7"W x 33.9"H => 3.70 sf x 2.35'L = 8.7 cf 525 Chambers in 21 Rows
		6,859 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
85.30	1,616	0.0	0	0
85.63	1,616	40.0	213	213
85.97	1,616	20.0	110	323
86.47	1,616	20.0	162	485
86.97	1,616	20.0	162	646
87.47	1,616	20.0	162	808
87.97	1,616	20.0	162	970
88.47	1,616	20.0	162	1,131

Device	Routing	Invert	Outlet Devices
#1	Primary	85.10'	**15.0" Round Culvert** L= 126.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 85.10' / 83.50' S= 0.0127 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	85.30'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	90.60'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 4.0' Crest Height
#4	Device 1	90.00'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.35 cfs @ 12.19 hrs HW=90.81' (Free Discharge)
└**1=Culvert** (Passes 4.35 cfs of 10.52 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.97 cfs @ 11.13 fps)
  ├**3=Sharp-Crested Rectangular Weir** (Weir Controls 1.28 cfs @ 1.52 fps)
  └**4=Orifice/Grate** (Orifice Controls 2.10 cfs @ 3.07 fps)

Summary for Pond 2P:

Inflow Area = 1.918 ac, 74.25% Impervious, Inflow Depth = 6.28" for 100-Yr Storm event
Inflow = 12.05 cfs @ 12.08 hrs, Volume= 1.003 af
Outflow = 12.05 cfs @ 12.08 hrs, Volume= 1.003 af, Atten= 0%, Lag= 0.0 min
Primary = 12.05 cfs @ 12.08 hrs, Volume= 1.003 af
Routed to Pond CB-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 107.44' @ 12.08 hrs
Flood Elev= 95.86'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.65'	**12.0" Round Culvert** L= 63.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.65' / 90.00' S= 0.0103 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=11.92 cfs @ 12.08 hrs HW=107.08' (Free Discharge)
└**1=Culvert** (Inlet Controls 11.92 cfs @ 15.17 fps)

Summary for Pond 3P:

Inflow Area = 1.881 ac, 73.74% Impervious, Inflow Depth = 6.24" for 100-Yr Storm event
Inflow = 11.76 cfs @ 12.08 hrs, Volume= 0.979 af
Outflow = 11.76 cfs @ 12.08 hrs, Volume= 0.979 af, Atten= 0%, Lag= 0.0 min
Primary = 11.76 cfs @ 12.08 hrs, Volume= 0.979 af
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 106.75' @ 12.08 hrs
Flood Elev= 95.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.75'	**12.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.29' / 90.75' S= -0.0092 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=11.62 cfs @ 12.08 hrs HW=106.41' (Free Discharge)
└**1=Culvert** (Inlet Controls 11.62 cfs @ 14.80 fps)

Summary for Pond 4P:

Inflow Area = 1.473 ac, 68.80% Impervious, Inflow Depth = 5.86" for 100-Yr Storm event
Inflow = 8.59 cfs @ 12.07 hrs, Volume= 0.719 af
Outflow = 8.59 cfs @ 12.07 hrs, Volume= 0.719 af, Atten= 0%, Lag= 0.0 min
Primary = 8.59 cfs @ 12.07 hrs, Volume= 0.719 af
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 99.62' @ 12.07 hrs
Flood Elev= 96.14'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.85'	**12.0" Round Culvert** L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.85' / 90.29' S= 0.0073 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=8.49 cfs @ 12.07 hrs HW=99.43' (Free Discharge)
└**1=Culvert** (Inlet Controls 8.49 cfs @ 10.81 fps)

Summary for Pond 5P:

Inflow Area = 1.217 ac, 67.88% Impervious, Inflow Depth = 5.64" for 100-Yr Storm event
Inflow = 6.70 cfs @ 12.07 hrs, Volume= 0.572 af
Outflow = 6.70 cfs @ 12.07 hrs, Volume= 0.572 af, Atten= 0%, Lag= 0.0 min
Primary = 6.70 cfs @ 12.07 hrs, Volume= 0.572 af
Routed to Pond 4P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 95.73' @ 12.07 hrs
Flood Elev= 95.65'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.13'	**12.0" Round Culvert** L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.13' / 90.85' S= 0.0040 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Primary	95.65'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.62 cfs @ 12.07 hrs HW=95.73' (Free Discharge)
└**1=Culvert** (Inlet Controls 6.04 cfs @ 7.70 fps)
└**2=Orifice/Grate** (Weir Controls 0.58 cfs @ 0.92 fps)

Summary for Pond 6P:

Inflow Area = 0.397 ac, 86.80% Impervious, Inflow Depth = 6.77" for 100-Yr Storm event
Inflow = 2.88 cfs @ 12.01 hrs, Volume= 0.224 af
Outflow = 2.88 cfs @ 12.01 hrs, Volume= 0.224 af, Atten= 0%, Lag= 0.0 min
Primary = 2.88 cfs @ 12.01 hrs, Volume= 0.224 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.26' @ 12.01 hrs
Flood Elev= 96.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	91.83'	**12.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 91.83' / 91.23' S= 0.0094 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.82 cfs @ 12.01 hrs HW=93.22' (Free Discharge)
└**1=Culvert** (Inlet Controls 2.82 cfs @ 3.59 fps)

Summary for Pond 7P:

Inflow Area = 0.260 ac, 79.86% Impervious, Inflow Depth = 6.19" for 100-Yr Storm event
Inflow = 2.17 cfs @ 12.00 hrs, Volume= 0.134 af
Outflow = 2.17 cfs @ 12.00 hrs, Volume= 0.134 af, Atten= 0%, Lag= 0.0 min
Primary = 2.17 cfs @ 12.00 hrs, Volume= 0.134 af
Routed to Pond 6P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.49' @ 12.00 hrs
Flood Elev= 97.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.43'	**12.0" Round Culvert** L= 105.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.43' / 92.03' S= 0.0038 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.16 cfs @ 12.00 hrs HW=93.48' (Free Discharge)
1=Culvert (Barrel Controls 2.16 cfs @ 3.24 fps)

Summary for Pond 8P:

Inflow Area = 0.647 ac, 47.65% Impervious, Inflow Depth = 4.36" for 100-Yr Storm event
Inflow = 3.04 cfs @ 12.09 hrs, Volume= 0.235 af
Outflow = 3.04 cfs @ 12.09 hrs, Volume= 0.235 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.09 hrs, Volume= 0.235 af
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.70' @ 12.09 hrs
Flood Elev= 97.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	92.16'	**12.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 92.16' / 91.23' S= 0.0109 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.03 cfs @ 12.09 hrs HW=93.69' (Free Discharge)
1=Culvert (Inlet Controls 3.03 cfs @ 3.86 fps)

Summary for Pond 9P:

Inflow Area = 0.350 ac, 27.42% Impervious, Inflow Depth = 2.21" for 100-Yr Storm event
Inflow = 0.82 cfs @ 12.10 hrs, Volume= 0.064 af
Outflow = 0.82 cfs @ 12.10 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 12.10 hrs, Volume= 0.064 af
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 93.59' @ 12.10 hrs
Flood Elev= 96.37'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.06'	**12.0" Round Culvert** L= 72.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.06' / 92.16' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.81 cfs @ 12.10 hrs HW=93.58' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.81 cfs @ 1.94 fps)

Summary for Pond CB-1:

Inflow Area = 2.373 ac, 78.91% Impervious, Inflow Depth = 6.58" for 100-Yr Storm event
Inflow = 15.64 cfs @ 12.08 hrs, Volume= 1.301 af
Outflow = 15.64 cfs @ 12.08 hrs, Volume= 1.301 af, Atten= 0%, Lag= 0.0 min
Primary = 15.64 cfs @ 12.08 hrs, Volume= 1.301 af
Routed to Link SP-1 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 101.81' @ 12.08 hrs
Flood Elev= 95.55'

Device	Routing	Invert	Outlet Devices
#1	Primary	89.95'	**15.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 89.95' / 89.50' S= 0.0129 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=15.46 cfs @ 12.08 hrs HW=101.56' (Free Discharge)
└**1=Culvert** (Inlet Controls 15.46 cfs @ 12.60 fps)

Summary for Pond DF-1: Drip Strip

Inflow Area = 0.473 ac,100.00% Impervious, Inflow Depth = 7.86" for 100-Yr Storm event
Inflow = 3.74 cfs @ 12.08 hrs, Volume= 0.310 af
Outflow = 1.54 cfs @ 12.29 hrs, Volume= 0.306 af, Atten= 59%, Lag= 12.1 min
Primary = 1.54 cfs @ 12.29 hrs, Volume= 0.306 af
Routed to Pond DMH4 : DMH-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 86.68' @ 12.29 hrs Surf.Area= 1,786 sf Storage= 2,599 cf

Plug-Flow detention time= 36.1 min calculated for 0.305 af (99% of inflow)
Center-of-Mass det. time= 27.4 min (768.5 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1	81.83'	8,485 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.83	1,786	0.0	0	0
82.16	1,786	30.0	177	177
94.00	1,786	30.0	6,344	6,521
94.25	1,786	40.0	179	6,699
94.75	1,786	40.0	357	7,056
95.75	1,786	40.0	714	7,771
96.75	1,786	40.0	714	8,485

Device	Routing	Invert	Outlet Devices
#1	Primary	82.16'	**6.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.16' / 81.00' S= 0.0232 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=1.54 cfs @ 12.29 hrs HW=86.68' (Free Discharge)
1=Culvert (Inlet Controls 1.54 cfs @ 7.85 fps)

Summary for Pond DF-2: Drip Strip

Inflow Area = 0.223 ac,100.00% Impervious, Inflow Depth = 7.86" for 100-Yr Storm event
Inflow = 1.76 cfs @ 12.08 hrs, Volume= 0.146 af
Outflow = 1.10 cfs @ 12.18 hrs, Volume= 0.144 af, Atten= 38%, Lag= 6.0 min
Primary = 1.10 cfs @ 12.18 hrs, Volume= 0.144 af
Routed to Pond DMH7 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 84.59' @ 12.18 hrs Surf.Area= 896 sf Storage= 741 cf

Plug-Flow detention time= 28.0 min calculated for 0.144 af (99% of inflow)
Center-of-Mass det. time= 18.6 min (759.7 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1	81.83'	4,257 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
81.83	896	0.0	0	0
82.16	896	30.0	89	89
94.00	896	30.0	3,183	3,271
94.25	896	40.0	90	3,361
94.75	896	40.0	179	3,540
95.75	896	40.0	358	3,898
96.75	896	40.0	358	4,257

Device	Routing	Invert	Outlet Devices
#1	Primary	82.16'	**6.0" Round Culvert** L= 95.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.16' / 80.00' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=1.10 cfs @ 12.18 hrs HW=84.58' (Free Discharge)
1=Culvert (Inlet Controls 1.10 cfs @ 5.60 fps)

Summary for Pond DF-3: Drip Strip

Inflow Area = 0.123 ac, 68.93% Impervious, Inflow Depth = 7.02" for 100-Yr Storm event
Inflow = 0.93 cfs @ 12.08 hrs, Volume= 0.072 af
Outflow = 0.56 cfs @ 12.19 hrs, Volume= 0.072 af, Atten= 41%, Lag= 6.5 min
Primary = 0.56 cfs @ 12.19 hrs, Volume= 0.072 af
Routed to Pond DMH6 : DMH-6

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 94.13' @ 12.19 hrs Surf.Area= 1,786 sf Storage= 454 cf

Plug-Flow detention time= 24.4 min calculated for 0.072 af (100% of inflow)
Center-of-Mass det. time= 24.5 min (796.8 - 772.2)

Volume	Invert	Avail.Storage	Storage Description
#1	93.33'	2,859 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
93.33	1,786	0.0	0	0
93.66	1,786	30.0	177	177
94.00	1,786	30.0	182	359
95.00	1,786	40.0	714	1,073
95.50	1,786	40.0	357	1,431
96.50	1,786	40.0	714	2,145
97.50	1,786	40.0	714	2,859

Device	Routing	Invert	Outlet Devices
#1	Primary	93.33'	**6.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.33' / 92.00' S= 0.0266 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.55 cfs @ 12.19 hrs HW=94.13' (Free Discharge)
1=Culvert (Inlet Controls 0.55 cfs @ 2.82 fps)

Summary for Pond DMH2: DMH-2

Inflow Area = 0.355 ac, 76.51% Impervious, Inflow Depth = 7.20" for 100-Yr Storm event
Inflow = 2.31 cfs @ 12.09 hrs, Volume= 0.213 af
Outflow = 2.31 cfs @ 12.09 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.0 min
Primary = 2.31 cfs @ 12.09 hrs, Volume= 0.213 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 86.80' @ 12.09 hrs
Flood Elev= 94.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	86.00'	**18.0" Round Culvert** L= 150.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 86.00' / 83.50' S= 0.0167 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.31 cfs @ 12.09 hrs HW=86.80' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 2.31 cfs @ 2.40 fps)

Summary for Pond DMH3: DMH-3

Inflow Area = 1.713 ac, 72.25% Impervious, Inflow Depth = 7.08" for 100-Yr Storm event
Inflow = 6.68 cfs @ 12.18 hrs, Volume= 1.011 af
Outflow = 6.68 cfs @ 12.18 hrs, Volume= 1.011 af, Atten= 0%, Lag= 0.0 min
Primary = 6.68 cfs @ 12.18 hrs, Volume= 1.011 af
Routed to Pond DMH4 : DMH-4

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 83.25' @ 12.18 hrs
Flood Elev= 96.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	81.51'	**18.0" Round Culvert** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.51' / 81.10' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=6.67 cfs @ 12.18 hrs HW=83.24' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 6.67 cfs @ 3.77 fps)

Summary for Pond DMH4: DMH-4

Inflow Area = 2.186 ac, 78.25% Impervious, Inflow Depth = 7.23" for 100-Yr Storm event
Inflow = 8.17 cfs @ 12.18 hrs, Volume= 1.317 af
Outflow = 8.17 cfs @ 12.18 hrs, Volume= 1.317 af, Atten= 0%, Lag= 0.0 min
Primary = 8.17 cfs @ 12.18 hrs, Volume= 1.317 af
Routed to Pond DMH5 : DMH-5

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 83.23' @ 12.18 hrs
Flood Elev= 96.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	81.00'	**18.0" Round Culvert** L= 213.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.00' / 79.90' S= 0.0052 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=8.17 cfs @ 12.18 hrs HW=83.23' (Free Discharge)
└**1=Culvert** (Inlet Controls 8.17 cfs @ 4.62 fps)

Summary for Pond DMH5: DMH-5

Inflow Area = 2.186 ac, 78.25% Impervious, Inflow Depth = 7.23" for 100-Yr Storm event
Inflow = 8.17 cfs @ 12.18 hrs, Volume= 1.317 af
Outflow = 8.17 cfs @ 12.18 hrs, Volume= 1.317 af, Atten= 0%, Lag= 0.0 min
Primary = 8.17 cfs @ 12.18 hrs, Volume= 1.317 af
Routed to Link SP-2 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 82.03' @ 12.18 hrs
Flood Elev= 96.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	79.80'	**18.0" Round Culvert** L= 55.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 79.80' / 78.00' S= 0.0327 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=8.17 cfs @ 12.18 hrs HW=82.03' (Free Discharge)
└**1=Culvert** (Inlet Controls 8.17 cfs @ 4.62 fps)

Summary for Pond DMH6: DMH-6

Inflow Area = 0.235 ac, 36.02% Impervious, Inflow Depth = 5.95" for 100-Yr Storm event
Inflow = 1.13 cfs @ 12.10 hrs, Volume= 0.117 af
Outflow = 1.13 cfs @ 12.10 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min
Primary = 1.13 cfs @ 12.10 hrs, Volume= 0.117 af
Routed to Pond DMH7 :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 90.58' @ 12.10 hrs
Flood Elev= 95.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	90.00'	**15.0" Round Culvert** L= 163.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.00' / 80.85' S= 0.0561 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.12 cfs @ 12.10 hrs HW=90.57' (Free Discharge)
└**1=Culvert** (Inlet Controls 1.12 cfs @ 2.03 fps)

Summary for Pond DMH7:

Inflow Area = 0.458 ac, 67.13% Impervious, Inflow Depth = 6.83" for 100-Yr Storm event
Inflow = 2.16 cfs @ 12.13 hrs, Volume= 0.261 af
Outflow = 2.16 cfs @ 12.13 hrs, Volume= 0.261 af, Atten= 0%, Lag= 0.0 min
Primary = 2.16 cfs @ 12.13 hrs, Volume= 0.261 af
Routed to Pond DMH8 : DMH-8

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 81.56' @ 12.13 hrs
Flood Elev= 90.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	80.75'	**18.0" Round Culvert** L= 49.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.75' / 80.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.15 cfs @ 12.13 hrs HW=81.56' (Free Discharge)
1=Culvert (Barrel Controls 2.15 cfs @ 3.21 fps)

Summary for Pond DMH8: DMH-8

Inflow Area = 0.458 ac, 67.13% Impervious, Inflow Depth = 6.83" for 100-Yr Storm event
Inflow = 2.16 cfs @ 12.13 hrs, Volume= 0.261 af
Outflow = 2.16 cfs @ 12.13 hrs, Volume= 0.261 af, Atten= 0%, Lag= 0.0 min
Primary = 2.16 cfs @ 12.13 hrs, Volume= 0.261 af
Routed to Reach 1R :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 81.20' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	80.40'	**18.0" Round Culvert** L= 93.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.40' / 80.00' S= 0.0043 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.15 cfs @ 12.13 hrs HW=81.20' (Free Discharge)
1=Culvert (Barrel Controls 2.15 cfs @ 3.24 fps)

Summary for Pond PP-1: Pervious Pavers

Inflow Area = 0.433 ac, 93.72% Impervious, Inflow Depth = 7.62" for 100-Yr Storm event
Inflow = 3.40 cfs @ 12.08 hrs, Volume= 0.275 af
Outflow = 0.66 cfs @ 12.52 hrs, Volume= 0.275 af, Atten= 81%, Lag= 25.9 min
Primary = 0.66 cfs @ 12.52 hrs, Volume= 0.275 af
Routed to Pond DMH3 : DMH-3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Peak Elev= 93.44' @ 12.52 hrs Surf.Area= 3,978 sf Storage= 4,161 cf
Flood Elev= 95.00' Surf.Area= 3,978 sf Storage= 7,630 cf

Plug-Flow detention time= 79.9 min calculated for 0.275 af (100% of inflow)
Center-of-Mass det. time= 79.6 min (831.7 - 752.1)

Volume	Invert	Avail.Storage	Storage Description
#1	90.83'	7,630 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.83	3,978	0.0	0	0
91.16	3,978	40.0	525	525
91.50	3,978	40.0	541	1,066
92.00	3,978	40.0	796	1,862
93.00	3,978	40.0	1,591	3,453
94.00	3,978	40.0	1,591	5,044
94.50	3,978	30.0	597	5,641
95.00	3,978	100.0	1,989	7,630

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.66 cfs @ 12.52 hrs HW=93.44' (Free Discharge)
└**1=Culvert** (Passes 0.66 cfs of 4.34 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.66 cfs @ 7.53 fps)

Summary for Pond PP-2: Pervious Pavers

Inflow Area = 0.059 ac, 90.30% Impervious, Inflow Depth = 7.62" for 100-Yr Storm event
Inflow = 0.46 cfs @ 12.08 hrs, Volume= 0.038 af
Outflow = 0.46 cfs @ 12.09 hrs, Volume= 0.038 af, Atten= 1%, Lag= 0.6 min
Primary = 0.46 cfs @ 12.09 hrs, Volume= 0.038 af
Routed to Pond DMH2 : DMH-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.87' @ 12.09 hrs Surf.Area= 1,023 sf Storage= 15 cf
Flood Elev= 97.50' Surf.Area= 1,023 sf Storage= 2,116 cf

Plug-Flow detention time= 0.6 min calculated for 0.038 af (100% of inflow)
Center-of-Mass det. time= 0.6 min (752.7 - 752.1)

Volume	Invert	Avail.Storage	Storage Description
#1	92.83'	2,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.83	1,023	0.0	0	0
93.33	1,023	40.0	205	205
94.00	1,023	40.0	274	479
95.00	1,023	40.0	409	888
95.50	1,023	40.0	205	1,093
96.00	1,023	40.0	205	1,297
97.00	1,023	30.0	307	1,604
97.50	1,023	100.0	512	2,116

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.57 cfs @ 12.09 hrs HW=92.87' (Free Discharge)
↑—**1=Culvert** (Passes 0.57 cfs of 3.70 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.57 cfs @ 6.59 fps)

Summary for Pond PP-3: Pervious Pavers

Inflow Area = 0.113 ac,100.00% Impervious, Inflow Depth = 7.86" for 100-Yr Storm event
Inflow = 0.89 cfs @ 12.08 hrs, Volume= 0.074 af
Outflow = 0.51 cfs @ 12.20 hrs, Volume= 0.074 af, Atten= 42%, Lag= 6.7 min
Primary = 0.51 cfs @ 12.20 hrs, Volume= 0.074 af
Routed to Pond DMH2 : DMH-2

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 92.49' @ 12.20 hrs Surf.Area= 3,446 sf Storage= 219 cf
Flood Elev= 96.50' Surf.Area= 3,446 sf Storage= 6,437 cf

Plug-Flow detention time= 2.8 min calculated for 0.074 af (100% of inflow)
Center-of-Mass det. time= 2.8 min (743.8 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1	92.33'	6,437 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.33	3,446	0.0	0	0
92.83	3,446	40.0	689	689
93.00	3,446	40.0	234	924
94.00	3,446	40.0	1,378	2,302
94.50	3,446	40.0	689	2,991
95.00	3,446	40.0	689	3,680
96.00	3,446	30.0	1,034	4,714
96.50	3,446	100.0	1,723	6,437

Device	Routing	Invert	Outlet Devices
#1	Primary	90.83'	**12.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 90.83' / 89.00' S= 0.0183 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	90.83'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.51 cfs @ 12.20 hrs HW=92.49' (Free Discharge)
└**1=Culvert** (Passes 0.51 cfs of 3.21 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.51 cfs @ 5.88 fps)

Summary for Pond UDSF-1: Filtration Basin

Inflow Area = 0.436 ac, 42.19% Impervious, Inflow Depth = 6.07" for 100-Yr Storm event
Inflow = 3.00 cfs @ 12.09 hrs, Volume= 0.221 af
Outflow = 0.83 cfs @ 12.44 hrs, Volume= 0.221 af, Atten= 72%, Lag= 21.2 min
Primary = 0.83 cfs @ 12.44 hrs, Volume= 0.221 af
Routed to Reach 1R :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R :

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 84.37' @ 12.44 hrs Surf.Area= 1,342 sf Storage= 2,348 cf

Plug-Flow detention time= 22.8 min calculated for 0.221 af (100% of inflow)
Center-of-Mass det. time= 22.8 min (818.0 - 795.2)

Volume	Invert	Avail.Storage	Storage Description
#1	80.33'	3,282 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
80.33	691	0.0	0	0
80.67	691	40.0	94	94
81.00	691	40.0	91	185
81.50	691	30.0	104	289
82.00	691	30.0	104	392
82.50	691	30.0	104	496
83.00	835	100.0	382	878
84.00	1,172	100.0	1,004	1,881
85.00	1,629	100.0	1,401	3,282

Device	Routing	Invert	Outlet Devices
#1	Primary	80.33'	**12.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 80.33' / 80.00' S= 0.0132 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	80.33'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	84.50'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	84.50'	**10.0' long + 3.0 '/' SideZ x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65
2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.83 cfs @ 12.44 hrs HW=84.37' (Free Discharge)
└**1=Culvert** (Passes 0.83 cfs of 7.12 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.83 cfs @ 9.48 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=80.33' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Link SP-1:

Inflow Area = 2.373 ac, 78.91% Impervious, Inflow Depth = 6.58" for 100-Yr Storm event
Inflow = 15.64 cfs @ 12.08 hrs, Volume= 1.301 af
Primary = 15.64 cfs @ 12.08 hrs, Volume= 1.301 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

Summary for Link SP-2:

Inflow Area = 4.667 ac, 52.49% Impervious, Inflow Depth = 6.49" for 100-Yr Storm event
Inflow = 17.10 cfs @ 12.20 hrs, Volume= 2.523 af
Primary = 17.10 cfs @ 12.20 hrs, Volume= 2.523 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs

ATTACHMENT C - STORMWATER MAINTENANCE MANUAL

RAILROAD SQUARE REDEVELOPMENT

YARMOUTH, MAINE

STORMWATER MAINTENANCE PLAN

Yarmouth MS-4 Permit (Small Municipal Separate Storm Sewer System) and Post Construction Stormwater Management Ordinance Chapt. 330.

Railroad square is located within the Town of Yarmouth Brick Hollow Watershed which is regulated under the Department of Environmental Protection (DEP) General Permit for MS4's throughout Maine. The MS4 program requires specific site stormwater system inspection, maintenance and reporting for the post-construction building and site. This Stormwater Plan identifies the stormwater devices installed as part of the Railroad Square project and outlines inspection, maintenance, and reporting requirements to be provided to the Town of Yarmouth Engineer or responsible party for administering the Yarmouth MS4 program. Additional requirements may apply as regulated under the Town Chapter 330 Post Construction Stormwater Management Ordinance.

Introduction

The following plan outlines the anticipated inspection and maintenance procedures for the stormwater management devices (BMPs) for the project site. Also, this plan outlines several housekeeping requirements that shall be followed during and after construction. These procedures should be followed in order to ensure the intended function of the designed measures and to prevent unreasonable adverse impacts to the surrounding environment.

Maintenance Responsibilities

During the phasing in of construction activities, the maintenance of all stormwater measures will be the direct responsibility of the Contractor. After acceptance by the Owner, in whole or on a phased basis, the maintenance of all stormwater management facilities, the establishment of any contract services required to implement the program, and the keeping of records and maintenance logbook will be the responsibility of the subdivision homeowner's association, Railroad Square at Yarmouth Village (HOA). The current contact for Railroad Square Associates LLC (Owner) and Railroad Square at Yarmouth Village (HOA) is:

Matthew Teare,
Teare.mattd@gmail.com
Railroad Square Associates, LLC.
48 Railroad Square
Yarmouth, Maine 04096

The procedures outlined in this inspection and maintenance plan are provided as an overview of the anticipated practices to be used on this site. In some instances, additional measures may be required due to unexpected conditions. For additional detail on any of the erosion and sedimentation control measures or stormwater management devices to be utilized on this project, refer to the most recently revised edition of the "Maine Erosion and Sedimentation Control BMP" manual and/or the "Stormwater Management for Maine: Best Management Practices" manual as published by the Maine Department of Environmental Protection (MDEP).

1. **Documentation:** A log summarizing the inspections and any corrective action taken must be maintained. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of controls. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to the appropriate regulatory agency upon request. A sample "Stormwater Inspection and Maintenance Form" has been included as Attachment 1 of this Inspection, Maintenance, and Housekeeping Plan.

2. **Recertification:** A qualified post-construction stormwater inspector hired by the person having control over post-construction BMPs shall provide on or by June 30 of each year a completed and signed certification to the enforcement authority in a form provided by the municipality, certifying that the post-construction BMPs have been inspected and that they are adequately maintained and functioning as intended by the approved post-construction stormwater management plan, or that they require maintenance or repair, describing any required maintenance and any deficiencies found during inspection of the post construction BMPs and if the post-construction BMPs require maintenance or repair of deficiencies in order to function as intended by the approved post-construction stormwater management plan, that person shall provide a record of the required maintenance or deficiency and corrective action (s) taken.

MDEP Recertification:

Additionally, a certification of the following must also be submitted to the Maine Department of Environmental Protection (MDEP) within three months of the expiration of each five-year interval from the date of issuance of MDEP permits.

A. Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

B. Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

C. The stormwater maintenance plan for the site is being implemented as approved by the Department, and the maintenance log is being maintained.

D. All proprietary systems have been maintained according to the manufacturer's recommendations. Where required by the Department, the permittee shall execute a 5-year maintenance contract with a qualified professional for the coming 5-year interval. The maintenance contract must include provisions for routine inspections, cleaning and general maintenance.

E. The Department may waive some or all of these recertification requirements on a case-by-case basis for permittees subject to the Department's Multi-Sector General Permit ("MSGP") and/or Maine Pollutant Discharge Elimination System ("MEPDES") programs where it is demonstrated that these programs are providing stormwater control that is at least as effective as required pursuant to this Chapter.

3. **Duration of Maintenance:** Perform maintenance as described and required for any associated permits unless and until the system is formally accepted by a municipality or quasi-municipal district or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the MDEP stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with MDEP standards. Upon such assumption of responsibility, and approval by the MDEP, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.

Post Construction

1. **Inspection:** After construction, it is the responsibility of the owner/HOA or assigned heirs to comply with the inspection and maintenance procedures outlined in this section. All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in all applicable permits, shall conduct the inspections.

2. **Specific Inspection and Maintenance Tasks:** The following is a list of permanent erosion control and stormwater management measures and the inspection and maintenance tasks to be performed after construction.

Ditches, Swales, and Riprap Aprons

Open swales and ditches shall be inspected on a monthly basis or after a major rainfall event to assure that debris and/or sediments do not reduce the effectiveness of the system. Debris shall be removed at that time. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth of vegetation for the stability of the structure and proper function. Maintenance shall include, but not be limited to, mowing, trimming and removal vegetation in

the ditches as required to prevent vegetation from blocking or diverting storm flows, replacement of riprap channel lining to prevent scour of the channel invert, removing vegetation and debris from the culverts.
Vegetated ditches should be mowed at least three times during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any areas where the vegetation fails will be subject to erosion and should be reseeded and mulched immediately.
Riprap ditches and aprons where stone is displaced should be replaced and chinked to assure stability. With time, additional riprap may be added. Vegetation growing through riprap and accumulated sediments and debris should be removed on a bi-annual basis.

Drainage Pipes, Catch Basins, Drain Manholes and Culverts

Culverts and piped drainage systems including all structures (catch basins, manholes, etc.) shall be inspected on an annual basis to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the pipe inlet and outlet. Sediment should be removed when its level exceeds 20% of the pipe diameter. This may be accomplished by hydraulic flushing or any mechanical means; however, care should be taken to contain the sediment at the pipe outlet, and not flush the sediments into the detention/infiltration pond areas as this will reduce the ponds capacity and ability to infiltrate runoff, and will hasten the time when the pond must be cleaned/rehabilitated.

Driveways, Walkways and Paved Areas

Accumulations of winter sand along paved surfaces shall be cleared at least once a year, preferably in the spring, to minimize transportation of sediment during rainfall events. Accumulations on pavement may be removed by pavement sweeping.

Underdrained Soil Filter –Lots 4-5

Inspections of the underdrained filter shall be conducted on a semi-annual basis and following significant rainfall events. Delayed or poor maintenance practices can result in loss of treatment capacity. Records should be kept of all maintenance operations to help plan future work and identify problem areas.
The basin embankments should be maintained to preserve their integrity including, but not limited to, vegetation maintenance (mowing, control of woody vegetation), rodent control, erosion control and repair, and outlet control structure maintenance and repair. The embankment should be inspected annually for erosion or destabilization of side slopes, embankment settling and other signs of overtop structural failure.
Basin plantings, and vegetation should be maintained on a quarterly basis. Regular maintenance activities should include cutting back shrub plantings where necessary to prevent excessive woody growth, removal of dead vegetation and re-planting to maintain good cover and root spread. Shrub or grass clippings should be removed to minimize the amount of organic material accumulation in the basin.
Sediment and debris should be removed from the sediment forebay at least annually, where applicable.

Bioretention cells and underdrained filters shall not be used for snow storage area. Snow storage should be sited so that snow melt flows to a pretreatment BMP before reaching the infiltration area.
Vehicular equipment used to maintain or rehabilitate the basins should work from the cell perimeter and not enter the basin floor area, as this would compact the soil surface and reduce infiltration.
The surface of the basins may clog with fine sediments over time. Maintenance of good plant or grass cover should minimize this; however, if ponded runoff does not infiltrate within 48 hours, rototilling the top of the soil bed may be required to reestablish the soils infiltration capacity.

Roof Drip line Filters – Lot Buildings

Inspections of the filtering drip strips shall be undertaken on a quarterly basis and following significant rainfall events. The surface stone should be inspected for evidence of displacement, or erosion. Any accumulated debris, leaves, or loose vegetative matter should be removed from the surface to prevent clogging of the void space. The areas adjacent to the filtering drip strips should be inspected for erosion or bare soil that could migrate into the stone or filter media. Evidence of standing water, or poorly draining media should be noted as this may indicate the need for replacement of the materials.

Pervious Surfaces –Civic Plaza A, Thoroughfare 2, Lot 3,

Pervious surfaces and pavement, whether asphalt, concrete or paving stones, have the potential to become impervious if not properly maintained. The following need to be planned for and be met:

Frequent inspections are performed during the first few months following construction. Then, the system is inspected routinely on an annual basis. Inspections should be made after significant storm events to check for surface ponding that could indicate failure due to clogging. Non-routine maintenance may require reconstruction of the surface treatment, and possibly the filter and reservoir layers, to relieve major clogging.
Prevent sedimentation due to the erosion of areas upgradient the pervious pavement structures.
Prevent vehicles with muddy wheels from accessing onto areas intended for pervious pavement.
All pervious pavers/pavement shall be swept twice a year with a regenerative air vacuum sweeper. Mechanical and traditional vacuum sweepers are not acceptable.
Limit salt use for deicing, and do not use sand.
Remove leaves and organic debris in the fall.
Measures should be taken to ensure that an area designed to be porous does not receive a future overlay of conventional non-porous paving.

Subsurface Sand Filter –Thoroughfare 4

A legal agreement between the owner/HOA and an approved maintenance operator (ACF Environmental or approved equal) should identify the responsible inspector, all inspection and maintenance tasks, and all financial obligations.
Cleaning of the pretreatment device should be performed as identified by the entity holding the maintenance contractual agreement. A routine but specific inspection schedule needs to be identified for

every site based on site variables such as anticipated pollutant load, percent imperviousness, land use (i.e. road, industrial, commercial, residential), etc.
The filter should be draining within 48 hours following a one-inch storm or greater. If the system drains too fast, an orifice may need to be added on the underdrain outlet or may need to be modified if already present.
The pretreatment structure must be cleaned when necessary.

Reporting:

The responsible party shall maintain records/logs of all inspections in an electronic format and provide an annual report to the Town of Yarmouth in accordance with their specific MS4 reporting requirements. Refer to the Town Engineer and the MS4 Stormwater Management Plan located at the following link for specific annual reporting requirements. Sample inspection logs are attached as *Exhibit A*.
https://yarmouth.me.us/vertical/sites/%7B27541806-6670-456D-9204-5443DC558F94%7D/uploads/Yarm_2022_MS4StormwaterPlan2021_03_(1).pdf

Railroad Square
Yarmouth Maine
Stormwater Inspection and Maintenance Log

Site Name **Railroad Square** **Location** **Yarmouth, ME** **Date of Inspection**

BMP	Inspection tasks	Completed	Notes	Maintenance Required	Maintenance Complete
Ditches, swales and open channels	Inspect for debris and channel blockages Check vegetation for overgrowth Inspect for evidence of erosion				
Catch Basins	Check sediment level in sumps Inspect grates, frames and structures				
Pipe Inlet and Outlet	Inspect riprap aprons Look for evidence of erosion				
Bioretention Underdrained Filter	Check plantings/grass cover Inspect soil bed Inspect underdrain outlets Evidence of high water level Verify structure is draining Inspect inlet grate and outlet structure Look for evidence of sedimentation Check stability of side slopes				
Subsurface Sand Filter	Check system drain time, should be within 48 hours see maintenace agreement for other system requirements				
Filtering Drip Strips	Inspect surface for displacement/erosion Check for poor drainage Check for debris/ soil ingress				
Paved areas, Walways	Check for sand and salt accumulation Sand should be removed atleast once a year Check integrity of surfaces and edges				
Culverts	Inspect structural integrity Look for joint displacement Inspect inlet and outlet structures Check for sediment accumulation				
Pervious Surfaces	Limit salt use for deicing, and do not use sand. Remove leaves and organic debris in the fall. All pervious pavers/pavement shall be swept twice a year. Sweeping by regenerative air vacum sweeper				