Wilcox & Barton INC.
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25th ANNIVERSARY W&B

Project: Capital City Subaru (New)
Address: 110 Manchester Street, Concord, NH
Applicant: PRM Auto Holdings, LLC

Project Narrative

The project parcel at 110 Manchester Street (Tax Map 782Z, Lot 4) is in the Highway Commercial (CH) zoning district, and Office Park Performance (OFP) zoning district. The project involves redeveloping the existing parcel, increasing the paved parking area and expanding one of the two buildings to support a car dealership. The total area of the parcel is 10.03 acres (436,717 SF). The project is limited to the portion of the lot zoned CH. All calculations and requirements have been based solely on the CH-zoned area.

The property is currently owned and operated by Freedom Cycle for the sale of recreational vehicles and parts, with parking provided for employees and customers. The site includes landscaped areas with grass and trees. Stormwater from the existing buildings, driveways, and paved parking is collected in a series of catch basins and conveyed to a retention basin located at the southern end of the developed area. Wooded and grass areas are present on the remainder of the site, outside the proposed project area. The parcel has frontage in 2 locations on Manchester Street.

The main building (30,310 SF) will be renovated for the proposed car dealership, including 19 service bays. A 2,470 SF addition is proposed on the west side of the building for service vehicle drop-off. The rear building will be used for reconditioning vehicles prior to presenting to customers. The site will include 186 parking spaces and 54,300 SF of outside storage of for-sale vehicles. Site improvements include updates to the paved parking areas, a building addition, site lighting, landscaping, and stormwater management system updates.

The impervious area of the site is currently 155,960 square feet (SF). The project increases the impervious cover on site by 71,835 SF. The final impervious area on site will be 227,795 SF. Construction activities are expected to disturb approximately 120,700 SF of land, and therefore, a NHDES Alteration of Terrain permit-by-notification is required.

Additional stormwater management practices are proposed to control and treat runoff from the additional impervious area. The project proposes a series of catch basins with deep sumps to collect stormwater which use perforated pipes surrounded by stone and fabric to convey runoff to a new dry well. Runoff from the remaining impervious area will be collected by additional catch basins and conveyed to the existing retention basin.

As part of the City of Concord plans to improve Manchester Street, the city is requesting additional right-of-way through an easement. The site plan shows a proposed easement along the frontage based on plans obtained from the Engineering Services Department.

SITE PHOTOS – CAPITAL CITY SUBARU (NEW)

Figure 1: Existing building entrance with access driveway (01/29/2026).

Figure 2: Western portion of project area (01/29/2026).

Figure 3: Existing building front façade (01/29/2026).

Figure 4: Northern side of Service Building (01/29/2026).

Figure 5: Southern side of Service Building (01/29/2026).

Figure 6: Western side of front building to be redeveloped (01/29/2026).

Figure 7: Property frontage, signage, and access driveway (Google Image).

Figure 8: Western side of project area to be redeveloped (Google Image).

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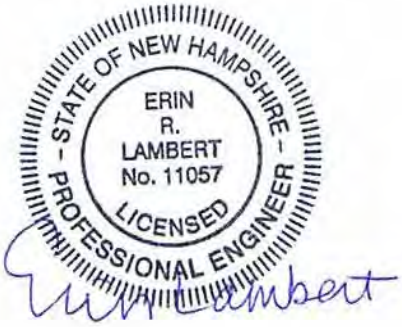
STORMWATER MANAGEMENT PLAN
for

PRM Auto Holdings, LLC
110 Manchester Street
Concord, NH 03301

Owner - Prepared for:
Two Wheeler Holdings, LLC
98 Willow Street
Manchester, NH 03103

Prepared by:
Wilcox & Barton, Inc.
2 Home Ave.
Concord, New Hampshire 03301
Contact: Erin R. Lambert, PE, (603) 369-4190 x527



Wilcox & Barton, Inc.
Project No.: PRM0002

April 15, 2026

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1.0 PROJECT NARRATIVE

1.1 Project Description

The project, Capital City Subaru (New), involves the redevelopment of the existing parcel (Map 782-Z, Lot 44) at 110 Manchester Street for a car dealership. Redevelopment includes the expansion of the paved parking area located on the northern and western side of the property and the expansion of one of the existing buildings. Proposed work includes the demolition of portions of the existing pavement, gravel areas, and concrete pads, followed by the construction of new paved areas, landscaping improvements, building addition, and the implementation of stormwater and erosion control measures to support the car dealership. The project parcel is currently partially developed, with a total lot size of 10.03 acres (436,717 square feet, SF) and approximately 3.58 acres (155,960 SF) of impervious area. The existing buildings, along with most of the impervious and pervious areas located on the southern, northern, and eastern portions of the property, will remain unchanged. Construction activities are proposed within and adjacent to the existing developed area. Construction activities associated with redevelopment will result in a total impervious area of approximately 5.23 acres (227,795 SF), thus adding approximately 1.65 acres (71,835 SF) of impervious cover. The total area of disturbance is approximately 120,700 SF; therefore, an Alteration of Terrain Permit-By-Notification is required. The proposed project includes the installation of a dry well to provide additional stormwater management in conjunction with the existing on-site retention basin system. Erosion and sediment control during construction will be achieved through the installation of silt fencing and drop inlet protection along downgradient areas of disturbance and at catch basins, respectively speaking, to control sediment migration and protect stormwater quality at the limits of construction.

1.2 Site Soils

On-site soil consists of Windsor loamy sand, 3 to 8 percent slopes, and Windsor-Urban land complex, 0 to 8 percent slopes. The soils are classified as hydrologic soil group A. Refer to the NRCS Soil Information report (Section 2.0) for more soil information.

Confirmatory test pits shall be performed within the footprint of the proposed stormwater management system to confirm the estimated seasonal high water table elevation to provide the minimum 3 feet of separation to the bottom of the stormwater practice. Please refer to the civil plan set for the confirmatory test pit requirements.

1.3 Pre-Development Watershed

The pre-development watershed consists of the entire project area, which encompasses the northwest portion of the parcel and part of Manchester Street. The remaining areas of the parcel that will remain undisturbed and are located outside the project area were not included in the hydraulic analysis. The existing lot is partially developed and includes impervious surfaces such as pavement, concrete, and gravel, along with two existing buildings, landscaped areas, closed catch basin network, and an existing retention basin system that functions as the site's stormwater treatment system.

The majority of the site slopes toward the southern property boundary. Runoff from the impervious areas is collected by a series of catch basins and culverts and then conveyed to the on-site retention basin system for treatment. Portions of the grassed and wooded areas on the western side of the parcel slope toward the western property boundary, while the grassed and wooded areas along the southern portion of the site drain toward the southern end of the property away from the developed area. A small portion of the northern area drains toward an existing catch basin on Manchester Street. As a result, the pre-development watershed has been represented by three points of interest (POIs).

POI #1 includes a small portion of the adjacent grassed/wooded areas within the project area that direct runoff toward the western property boundary, where flow discharges off-site.

POI #2 includes most of the project area, consisting of impervious surfaces and some landscaped areas, which direct runoff to the existing on-site catch basin network and ultimately to the retention basin located in the southern portion of the project area.

POI #3 includes a small portion of the grassed area along the property frontage on the northern portion of the property that directs runoff toward an existing catch basin on Manchester Street.

1.4 Post-Development Watershed

The post-development watershed consists of the same cumulative area as the pre-development watershed. Post-development cover will consist of pavement, existing buildings and proposed building addition, concrete pads, and landscaped areas. Construction of the project will not change the locations of the POIs, though the drainage areas to each will change due to proposed pavement grading.

The project proposes an increase in impervious area on the site. The main building will be renovated for the proposed dealership, and a 2,470 SF addition is proposed on the west side of the building for service vehicle drop-off. Additionally, a parking expansion is proposed along the western and northern sides of the project area.

Additional stormwater management practices are proposed to control and treat runoff from the additional impervious area. The project proposes a series of catch basins with deep sumps to collect stormwater and provide pretreatment prior to directing stormwater to a new dry well. Runoff from the remaining impervious area will be collected by additional catch basins and conveyed to the existing retention basin system. Both the existing and proposed stormwater management practices support stormwater disconnection through groundwater recharge and ensure that flows to Points of Interest #1 and #2 do not increase for post-development conditions. The drainage area to Point of Interest #3 remains unchanged between pre- and post-development conditions for the applicable project frontage.

To the maximum extent, runoff from the site will sheet flow toward catch basins located throughout the parking area, which convey flow to the existing and proposed stormwater management practices prior to reaching the points of interest. Portions of the parking area were also graded to promote sheet flow toward the existing retention basin on-site. The additional

impervious area, including the proposed building addition, shall be routed to the existing stormwater management system. The increased influent area does not impact the effectiveness of the system, including the existing forebays, which still provides the necessary water quality volume without overtopping.

POI #1 includes a small portion of adjacent grassed and wooded areas that direct runoff toward the western property boundary, where flow discharges off-site. A proposed dry well system with deep sump catch basins is located at the access drive and collects both existing and proposed pavement to provide stormwater disconnection and groundwater recharge.

POI #2 includes the majority of the project area, consisting of impervious surfaces from existing buildings, pavement (existing and proposed expansions), concrete areas, and some landscaped areas, which direct runoff to the existing on-site retention pond located in the southern portion of the project area via existing/proposed closed drainage networks.

POI #3 includes a small portion of the grassed frontage area on the northern side of the property that directs runoff toward an existing catch basin along Manchester Street. This contributing area of frontage remains unchanged from pre-development conditions.

1.5 Schedule

Construction is planned to commence upon Town approval in Fall 2026 with estimated completion by Spring 2027.

1.6 Points of Interest

There are three points of interest in the hydraulic model. Please see the pre-development and post-development watershed section for a description of the points of interest.

1.7 Erosion Sediment Control/Site Stabilization

The methods to be used to control sediment migration and erosion of the site include use of drop inlet protection, silt fencing, and landscaping in accordance with best management practices. The contractor will be responsible for all temporary erosion and sediment control measures during construction, while the property owner will be ultimately responsible for maintaining all permanent erosion and sediment control measures as may be required.

1.8 Water Quality

During construction, drop inlet protection and silt fencing will be installed to maintain the quality of stormwater leaving the site. Runoff from disturbed areas will be directed to depressions to promote infiltration into the groundwater and allow sediments and pollutants to settle.

After construction is completed and the site is stabilized, stormwater quality will be maintained through infiltration provided by the dry well and retention basin systems, promoting groundwater

recharge. The proposed dry well will hold the water quality volume via storage in the stone, structure, and pipes. The existing retention basin system holds the water quality volume for the proposed influent flow in the main cell. Pre-treatment will be provided by deep sumps in the catch basins connected to the dry well system; and by the existing forebays prior to discharge to the retention basin's main cell. Landscaped areas and the maintenance of existing stormwater flow paths will also help support stormwater quality for site runoff.

1.9 Summary of Results

POI		Peak Discharge						
		2-yr		10-yr		25-yr	50-yr	100-yr
		Peak Q	Discharged Volume	Peak Q	Discharged Volume	Peak Q	Peak Q	Peak Q
#1	Pre	0.02 cfs	0.00 ac-ft	0.04 cfs	0.00 ac-ft	0.06 cfs	0.08 cfs	0.13 cfs
	Post	0.00 cfs	0.00 ac-ft	0.00 cfs	0.00 ac-ft	0.01 cfs	0.04 cfs	0.10 cfs
#2	Pre	0.00 cfs	0.00 ac-ft	0.00 cfs	0.00 ac-ft	0.00 cfs	0.00 cfs	0.00 cfs
	Post	0.00 cfs	0.00 ac-ft	0.00 cfs	0.00 ac-ft	0.00 cfs	0.00 cfs	0.00 cfs
#3	Pre	0.09 cfs	0.007 ac-ft	0.13 cfs	0.01 ac-ft	0.16 cfs	0.20 cfs	0.25 cfs
	Post	0.09 cfs	0.007 ac-ft	0.13 cfs	0.01 ac-ft	0.16 cfs	0.20 cfs	0.25 cfs

1.10 Conclusions

The preceding table and following calculations indicate that the post-development peak flow rates of the property decrease or remain unchanged when compared to the pre-development peak flow in the 2-year, 10-year, 25-year, 50-year, and 100-year storm events for POI #1, POI #2, and POI #3. The post-development discharged volume remains unchanged when compared to the pre-development discharged volumes in the 2- and 10-year storm events.

Stormwater is conveyed through the development via catch basins and culverts before discharging the flow to the applicable stormwater management systems prior to reaching the western and southern property boundary lines (POI #1 and POI #2). Both stormwater systems reflect that no overtopping occurs through the 100-year storm event; both systems fully infiltrate the influent flows for all design storm events. The drainage area to POI #3 remains unchanged between pre- and post-development; therefore, the peak discharge rate is also unchanged.

The proposed design meets the Env-Wq 1507.05 Channel Protection Requirement. The 2-year, 24-hour post-development peak flow rate at all points of interest is less or equal to the 2-year, 24-hour pre-development peak flow rate.

Calculations are included for the 2-year, 10-year, 25-year, 50-year, and 100-year events.

2.0 NRCS SOIL INFORMATION

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 Merrimack and Belknap Counties, New Hampshire

February 20, 2026

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

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.

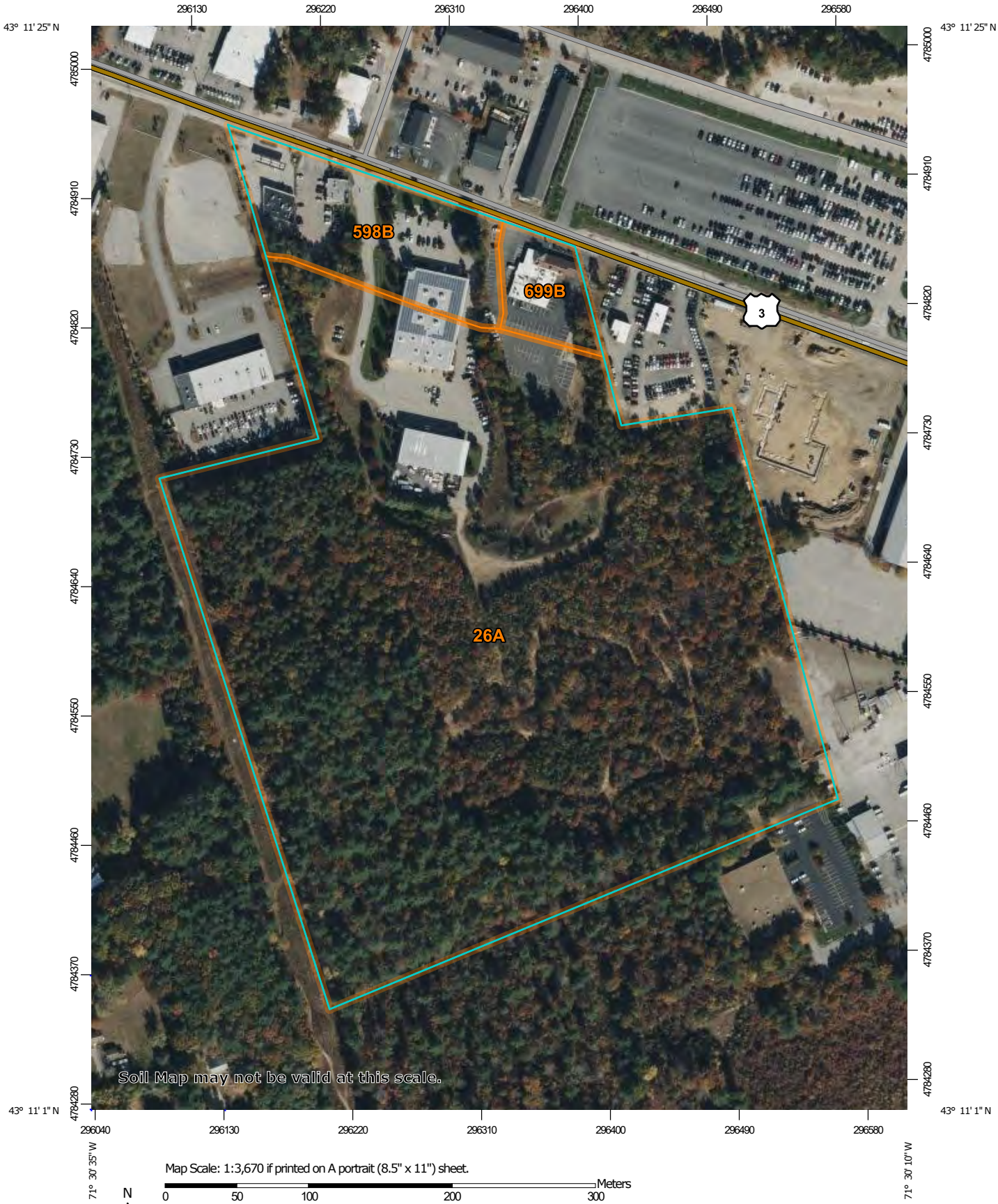
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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.



Map Scale: 1:3,670 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

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: Merrimack and Belknap Counties, New Hampshire
Survey Area Data: Version 31, Sep 10, 2025

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

Date(s) aerial images were photographed: Oct 6, 2022—Oct 22, 2022

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

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
26A	Windsor loamy sand, 0 to 3 percent slopes	37.4	89.0%
598B	Windsor-Urban land complex, 0 to 8 percent slopes	3.5	8.3%
699B	Urban land, 0 to 8 percent slopes	1.1	2.7%
Totals for Area of Interest		**42.1**	**100.0%**

Map Unit Descriptions

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

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

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

Merrimack and Belknap Counties, New Hampshire

26A—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkg
Landscape: Valleys
Elevation: 0 to 990 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 local importance

Map Unit Composition

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

Description of Windsor, Loamy Sand

Setting

Landscape: Valleys
Landform: Outwash plains, Outwash terraces, Deltas, 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

O - 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 3 percent
Depth to restrictive feature: More than 80 inches
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
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Deerfield, loamy sand

Percent of map unit: 10 percent
Landscape: Outwash plains, valleys
Landform: Deltas, Kame terraces, Outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hinckley, loamy sand

Percent of map unit: 5 percent
Landscape: Outwash plains, valleys
Landform: Deltas, Kames, Eskers, Outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

598B—Windsor-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w2wq
Landscape: Valleys
Elevation: 0 to 920 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 45 percent
Urban land: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landscape: Valleys
Landform: Dunes, Deltas, Outwash terraces, Outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear

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

A - 0 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
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
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Description of Urban Land

Setting

Landscape: Glaciated uplands
Anthropogenic Feature: Urban land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 10 percent
Landscape: Valleys
Landform: Dunes, Deltas, Outwash terraces, Outwash plains

Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent
Landscape: Outwash plains, valleys
Landform: Deltas, Kames, Eskers, Outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield

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

699B—Urban land, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9dmm
Elevation: 200 to 1,970 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Typical profile

H1 - 0 to 6 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Udipsamments

Percent of map unit: 10 percent
Landform: Terraces
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Map Scale: 1:3,670 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 150 300 600 900

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 Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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: Merrimack and Belknap Counties, New Hampshire
Survey Area Data: Version 31, Sep 10, 2025

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

Date(s) aerial images were photographed: Oct 6, 2022—Oct 22, 2022

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

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
26A	Windsor loamy sand, 0 to 3 percent slopes	A	37.4	89.0%
598B	Windsor-Urban land complex, 0 to 8 percent slopes	A	3.5	8.3%
699B	Urban land, 0 to 8 percent slopes		1.1	2.7%
Totals for Area of Interest			**42.1**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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3.0 HYDRAULIC CALCULATIONS

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point	
Smoothing	Yes
State	
Location	
Latitude	43.187 degrees North
Longitude	71.506 degrees West
Elevation	90 feet
Date/Time	Thu Feb 19 2026 10:23:19 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.39	0.49	0.64	0.80	1.00	**1yr**	0.69	0.98	1.16	1.47	1.86	2.37	2.58	**1yr**	2.09	2.48	2.90	3.59	4.13	**1yr**
2yr	0.31	0.48	0.60	0.79	1.00	1.25	**2yr**	0.86	1.15	1.45	1.81	2.26	2.82	3.16	**2yr**	2.50	3.04	3.51	4.20	4.80	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.58	**5yr**	1.08	1.44	1.83	2.29	2.84	3.52	4.01	**5yr**	3.12	3.85	4.45	5.22	5.92	**5yr**
10yr	0.42	0.66	0.84	1.14	1.48	1.89	**10yr**	1.28	1.71	2.19	2.74	3.39	4.17	4.80	**10yr**	3.69	4.61	5.32	6.16	6.94	**10yr**
25yr	0.50	0.79	1.01	1.39	1.85	2.38	**25yr**	1.59	2.15	2.77	3.46	4.26	5.21	6.10	**25yr**	4.61	5.86	6.73	7.68	8.57	**25yr**
50yr	0.57	0.91	1.17	1.63	2.19	2.84	**50yr**	1.89	2.55	3.31	4.13	5.08	6.18	7.31	**50yr**	5.47	7.03	8.06	9.07	10.05	**50yr**
100yr	0.64	1.04	1.35	1.91	2.60	3.39	**100yr**	2.24	3.02	3.96	4.94	6.05	7.32	8.78	**100yr**	6.48	8.44	9.65	10.72	11.80	**100yr**
200yr	0.74	1.21	1.57	2.24	3.09	4.05	**200yr**	2.66	3.59	4.73	5.89	7.20	8.68	10.54	**200yr**	7.68	10.13	11.55	12.67	13.86	**200yr**
500yr	0.89	1.46	1.91	2.77	3.87	5.11	**500yr**	3.34	4.52	5.98	7.45	9.07	10.89	13.43	**500yr**	9.64	12.91	14.67	15.82	17.15	**500yr**

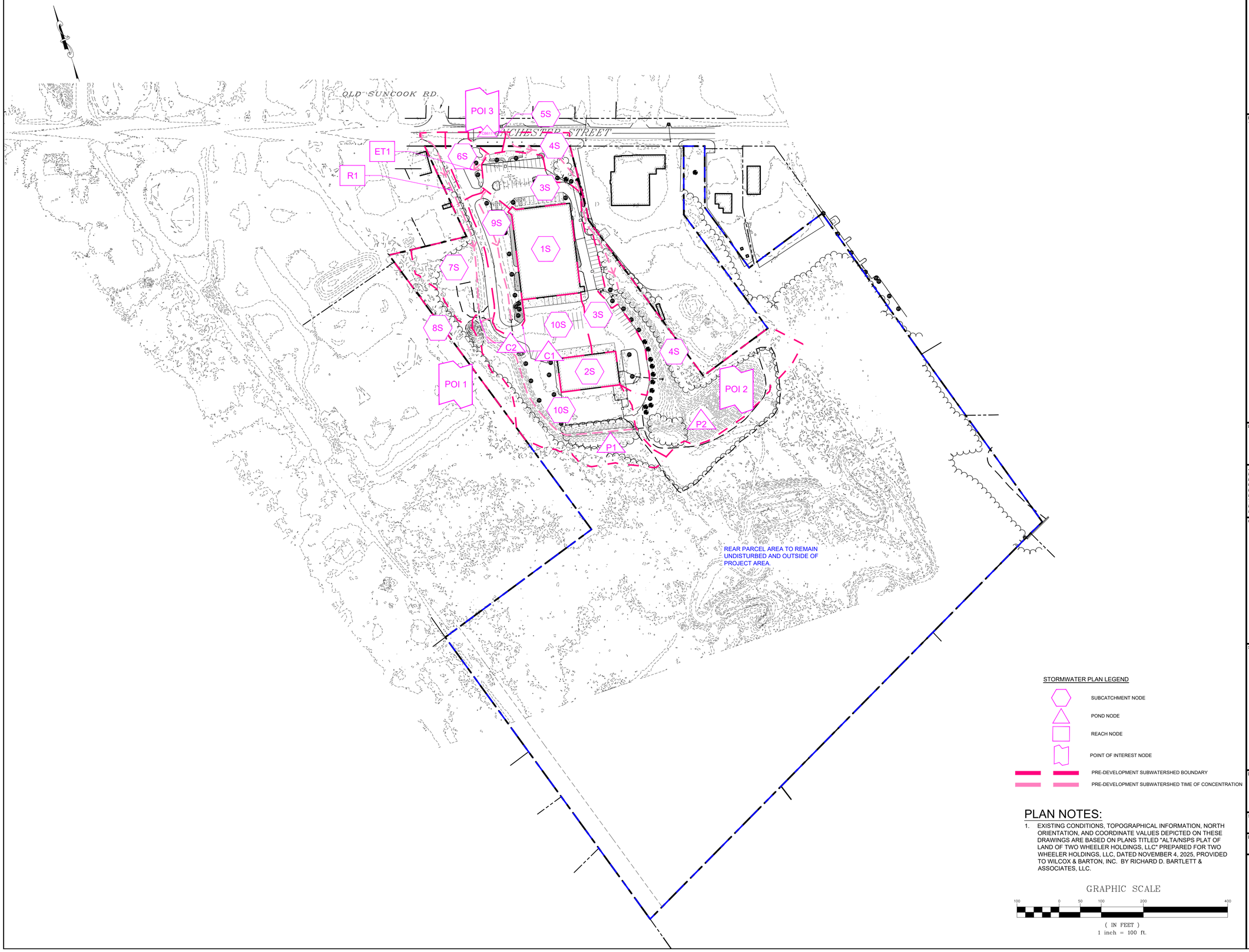
Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.20	0.32	0.39	0.52	0.64	0.88	**1yr**	0.55	0.86	1.06	1.37	1.59	2.04	2.44	**1yr**	1.81	2.35	2.66	3.30	3.88	**1yr**
2yr	0.30	0.47	0.58	0.78	0.96	1.15	**2yr**	0.83	1.12	1.31	1.72	2.19	2.75	3.06	**2yr**	2.44	2.94	3.42	4.09	4.67	**2yr**
5yr	0.35	0.53	0.66	0.91	1.15	1.37	**5yr**	1.00	1.34	1.54	2.00	2.56	3.30	3.72	**5yr**	2.92	3.58	4.15	4.90	5.57	**5yr**
10yr	0.38	0.59	0.73	1.02	1.31	1.55	**10yr**	1.13	1.52	1.75	2.25	2.87	3.80	4.33	**10yr**	3.36	4.16	4.79	5.60	6.38	**10yr**
25yr	0.44	0.67	0.83	1.19	1.57	1.81	**25yr**	1.35	1.77	2.07	2.62	3.34	4.55	5.26	**25yr**	4.03	5.06	5.76	6.71	7.62	**25yr**
50yr	0.49	0.74	0.92	1.32	1.78	2.04	**50yr**	1.54	2.00	2.36	2.95	3.76	5.22	6.10	**50yr**	4.62	5.87	6.61	7.68	8.74	**50yr**
100yr	0.55	0.83	1.03	1.49	2.05	2.31	**100yr**	1.77	2.26	2.70	3.32	4.24	5.99	7.08	**100yr**	5.30	6.81	7.61	8.80	10.01	**100yr**
200yr	0.61	0.91	1.16	1.67	2.33	2.59	**200yr**	2.01	2.53	3.07	3.73	4.78	6.88	8.21	**200yr**	6.09	7.89	8.72	10.10	11.46	**200yr**
500yr	0.71	1.05	1.35	1.96	2.79	3.03	**500yr**	2.41	2.96	3.66	4.37	5.61	8.26	9.98	**500yr**	7.31	9.60	10.39	12.14	13.76	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.44	0.54	0.73	0.90	1.08	**1yr**	0.78	1.05	1.19	1.58	1.99	2.49	2.74	**1yr**	2.21	2.64	3.14	3.81	4.34	**1yr**
2yr	0.33	0.50	0.62	0.84	1.03	1.24	**2yr**	0.89	1.21	1.39	1.82	2.32	2.90	3.25	**2yr**	2.57	3.13	3.64	4.32	4.94	**2yr**
5yr	0.41	0.62	0.78	1.06	1.35	1.57	**5yr**	1.17	1.53	1.78	2.28	2.91	3.74	4.30	**5yr**	3.31	4.13	4.75	5.54	6.27	**5yr**
10yr	0.48	0.74	0.92	1.29	1.67	1.90	**10yr**	1.44	1.86	2.15	2.71	3.47	4.55	5.31	**10yr**	4.03	5.11	5.87	6.70	7.57	**10yr**
25yr	0.62	0.94	1.17	1.67	2.20	2.47	**25yr**	1.90	2.42	2.76	3.40	4.35	5.89	7.04	**25yr**	5.22	6.77	7.73	8.61	9.66	**25yr**
50yr	0.74	1.12	1.40	2.01	2.70	3.01	**50yr**	2.33	2.95	3.32	4.05	5.16	7.18	8.70	**50yr**	6.35	8.37	9.54	10.43	11.63	**50yr**
100yr	0.89	1.35	1.69	2.44	3.34	3.67	**100yr**	2.88	3.59	4.01	4.82	6.14	8.75	10.79	**100yr**	7.74	10.37	11.81	12.63	14.00	**100yr**
200yr	1.07	1.61	2.04	2.95	4.11	4.48	**200yr**	3.55	4.38	4.84	5.74	7.31	10.66	13.36	**200yr**	9.43	12.85	14.63	15.30	16.84	**200yr**
500yr	1.37	2.04	2.63	3.82	5.43	5.85	**500yr**	4.68	5.72	6.22	7.24	9.22	13.85	17.76	**500yr**	12.26	17.08	19.44	19.73	21.51	**500yr**

Powered by ACIS Northeast Regional Climate Center



STORMWATER PLAN LEGEND

- SUBCATCHMENT NODE
- POND NODE
- REACH NODE
- POINT OF INTEREST NODE
- PRE-DEVELOPMENT SUBWATERSHED BOUNDARY
- PRE-DEVELOPMENT SUBWATERSHED TIME OF CONCENTRATION

PLAN NOTES:

1. EXISTING CONDITIONS, TOPOGRAPHICAL INFORMATION, NORTH ORIENTATION, AND COORDINATE VALUES DEPICTED ON THESE DRAWINGS ARE BASED ON PLANS TITLED "ALTA/NSPS PLAT OF LAND OF TWO WHEELER HOLDINGS, LLC" PREPARED FOR TWO WHEELER HOLDINGS, LLC, DATED NOVEMBER 4, 2025, PROVIDED TO WILCOX & BARTON, INC. BY RICHARD D. BARTLETT & ASSOCIATES, LLC.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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603-369-4190
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REVISION HISTORY
1.

ISSUED FOR

PERMITTING

OWNER

TWO WHEELER HOLDINGS, LLC
98 WILLOW STREET
MANCHESTER, NH

SITE

PRM AUTO HOLDINGS, LLC
110 MANCHESTER ST
CONCORD, NH

MBLU: 782/Z/44

DRAWING TITLE

PRE-DEVELOPMENT STORMWATER PLAN

SCALE	DATE
1" = 100'	04/15/2026

DRAFTED BY	CHECKED BY	PROJECT MGR	PROJECT NO.
KAD	ERL	ERL	PRM0002

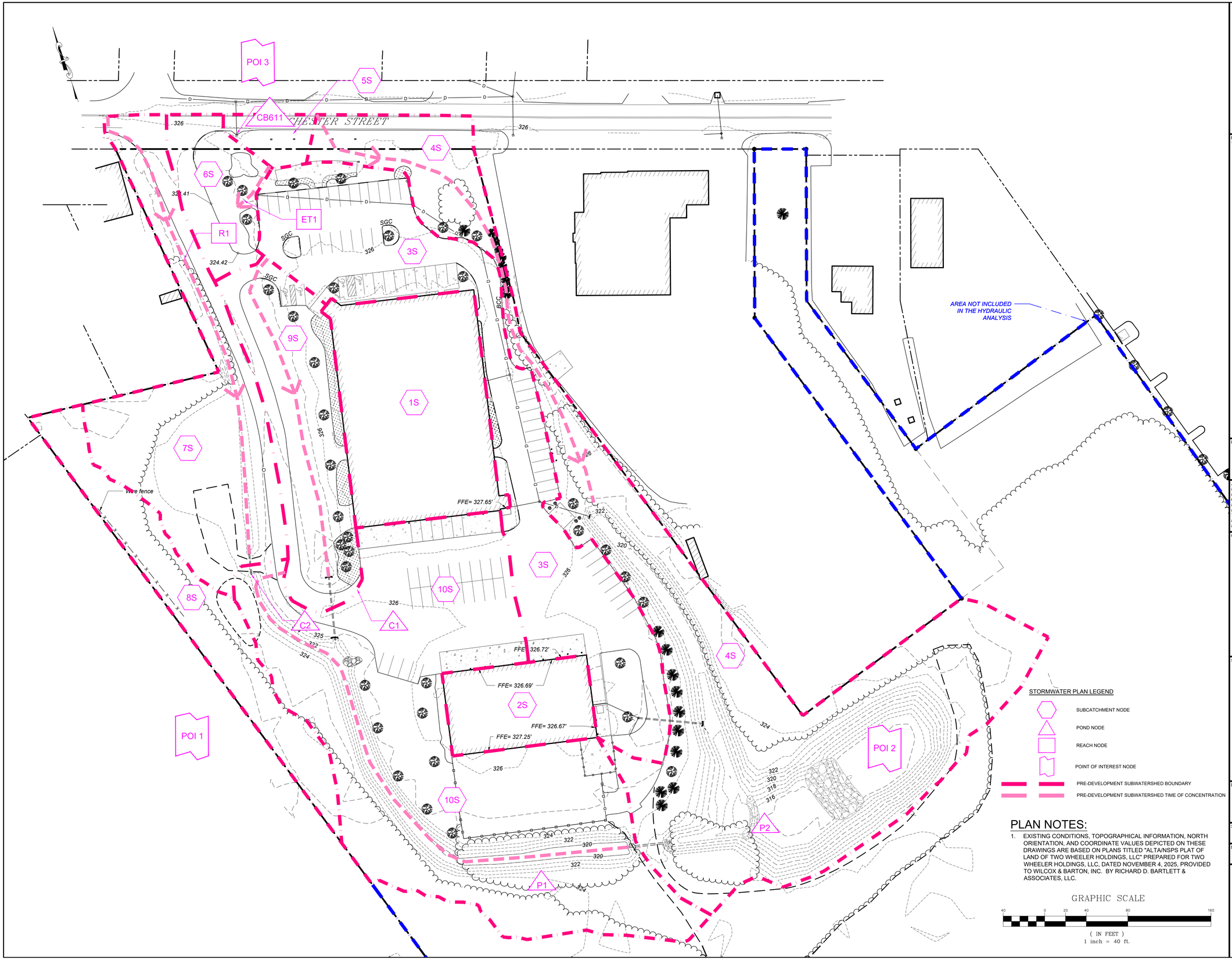
STATE OF NEW HAMPSHIRE - ERIN R. LAMBERT No. 11057 LICENSED PROFESSIONAL ENGINEER

ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

SHEET NO.

FIG.1

01 OF 04



PLAN NOTES:

1. EXISTING CONDITIONS, TOPOGRAPHICAL INFORMATION, NORTH ORIENTATION, AND COORDINATE VALUES DEPICTED ON THESE DRAWINGS ARE BASED ON PLANS TITLED "ALTA/NSPS PLAT OF LAND OF TWO WHEELER HOLDINGS, LLC" PREPARED FOR TWO WHEELER HOLDINGS, LLC, DATED NOVEMBER 4, 2025, PROVIDED TO WILCOX & BARTON, INC. BY RICHARD D. BARTLETT & ASSOCIATES, LLC.

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REVISION HISTORY
1.

ISSUED FOR

PERMITTING

OWNER

TWO WHEELER HOLDINGS, LLC
98 WILLOW STREET
MANCHESTER, NH

SITE

PRM AUTO HOLDINGS, LLC
110 MANCHESTER ST
CONCORD, NH

MBLU: 782/Z/44

DRAWING TITLE

PRE-DEVELOPMENT STORMWATER PLAN

SCALE	DATE
1" = 40'	04/15/2026

DRAFTED BY	CHECKED BY	PROJECT MGR	PROJECT NO.
KAD	ERL	ERL	PRM0002

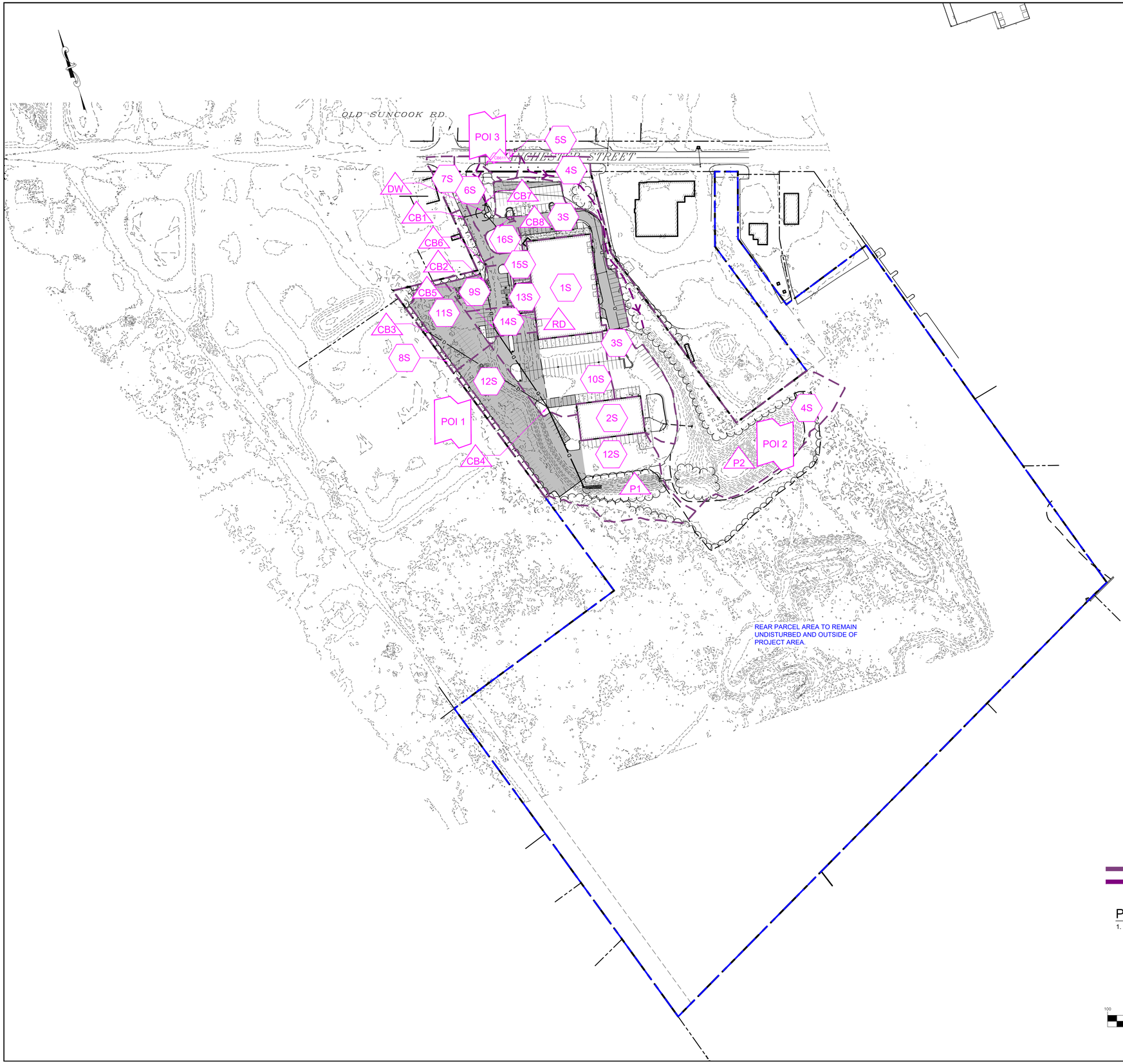
STATE OF NEW HAMPSHIRE — ERIN R. LAMBERT No. 11057 LICENSED PROFESSIONAL ENGINEER

ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

SHEET NO.

FIG.2

02 OF 04



STORMWATER PLAN LEGEND

- SUBCATCHMENT NODE
- POND NODE
- REACH NODE
- POINT OF INTEREST NODE
- POST-DEVELOPMENT SUBWATERSHED BOUNDARY
- POST-DEVELOPMENT SUBWATERSHED TIME OF CONCENTRATION

PLAN NOTES:

1. EXISTING CONDITIONS, TOPOGRAPHICAL INFORMATION, NORTH ORIENTATION, AND COORDINATE VALUES DEPICTED ON THESE DRAWINGS ARE BASED ON PLANS TITLED "ALTA/NSPS PLAT OF LAND OF TWO WHEELER HOLDINGS, LLC" PREPARED FOR TWO WHEELER HOLDINGS, LLC, DATED NOVEMBER 4, 2025, PROVIDED TO WILCOX & BARTON, INC. BY RICHARD D. BARTLETT & ASSOCIATES, LLC.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

Wilcox & Barton INC.
CIVIL • ENVIRONMENTAL • GEOTECHNICAL

2 HOME AVENUE
CONCORD, NH 03301
603-369-4190
www.wilcoxandbarton.com

REVISION HISTORY
1.

ISSUED FOR

PERMITTING

OWNER

TWO WHEELER HOLDINGS, LLC
98 WILLOW STREET
MANCHESTER, NH

SITE

PRM AUTO HOLDINGS, LLC
110 MANCHESTER ST
CONCORD, NH

MBLU: 782/Z/44

DRAWING TITLE

POST-DEVELOPMENT STORMWATER PLAN

SCALE	DATE
1" = 100'	04/15/2026

DRAFTED BY	CHECKED BY	PROJECT MGR	PROJECT NO.
KAD	ERL	ERL	PRM0002

STATE OF NEW HAMPSHIRE – ERIN R. LAMBERT No. 11057 LICENSED PROFESSIONAL ENGINEER

ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

SHEET NO.

FIG.3

03 OF 04

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CONCORD, NH 03301
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REVISION HISTORY
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ISSUED FOR
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OWNER
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98 WILLOW STREET
MANCHESTER, NH

SITE
PRM AUTO HOLDINGS, LLC
110 MANCHESTER ST
CONCORD, NH

MBLU: 782/Z/44

DRAWING TITLE
POST-DEVELOPMENT STORMWATER PLAN

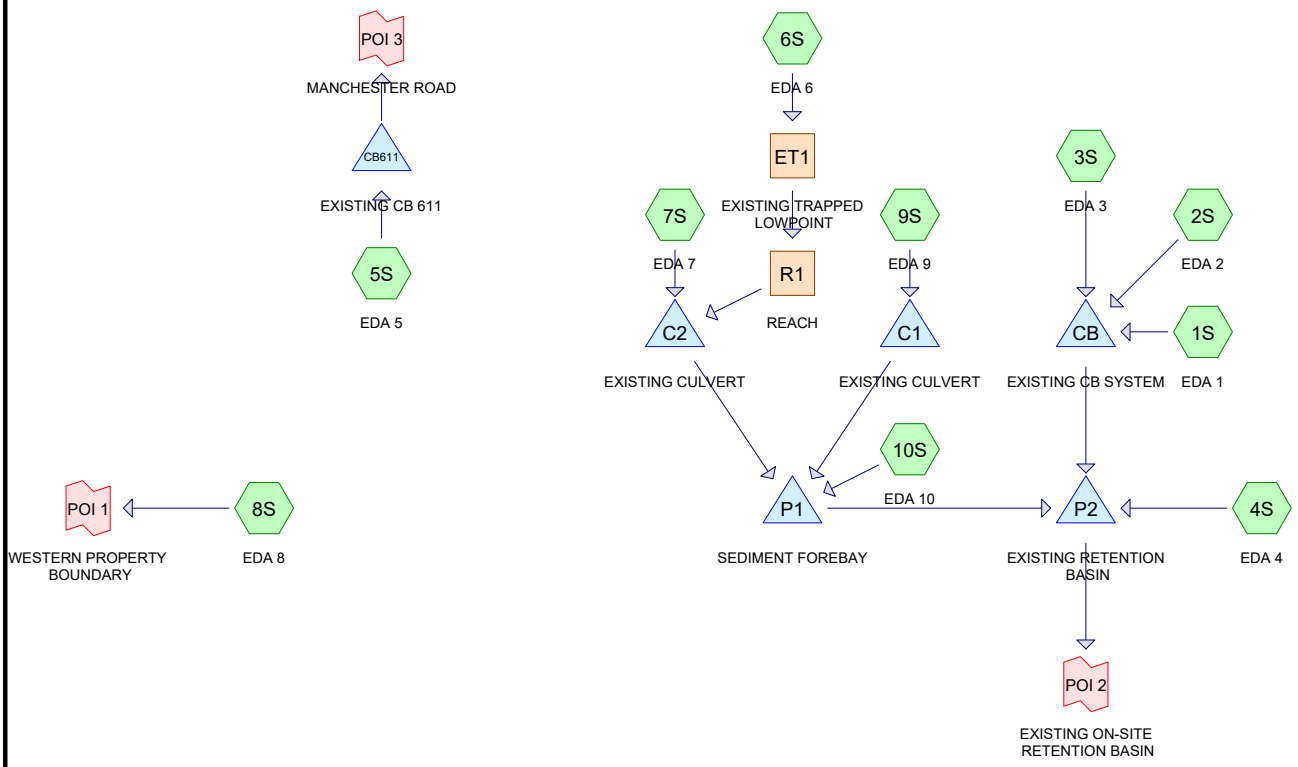
SCALE	DATE
1" = 40'	04/15/2026

DRAFTED BY	CHECKED BY	PROJECT MGR	PROJECT NO.
KAD	ERL	ERL	PRM0002

STATE OF NEW HAMPSHIRE
ERIN R. LAMBERT No. 11057 LICENSED PROFESSIONAL ENGINEER
ENGINEER: ERIN R. LAMBERT
NH P.E. #11057

SHEET NO.
FIG.4

04 OF 04



Subcat Reach Pond Link

Routing Diagram for Pre-development_PRM0002
Prepared by Wilcox & Barton, Inc, Printed 4/14/2026
HydroCAD® 10.20-7a s/n 08777 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	2.82	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
157,377	39	>75% Grass cover, Good, HSG A (3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S)
41,539	98	EXISTING BUILDING (1S, 2S)
12,100	98	EXISTING CONCRETE (3S, 4S, 6S, 9S, 10S)
9,717	98	EXISTING GRAVEL (4S, 7S, 10S)
92,632	98	EXISTING PAVEMENT (3S, 4S, 5S, 6S, 7S, 9S, 10S)
1,790	77	Fallow, bare soil, HSG A (7S, 8S, 10S)
59,009	30	Woods, Good, HSG A (4S, 7S, 8S, 10S)
374,164	**62**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
218,176	HSG A	3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S
0	HSG B	
0	HSG C	
0	HSG D	
155,988	Other	1S, 2S, 3S, 4S, 5S, 6S, 7S, 9S, 10S
374,164		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
157,377	0	0	0	0	157,377	>75% Grass cover, Good	
0	0	0	0	41,539	41,539	EXISTING BUILDING	
0	0	0	0	12,100	12,100	EXISTING CONCRETE	
0	0	0	0	9,717	9,717	EXISTING GRAVEL	
0	0	0	0	92,632	92,632	EXISTING PAVEMENT	
1,790	0	0	0	0	1,790	Fallow, bare soil	
59,009	0	0	0	0	59,009	Woods, Good	
218,176	**0**	**0**	**0**	**155,988**	**374,164**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	P1	318.90	318.70	40.0	0.0050	0.012	0.0	18.0	0.0	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: EDA 1 Runoff Area=30,310 sf 100.00% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=98 Runoff=1.97 cfs 6,540 cf

Subcatchment2S: EDA 2 Runoff Area=11,229 sf 100.00% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=98 Runoff=0.73 cfs 2,423 cf

Subcatchment3S: EDA 3 Runoff Area=51,483 sf 84.23% Impervious Runoff Depth=2.18"
Tc=5.0 min CN=WQ Runoff=2.81 cfs 9,356 cf

Subcatchment4S: EDA 4 Runoff Area=97,820 sf 10.19% Impervious Runoff Depth=0.26"
Flow Length=501' Tc=28.5 min CN=WQ Runoff=0.37 cfs 2,150 cf

Subcatchment5S: EDA 5 Runoff Area=3,471 sf 38.95% Impervious Runoff Depth=1.01"
Tc=5.0 min CN=WQ Runoff=0.09 cfs 292 cf

Subcatchment6S: EDA 6 Runoff Area=10,465 sf 54.78% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=WQ Runoff=0.37 cfs 1,237 cf

Subcatchment7S: EDA 7 Runoff Area=36,666 sf 26.96% Impervious Runoff Depth=0.70"
Flow Length=458' Tc=15.1 min CN=WQ Runoff=0.48 cfs 2,147 cf

Subcatchment8S: EDA 8 Runoff Area=19,027 sf 0.00% Impervious Runoff Depth=0.04"
Tc=5.0 min CN=WQ Runoff=0.02 cfs 60 cf

Subcatchment9S: EDA 9 Runoff Area=24,618 sf 29.04% Impervious Runoff Depth=0.75"
Flow Length=324' Tc=8.5 min CN=WQ Runoff=0.41 cfs 1,543 cf

Subcatchment10S: EDA 10 Runoff Area=89,075 sf 41.53% Impervious Runoff Depth=1.08"
Flow Length=540' Tc=15.5 min CN=WQ Runoff=1.76 cfs 8,049 cf

Reach ET1: EXISTING TRAPPED Avg. Flow Depth=0.04' Max Vel=0.33 fps Inflow=0.37 cfs 1,237 cf
n=0.022 L=25.0' S=0.0020 '/' Capacity=29.58 cfs Outflow=0.37 cfs 1,237 cf

Reach R1: REACH Avg. Flow Depth=0.06' Max Vel=0.80 fps Inflow=0.37 cfs 1,237 cf
n=0.022 L=304.0' S=0.0059 '/' Capacity=3.22 cfs Outflow=0.31 cfs 1,237 cf

Pond C1: EXISTING CULVERT Inflow=0.41 cfs 1,543 cf
Primary=0.41 cfs 1,543 cf

Pond C2: EXISTING CULVERT Inflow=0.76 cfs 3,384 cf
Primary=0.76 cfs 3,384 cf

Pond CB: EXISTING CB SYSTEM Inflow=5.51 cfs 18,319 cf
Primary=5.51 cfs 18,319 cf

Pond CB611: EXISTING CB 611 Inflow=0.09 cfs 292 cf
Primary=0.09 cfs 292 cf

Pond P1: SEDIMENT FOREBAY Peak Elev=319.76' Storage=884 cf Inflow=2.83 cfs 12,976 cf
Discarded=0.09 cfs 2,909 cf Primary=2.52 cfs 10,066 cf Outflow=2.62 cfs 12,976 cf

Pond P2: EXISTING RETENTION BASIN Peak Elev=316.84' Storage=14,017 cf Inflow=7.22 cfs 30,536 cf
Outflow=0.68 cfs 30,540 cf

Link POI 1: WESTERN PROPERTY BOUNDARY Inflow=0.02 cfs 60 cf
Primary=0.02 cfs 60 cf

Link POI 2: EXISTING ON-SITE RETENTION BASIN Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 3: MANCHESTERROAD Inflow=0.09 cfs 292 cf
Primary=0.09 cfs 292 cf

Total Runoff Area = 374,164 sf Runoff Volume = 33,797 cf Average Runoff Depth = 1.08"
58.31% Pervious = 218,176 sf 41.69% Impervious = 155,988 sf

Summary for Subcatchment 1S: EDA 1

Runoff = 1.97 cfs @ 12.07 hrs, Volume= 6,540 cf, Depth= 2.59"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	30,310	98	EXISTING BUILDING
	30,310		100.00% Impervious Area

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

Summary for Subcatchment 2S: EDA 2

Runoff = 0.73 cfs @ 12.07 hrs, Volume= 2,423 cf, Depth= 2.59"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	11,229	98	EXISTING BUILDING
	11,229		100.00% Impervious Area

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

Summary for Subcatchment 3S: EDA 3

Runoff = 2.81 cfs @ 12.07 hrs, Volume= 9,356 cf, Depth= 2.18"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	38,574	98	EXISTING PAVEMENT
*	4,792	98	EXISTING CONCRETE
	8,117	39	>75% Grass cover, Good, HSG A
	51,483		Weighted Average
	8,117		15.77% Pervious Area
	43,366		84.23% Impervious Area

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

Summary for Subcatchment 4S: EDA 4

Runoff = 0.37 cfs @ 12.38 hrs, Volume= 2,150 cf, Depth= 0.26"
Routed to Pond P2 : EXISTING RETENTION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	3,642	98	EXISTING PAVEMENT
*	1,073	98	EXISTING CONCRETE
*	5,252	98	EXISTING GRAVEL
	63,108	39	>75% Grass cover, Good, HSG A
	24,745	30	Woods, Good, HSG A
	0	77	Fallow, bare soil, HSG A
	97,820		Weighted Average
	87,853		89.81% Pervious Area
	9,967		10.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	50	0.0040	0.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.6	106	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	37	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.5	100	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.9	84	0.0010	0.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	26	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	98	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.5	501	Total			

Summary for Subcatchment 5S: EDA 5

Runoff = 0.09 cfs @ 12.07 hrs, Volume= 292 cf, Depth= 1.01"
Routed to Pond CB611 : EXISTING CB 611

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	1,352	98	EXISTING PAVEMENT
	2,119	39	>75% Grass cover, Good, HSG A
	3,471		Weighted Average
	2,119		61.05% Pervious Area
	1,352		38.95% Impervious Area

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

Summary for Subcatchment 6S: EDA 6

Runoff = 0.37 cfs @ 12.07 hrs, Volume= 1,237 cf, Depth= 1.42"
Routed to Reach ET1 : EXISTING TRAPPED LOWPOINT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	5,157	98	EXISTING PAVEMENT
*	576	98	EXISTING CONCRETE
	4,732	39	>75% Grass cover, Good, HSG A
	10,465		Weighted Average
	4,732		45.22% Pervious Area
	5,733		54.78% Impervious Area

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

Summary for Subcatchment 7S: EDA 7

Runoff = 0.48 cfs @ 12.20 hrs, Volume= 2,147 cf, Depth= 0.70"
Routed to Pond C2 : EXISTING CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	7,110	98	EXISTING PAVEMENT
*	2,776	98	EXISTING GRAVEL
	18,031	39	>75% Grass cover, Good, HSG A
	8,568	30	Woods, Good, HSG A
	181	77	Fallow, bare soil, HSG A
	36,666		Weighted Average
	26,780		73.04% Pervious Area
	9,886		26.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.12		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.3	125	0.0080	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.1	115	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	168	0.0065	0.56		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.1	458	Total			

Summary for Subcatchment 8S: EDA 8

Runoff = 0.02 cfs @ 12.08 hrs, Volume= 60 cf, Depth= 0.04"
Routed to Link POI 1 : WESTERN PROPERTY BOUNDARY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

Area (sf)	CN	Description
2,557	39	>75% Grass cover, Good, HSG A
15,709	30	Woods, Good, HSG A
761	77	Fallow, bare soil, HSG A
19,027		Weighted Average
19,027		100.00% Pervious Area

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

Summary for Subcatchment 9S: EDA 9

Runoff = 0.41 cfs @ 12.12 hrs, Volume= 1,543 cf, Depth= 0.75"
Routed to Pond C1 : EXISTING CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	6,964	98	EXISTING PAVEMENT
*	186	98	EXISTING CONCRETE
	17,468	39	>75% Grass cover, Good, HSG A
	24,618		Weighted Average
	17,468		70.96% Pervious Area
	7,150		29.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.12		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
7.8	274	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	324	Total			

Summary for Subcatchment 10S: EDA 10

Runoff = 1.76 cfs @ 12.21 hrs, Volume= 8,049 cf, Depth= 1.08"
Routed to Pond P1 : SEDIMENT FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	29,833	98	EXISTING PAVEMENT
*	5,473	98	EXISTING CONCRETE
*	1,689	98	EXISTING GRAVEL
	41,245	39	>75% Grass cover, Good, HSG A
	9,987	30	Woods, Good, HSG A
	848	77	Fallow, bare soil, HSG A
	89,075		Weighted Average
	52,080		58.47% Pervious Area
	36,995		41.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	50	0.0640	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 2.78"
13.9	490	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.5	540	Total			

Summary for Reach ET1: EXISTING TRAPPED LOWPOINT

Inflow Area = 10,465 sf, 54.78% Impervious, Inflow Depth = 1.42" for 2-yr event
Inflow = 0.37 cfs @ 12.07 hrs, Volume= 1,237 cf
Outflow = 0.37 cfs @ 12.08 hrs, Volume= 1,237 cf, Atten= 1%, Lag= 0.8 min
Routed to Reach R1 : REACH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.33 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 4.2 min

Peak Storage= 28 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.04' , Surface Width= 30.44'
Bank-Full Depth= 0.50' Flow Area= 16.5 sf, Capacity= 29.58 cfs

30.00' x 0.50' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 6.0 '/' Top Width= 36.00'
Length= 25.0' Slope= 0.0020 '/'
Inlet Invert= 324.30', Outlet Invert= 324.25'

Summary for Reach R1: REACH

Inflow Area = 10,465 sf, 54.78% Impervious, Inflow Depth = 1.42" for 2-yr event
Inflow = 0.37 cfs @ 12.08 hrs, Volume= 1,237 cf
Outflow = 0.31 cfs @ 12.13 hrs, Volume= 1,237 cf, Atten= 17%, Lag= 3.1 min
Routed to Pond C2 : EXISTING CULVERT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.80 fps, Min. Travel Time= 6.4 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 27.5 min

Peak Storage= 117 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.06' , Surface Width= 6.37'
Bank-Full Depth= 0.25' Flow Area= 1.7 sf, Capacity= 3.22 cfs

6.00' x 0.25' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 7.50'
Length= 304.0' Slope= 0.0059 '/'
Inlet Invert= 324.20', Outlet Invert= 322.40'

Summary for Pond C1: EXISTING CULVERT

Inflow Area = 24,618 sf, 29.04% Impervious, Inflow Depth = 0.75" for 2-yr event
Inflow = 0.41 cfs @ 12.12 hrs, Volume= 1,543 cf
Primary = 0.41 cfs @ 12.12 hrs, Volume= 1,543 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond C2: EXISTING CULVERT

Inflow Area = 47,131 sf, 33.14% Impervious, Inflow Depth = 0.86" for 2-yr event
Inflow = 0.76 cfs @ 12.17 hrs, Volume= 3,384 cf
Primary = 0.76 cfs @ 12.17 hrs, Volume= 3,384 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB: EXISTING CB SYSTEM

Inflow Area = 93,022 sf, 91.27% Impervious, Inflow Depth = 2.36" for 2-yr event
Inflow = 5.51 cfs @ 12.07 hrs, Volume= 18,319 cf
Primary = 5.51 cfs @ 12.07 hrs, Volume= 18,319 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB611: EXISTING CB 611

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 1.01" for 2-yr event
Inflow = 0.09 cfs @ 12.07 hrs, Volume= 292 cf
Primary = 0.09 cfs @ 12.07 hrs, Volume= 292 cf, Atten= 0%, Lag= 0.0 min
Routed to Link POI 3 : MANCHESTER ROAD

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond P1: SEDIMENT FOREBAY

Inflow Area = 160,824 sf, 37.16% Impervious, Inflow Depth = 0.97" for 2-yr event
Inflow = 2.83 cfs @ 12.18 hrs, Volume= 12,976 cf
Outflow = 2.62 cfs @ 12.25 hrs, Volume= 12,976 cf, Atten= 8%, Lag= 4.0 min
Discarded = 0.09 cfs @ 12.25 hrs, Volume= 2,909 cf
Primary = 2.52 cfs @ 12.25 hrs, Volume= 10,066 cf
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 319.76' @ 12.25 hrs Surf.Area= 1,350 sf Storage= 884 cf
Flood Elev= 323.00' Surf.Area= 11,055 sf Storage= 19,127 cf

Plug-Flow detention time= 21.9 min calculated for 12,974 cf (100% of inflow)
Center-of-Mass det. time= 21.9 min (790.6 - 768.7)

Volume	Invert	Avail.Storage	Storage Description
#1	318.00'	19,127 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.00	15	0	0	15
320.00	1,700	1,250	1,250	1,708
322.00	7,605	8,600	9,850	7,630
323.00	11,055	9,276	19,127	11,097

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.00'	**3.000 in/hr Exfiltration over Wetted area**
#2	Primary	318.90'	**18.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 318.90' / 318.70' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Discarded OutFlow Max=0.09 cfs @ 12.25 hrs HW=319.76' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=2.52 cfs @ 12.25 hrs HW=319.76' TW=316.31' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 2.52 cfs @ 3.47 fps)

Summary for Pond P2: EXISTING RETENTION BASIN

Inflow Area = 351,666 sf, 43.97% Impervious, Inflow Depth = 1.04" for 2-yr event
Inflow = 7.22 cfs @ 12.08 hrs, Volume= 30,536 cf
Outflow = 0.68 cfs @ 13.33 hrs, Volume= 30,540 cf, Atten= 91%, Lag= 75.1 min
Discarded = 0.68 cfs @ 13.33 hrs, Volume= 30,540 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 316.84' @ 13.33 hrs Surf.Area= 9,739 sf Storage= 14,017 cf
Flood Elev= 323.00' Surf.Area= 35,653 sf Storage= 149,415 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 189.4 min (950.8 - 761.3)

Volume	Invert	Avail.Storage	Storage Description
#1	315.00'	86,245 cf	**FOREBAY (Conic)**Listed below (Recalc)
#2	315.00'	63,170 cf	**RETENTION BASIN (Conic)**Listed below (Recalc)
		149,415 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	1,827	0	0	1,827
316.00	3,401	2,574	2,574	3,411
317.00	4,296	3,840	6,413	4,333
318.00	6,953	5,571	11,985	7,003
319.00	9,664	8,271	20,256	9,733
320.00	13,341	11,453	31,709	13,429
321.00	16,596	14,939	46,648	16,713
322.00	19,695	18,123	64,772	19,849
323.00	23,301	21,473	86,245	23,492

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	3,348	0	0	3,348
316.00	4,675	3,993	3,993	4,694
317.00	5,784	5,220	9,213	5,832
318.00	6,919	6,343	15,556	7,001
319.00	7,946	7,427	22,982	8,073
320.00	8,947	8,442	31,424	9,126
321.00	9,999	9,468	40,892	10,233
322.00	11,113	10,551	51,443	11,405
323.00	12,352	11,727	63,170	12,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	315.00'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.68 cfs @ 13.33 hrs HW=316.84' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.68 cfs)

Summary for Link POI 1: WESTERN PROPERTY BOUNDARY

Inflow Area = 19,027 sf, 0.00% Impervious, Inflow Depth = 0.04" for 2-yr event
Inflow = 0.02 cfs @ 12.08 hrs, Volume= 60 cf
Primary = 0.02 cfs @ 12.08 hrs, Volume= 60 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 2: EXISTING ON-SITE RETENTION BASIN

Inflow Area = 351,666 sf, 43.97% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 3: MANCHESTER ROAD

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 1.01" for 2-yr event
Inflow = 0.09 cfs @ 12.07 hrs, Volume= 292 cf
Primary = 0.09 cfs @ 12.07 hrs, Volume= 292 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: EDA 1 Runoff Area=30,310 sf 100.00% Impervious Runoff Depth=3.93"
Tc=5.0 min CN=98 Runoff=2.93 cfs 9,938 cf

Subcatchment2S: EDA 2 Runoff Area=11,229 sf 100.00% Impervious Runoff Depth=3.93"
Tc=5.0 min CN=98 Runoff=1.09 cfs 3,682 cf

Subcatchment3S: EDA 3 Runoff Area=51,483 sf 84.23% Impervious Runoff Depth=3.32"
Tc=5.0 min CN=WQ Runoff=4.20 cfs 14,263 cf

Subcatchment4S: EDA 4 Runoff Area=97,820 sf 10.19% Impervious Runoff Depth=0.44"
Flow Length=501' Tc=28.5 min CN=WQ Runoff=0.55 cfs 3,610 cf

Subcatchment5S: EDA 5 Runoff Area=3,471 sf 38.95% Impervious Runoff Depth=1.57"
Tc=5.0 min CN=WQ Runoff=0.13 cfs 455 cf

Subcatchment6S: EDA 6 Runoff Area=10,465 sf 54.78% Impervious Runoff Depth=2.18"
Tc=5.0 min CN=WQ Runoff=0.55 cfs 1,905 cf

Subcatchment7S: EDA 7 Runoff Area=36,666 sf 26.96% Impervious Runoff Depth=1.10"
Flow Length=458' Tc=15.1 min CN=WQ Runoff=0.71 cfs 3,369 cf

Subcatchment8S: EDA 8 Runoff Area=19,027 sf 0.00% Impervious Runoff Depth=0.09"
Tc=5.0 min CN=WQ Runoff=0.04 cfs 137 cf

Subcatchment9S: EDA 9 Runoff Area=24,618 sf 29.04% Impervious Runoff Depth=1.19"
Flow Length=324' Tc=8.5 min CN=WQ Runoff=0.61 cfs 2,439 cf

Subcatchment10S: EDA 10 Runoff Area=89,075 sf 41.53% Impervious Runoff Depth=1.68"
Flow Length=540' Tc=15.5 min CN=WQ Runoff=2.64 cfs 12,492 cf

Reach ET1: EXISTING TRAPPED Avg. Flow Depth=0.05' Max Vel=0.39 fps Inflow=0.55 cfs 1,905 cf
n=0.022 L=25.0' S=0.0020 '/' Capacity=29.58 cfs Outflow=0.55 cfs 1,905 cf

Reach R1: REACH Avg. Flow Depth=0.08' Max Vel=0.94 fps Inflow=0.55 cfs 1,905 cf
n=0.022 L=304.0' S=0.0059 '/' Capacity=3.22 cfs Outflow=0.47 cfs 1,905 cf

Pond C1: EXISTING CULVERT Inflow=0.61 cfs 2,439 cf
Primary=0.61 cfs 2,439 cf

Pond C2: EXISTING CULVERT Inflow=1.13 cfs 5,274 cf
Primary=1.13 cfs 5,274 cf

Pond CB: EXISTING CB SYSTEM Inflow=8.22 cfs 27,884 cf
Primary=8.22 cfs 27,884 cf

Pond CB611: EXISTING CB 611 Inflow=0.13 cfs 455 cf
Primary=0.13 cfs 455 cf

Pond P1: SEDIMENT FOREBAY Peak Elev=319.99' Storage=1,233 cf Inflow=4.24 cfs 20,205 cf
Discarded=0.12 cfs 3,347 cf Primary=3.76 cfs 16,858 cf Outflow=3.88 cfs 20,205 cf

Pond P2: EXISTING RETENTION BASIN Peak Elev=317.71' Storage=23,744 cf Inflow=10.82 cfs 48,352 cf
Outflow=0.89 cfs 48,356 cf

Link POI 1: WESTERN PROPERTY BOUNDARY Inflow=0.04 cfs 137 cf
Primary=0.04 cfs 137 cf

Link POI 2: EXISTING ON-SITE RETENTION BASIN Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 3: MANCHESTERROAD Inflow=0.13 cfs 455 cf
Primary=0.13 cfs 455 cf

Total Runoff Area = 374,164 sf Runoff Volume = 52,291 cf Average Runoff Depth = 1.68"
58.31% Pervious = 218,176 sf 41.69% Impervious = 155,988 sf

Summary for Subcatchment 1S: EDA 1

Runoff = 2.93 cfs @ 12.07 hrs, Volume= 9,938 cf, Depth= 3.93"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	30,310	98	EXISTING BUILDING
	30,310		100.00% Impervious Area

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

Summary for Subcatchment 2S: EDA 2

Runoff = 1.09 cfs @ 12.07 hrs, Volume= 3,682 cf, Depth= 3.93"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	11,229	98	EXISTING BUILDING
	11,229		100.00% Impervious Area

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

Summary for Subcatchment 3S: EDA 3

Runoff = 4.20 cfs @ 12.07 hrs, Volume= 14,263 cf, Depth= 3.32"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	38,574	98	EXISTING PAVEMENT
*	4,792	98	EXISTING CONCRETE
	8,117	39	>75% Grass cover, Good, HSG A
	51,483		Weighted Average
	8,117		15.77% Pervious Area
	43,366		84.23% Impervious Area

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

Summary for Subcatchment 4S: EDA 4

Runoff = 0.55 cfs @ 12.38 hrs, Volume= 3,610 cf, Depth= 0.44"
Routed to Pond P2 : EXISTING RETENTION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	3,642	98	EXISTING PAVEMENT
*	1,073	98	EXISTING CONCRETE
*	5,252	98	EXISTING GRAVEL
	63,108	39	>75% Grass cover, Good, HSG A
	24,745	30	Woods, Good, HSG A
	0	77	Fallow, bare soil, HSG A
	97,820		Weighted Average
	87,853		89.81% Pervious Area
	9,967		10.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	50	0.0040	0.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.6	106	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	37	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.5	100	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.9	84	0.0010	0.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	26	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	98	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.5	501	Total			

Summary for Subcatchment 5S: EDA 5

Runoff = 0.13 cfs @ 12.07 hrs, Volume= 455 cf, Depth= 1.57"
Routed to Pond CB611 : EXISTING CB 611

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	1,352	98	EXISTING PAVEMENT
	2,119	39	>75% Grass cover, Good, HSG A
	3,471		Weighted Average
	2,119		61.05% Pervious Area
	1,352		38.95% Impervious Area

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

Summary for Subcatchment 6S: EDA 6

Runoff = 0.55 cfs @ 12.07 hrs, Volume= 1,905 cf, Depth= 2.18"
Routed to Reach ET1 : EXISTING TRAPPED LOWPOINT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	5,157	98	EXISTING PAVEMENT
*	576	98	EXISTING CONCRETE
	4,732	39	>75% Grass cover, Good, HSG A
	10,465		Weighted Average
	4,732		45.22% Pervious Area
	5,733		54.78% Impervious Area

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

Summary for Subcatchment 7S: EDA 7

Runoff = 0.71 cfs @ 12.20 hrs, Volume= 3,369 cf, Depth= 1.10"
Routed to Pond C2 : EXISTING CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	7,110	98	EXISTING PAVEMENT
*	2,776	98	EXISTING GRAVEL
	18,031	39	>75% Grass cover, Good, HSG A
	8,568	30	Woods, Good, HSG A
	181	77	Fallow, bare soil, HSG A
	36,666		Weighted Average
	26,780		73.04% Pervious Area
	9,886		26.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.12		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.3	125	0.0080	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.1	115	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	168	0.0065	0.56		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.1	458	Total			

Summary for Subcatchment 8S: EDA 8

Runoff = 0.04 cfs @ 12.08 hrs, Volume= 137 cf, Depth= 0.09"
Routed to Link POI 1 : WESTERN PROPERTY BOUNDARY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

Area (sf)	CN	Description
2,557	39	>75% Grass cover, Good, HSG A
15,709	30	Woods, Good, HSG A
761	77	Fallow, bare soil, HSG A
19,027		Weighted Average
19,027		100.00% Pervious Area

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

Summary for Subcatchment 9S: EDA 9

Runoff = 0.61 cfs @ 12.12 hrs, Volume= 2,439 cf, Depth= 1.19"
Routed to Pond C1 : EXISTING CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	6,964	98	EXISTING PAVEMENT
*	186	98	EXISTING CONCRETE
	17,468	39	>75% Grass cover, Good, HSG A
	24,618		Weighted Average
	17,468		70.96% Pervious Area
	7,150		29.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.12		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
7.8	274	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	324	Total			

Summary for Subcatchment 10S: EDA 10

Runoff = 2.64 cfs @ 12.21 hrs, Volume= 12,492 cf, Depth= 1.68"
Routed to Pond P1 : SEDIMENT FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	29,833	98	EXISTING PAVEMENT
*	5,473	98	EXISTING CONCRETE
*	1,689	98	EXISTING GRAVEL
	41,245	39	>75% Grass cover, Good, HSG A
	9,987	30	Woods, Good, HSG A
	848	77	Fallow, bare soil, HSG A
	89,075		Weighted Average
	52,080		58.47% Pervious Area
	36,995		41.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	50	0.0640	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 2.78"
13.9	490	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.5	540	Total			

Summary for Reach ET1: EXISTING TRAPPED LOWPOINT

Inflow Area = 10,465 sf, 54.78% Impervious, Inflow Depth = 2.18" for 10-yr event
Inflow = 0.55 cfs @ 12.07 hrs, Volume= 1,905 cf
Outflow = 0.55 cfs @ 12.08 hrs, Volume= 1,905 cf, Atten= 1%, Lag= 0.7 min
Routed to Reach R1 : REACH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.39 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 4.0 min

Peak Storage= 35 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 30.56'
Bank-Full Depth= 0.50' Flow Area= 16.5 sf, Capacity= 29.58 cfs

30.00' x 0.50' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 6.0 '/' Top Width= 36.00'
Length= 25.0' Slope= 0.0020 '/'
Inlet Invert= 324.30', Outlet Invert= 324.25'

Summary for Reach R1: REACH

Inflow Area = 10,465 sf, 54.78% Impervious, Inflow Depth = 2.18" for 10-yr event
Inflow = 0.55 cfs @ 12.08 hrs, Volume= 1,905 cf
Outflow = 0.47 cfs @ 12.13 hrs, Volume= 1,905 cf, Atten= 14%, Lag= 2.7 min
Routed to Pond C2 : EXISTING CULVERT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.94 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 0.21 fps, Avg. Travel Time= 23.7 min

Peak Storage= 153 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.08' , Surface Width= 6.48'
Bank-Full Depth= 0.25' Flow Area= 1.7 sf, Capacity= 3.22 cfs

6.00' x 0.25' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 7.50'
Length= 304.0' Slope= 0.0059 '/'
Inlet Invert= 324.20', Outlet Invert= 322.40'

Summary for Pond C1: EXISTING CULVERT

Inflow Area = 24,618 sf, 29.04% Impervious, Inflow Depth = 1.19" for 10-yr event
Inflow = 0.61 cfs @ 12.12 hrs, Volume= 2,439 cf
Primary = 0.61 cfs @ 12.12 hrs, Volume= 2,439 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond C2: EXISTING CULVERT

Inflow Area = 47,131 sf, 33.14% Impervious, Inflow Depth = 1.34" for 10-yr event
Inflow = 1.13 cfs @ 12.16 hrs, Volume= 5,274 cf
Primary = 1.13 cfs @ 12.16 hrs, Volume= 5,274 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB: EXISTING CB SYSTEM

Inflow Area = 93,022 sf, 91.27% Impervious, Inflow Depth = 3.60" for 10-yr event
Inflow = 8.22 cfs @ 12.07 hrs, Volume= 27,884 cf
Primary = 8.22 cfs @ 12.07 hrs, Volume= 27,884 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB611: EXISTING CB 611

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 1.57" for 10-yr event
Inflow = 0.13 cfs @ 12.07 hrs, Volume= 455 cf
Primary = 0.13 cfs @ 12.07 hrs, Volume= 455 cf, Atten= 0%, Lag= 0.0 min
Routed to Link POI 3 : MANCHESTER ROAD

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond P1: SEDIMENT FOREBAY

Inflow Area = 160,824 sf, 37.16% Impervious, Inflow Depth = 1.51" for 10-yr event
Inflow = 4.24 cfs @ 12.18 hrs, Volume= 20,205 cf
Outflow = 3.88 cfs @ 12.25 hrs, Volume= 20,205 cf, Atten= 8%, Lag= 4.2 min
Discarded = 0.12 cfs @ 12.25 hrs, Volume= 3,347 cf
Primary = 3.76 cfs @ 12.25 hrs, Volume= 16,858 cf
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 319.99' @ 12.25 hrs Surf.Area= 1,684 sf Storage= 1,233 cf
Flood Elev= 323.00' Surf.Area= 11,055 sf Storage= 19,127 cf

Plug-Flow detention time= 17.1 min calculated for 20,202 cf (100% of inflow)
Center-of-Mass det. time= 17.1 min (785.2 - 768.1)

Volume	Invert	Avail.Storage	Storage Description
#1	318.00'	19,127 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.00	15	0	0	15
320.00	1,700	1,250	1,250	1,708
322.00	7,605	8,600	9,850	7,630
323.00	11,055	9,276	19,127	11,097

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.00'	**3.000 in/hr Exfiltration over Wetted area**
#2	Primary	318.90'	**18.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 318.90' / 318.70' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Discarded OutFlow Max=0.12 cfs @ 12.25 hrs HW=319.99' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=3.76 cfs @ 12.25 hrs HW=319.99' TW=317.02' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 3.76 cfs @ 3.82 fps)

Summary for Pond P2: EXISTING RETENTION BASIN

Inflow Area = 351,666 sf, 43.97% Impervious, Inflow Depth = 1.65" for 10-yr event
Inflow = 10.82 cfs @ 12.08 hrs, Volume= 48,352 cf
Outflow = 0.89 cfs @ 13.66 hrs, Volume= 48,356 cf, Atten= 92%, Lag= 94.6 min
Discarded = 0.89 cfs @ 13.66 hrs, Volume= 48,356 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 317.71' @ 13.66 hrs Surf.Area= 12,713 sf Storage= 23,744 cf
Flood Elev= 323.00' Surf.Area= 35,653 sf Storage= 149,415 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 278.3 min (1,040.2 - 761.9)

Volume	Invert	Avail.Storage	Storage Description
#1	315.00'	86,245 cf	**FOREBAY (Conic)**Listed below (Recalc)
#2	315.00'	63,170 cf	**RETENTION BASIN (Conic)**Listed below (Recalc)
		149,415 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	1,827	0	0	1,827
316.00	3,401	2,574	2,574	3,411
317.00	4,296	3,840	6,413	4,333
318.00	6,953	5,571	11,985	7,003
319.00	9,664	8,271	20,256	9,733
320.00	13,341	11,453	31,709	13,429
321.00	16,596	14,939	46,648	16,713
322.00	19,695	18,123	64,772	19,849
323.00	23,301	21,473	86,245	23,492

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	3,348	0	0	3,348
316.00	4,675	3,993	3,993	4,694
317.00	5,784	5,220	9,213	5,832
318.00	6,919	6,343	15,556	7,001
319.00	7,946	7,427	22,982	8,073
320.00	8,947	8,442	31,424	9,126
321.00	9,999	9,468	40,892	10,233
322.00	11,113	10,551	51,443	11,405
323.00	12,352	11,727	63,170	12,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	315.00'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.89 cfs @ 13.66 hrs HW=317.71' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.89 cfs)

Summary for Link POI 1: WESTERN PROPERTY BOUNDARY

Inflow Area = 19,027 sf, 0.00% Impervious, Inflow Depth = 0.09" for 10-yr event
Inflow = 0.04 cfs @ 12.08 hrs, Volume= 137 cf
Primary = 0.04 cfs @ 12.08 hrs, Volume= 137 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 2: EXISTING ON-SITE RETENTION BASIN

Inflow Area = 351,666 sf, 43.97% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 3: MANCHESTER ROAD

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 1.57" for 10-yr event
Inflow = 0.13 cfs @ 12.07 hrs, Volume= 455 cf
Primary = 0.13 cfs @ 12.07 hrs, Volume= 455 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: EDA 1 Runoff Area=30,310 sf 100.00% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=98 Runoff=3.68 cfs 12,561 cf

Subcatchment2S: EDA 2 Runoff Area=11,229 sf 100.00% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=98 Runoff=1.36 cfs 4,653 cf

Subcatchment3S: EDA 3 Runoff Area=51,483 sf 84.23% Impervious Runoff Depth=4.23"
Tc=5.0 min CN=WQ Runoff=5.26 cfs 18,136 cf

Subcatchment4S: EDA 4 Runoff Area=97,820 sf 10.19% Impervious Runoff Depth=0.67"
Flow Length=501' Tc=28.5 min CN=WQ Runoff=0.69 cfs 5,442 cf

Subcatchment5S: EDA 5 Runoff Area=3,471 sf 38.95% Impervious Runoff Depth=2.09"
Tc=5.0 min CN=WQ Runoff=0.16 cfs 603 cf

Subcatchment6S: EDA 6 Runoff Area=10,465 sf 54.78% Impervious Runoff Depth=2.83"
Tc=5.0 min CN=WQ Runoff=0.70 cfs 2,472 cf

Subcatchment7S: EDA 7 Runoff Area=36,666 sf 26.96% Impervious Runoff Depth=1.48"
Flow Length=458' Tc=15.1 min CN=WQ Runoff=0.89 cfs 4,515 cf

Subcatchment8S: EDA 8 Runoff Area=19,027 sf 0.00% Impervious Runoff Depth=0.16"
Tc=5.0 min CN=WQ Runoff=0.06 cfs 246 cf

Subcatchment9S: EDA 9 Runoff Area=24,618 sf 29.04% Impervious Runoff Depth=1.62"
Flow Length=324' Tc=8.5 min CN=WQ Runoff=0.77 cfs 3,319 cf

Subcatchment10S: EDA 10 Runoff Area=89,075 sf 41.53% Impervious Runoff Depth=2.21"
Flow Length=540' Tc=15.5 min CN=WQ Runoff=3.32 cfs 16,380 cf

Reach ET1: EXISTING TRAPPED Avg. Flow Depth=0.05' Max Vel=0.43 fps Inflow=0.70 cfs 2,472 cf
n=0.022 L=25.0' S=0.0020 '/' Capacity=29.58 cfs Outflow=0.69 cfs 2,472 cf

Reach R1: REACH Avg. Flow Depth=0.09' Max Vel=1.03 fps Inflow=0.69 cfs 2,472 cf
n=0.022 L=304.0' S=0.0059 '/' Capacity=3.22 cfs Outflow=0.60 cfs 2,472 cf

Pond C1: EXISTING CULVERT Inflow=0.77 cfs 3,319 cf
Primary=0.77 cfs 3,319 cf

Pond C2: EXISTING CULVERT Inflow=1.43 cfs 6,988 cf
Primary=1.43 cfs 6,988 cf

Pond CB: EXISTING CB SYSTEM Inflow=10.30 cfs 35,350 cf
Primary=10.30 cfs 35,350 cf

Pond CB611: EXISTING CB 611 Inflow=0.16 cfs 603 cf
Primary=0.16 cfs 603 cf

Pond P1: SEDIMENT FOREBAY Peak Elev=320.15' Storage=1,525 cf Inflow=5.32 cfs 26,686 cf
Discarded=0.14 cfs 3,633 cf Primary=4.68 cfs 23,053 cf Outflow=4.82 cfs 26,686 cf

Pond P2: EXISTING RETENTION BASIN Peak Elev=318.33' Storage=32,241 cf Inflow=13.56 cfs 63,846 cf
Outflow=1.05 cfs 63,851 cf

Link POI 1: WESTERN PROPERTY BOUNDARY Inflow=0.06 cfs 246 cf
Primary=0.06 cfs 246 cf

Link POI 2: EXISTING ON-SITE RETENTION BASIN Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 3: MANCHESTERROAD Inflow=0.16 cfs 603 cf
Primary=0.16 cfs 603 cf

Total Runoff Area = 374,164 sf Runoff Volume = 68,328 cf Average Runoff Depth = 2.19"
58.31% Pervious = 218,176 sf 41.69% Impervious = 155,988 sf

Summary for Subcatchment 1S: EDA 1

Runoff = 3.68 cfs @ 12.07 hrs, Volume= 12,561 cf, Depth= 4.97"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	30,310	98	EXISTING BUILDING
	30,310		100.00% Impervious Area

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

Summary for Subcatchment 2S: EDA 2

Runoff = 1.36 cfs @ 12.07 hrs, Volume= 4,653 cf, Depth= 4.97"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	11,229	98	EXISTING BUILDING
	11,229		100.00% Impervious Area

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

Summary for Subcatchment 3S: EDA 3

Runoff = 5.26 cfs @ 12.07 hrs, Volume= 18,136 cf, Depth= 4.23"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	38,574	98	EXISTING PAVEMENT
*	4,792	98	EXISTING CONCRETE
	8,117	39	>75% Grass cover, Good, HSG A
	51,483		Weighted Average
	8,117		15.77% Pervious Area
	43,366		84.23% Impervious Area

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

Summary for Subcatchment 4S: EDA 4

Runoff = 0.69 cfs @ 12.38 hrs, Volume= 5,442 cf, Depth= 0.67"
Routed to Pond P2 : EXISTING RETENTION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	3,642	98	EXISTING PAVEMENT
*	1,073	98	EXISTING CONCRETE
*	5,252	98	EXISTING GRAVEL
	63,108	39	>75% Grass cover, Good, HSG A
	24,745	30	Woods, Good, HSG A
	0	77	Fallow, bare soil, HSG A
	97,820		Weighted Average
	87,853		89.81% Pervious Area
	9,967		10.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	50	0.0040	0.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.6	106	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	37	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.5	100	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.9	84	0.0010	0.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	26	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	98	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.5	501	Total			

Summary for Subcatchment 5S: EDA 5

Runoff = 0.16 cfs @ 12.07 hrs, Volume= 603 cf, Depth= 2.09"
Routed to Pond CB611 : EXISTING CB 611

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	1,352	98	EXISTING PAVEMENT
	2,119	39	>75% Grass cover, Good, HSG A
	3,471		Weighted Average
	2,119		61.05% Pervious Area
	1,352		38.95% Impervious Area

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

Summary for Subcatchment 6S: EDA 6

Runoff = 0.70 cfs @ 12.07 hrs, Volume= 2,472 cf, Depth= 2.83"
Routed to Reach ET1 : EXISTING TRAPPED LOWPOINT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	5,157	98	EXISTING PAVEMENT
*	576	98	EXISTING CONCRETE
	4,732	39	>75% Grass cover, Good, HSG A
	10,465		Weighted Average
	4,732		45.22% Pervious Area
	5,733		54.78% Impervious Area

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

Summary for Subcatchment 7S: EDA 7

Runoff = 0.89 cfs @ 12.20 hrs, Volume= 4,515 cf, Depth= 1.48"
Routed to Pond C2 : EXISTING CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	7,110	98	EXISTING PAVEMENT
*	2,776	98	EXISTING GRAVEL
	18,031	39	>75% Grass cover, Good, HSG A
	8,568	30	Woods, Good, HSG A
	181	77	Fallow, bare soil, HSG A
	36,666		Weighted Average
	26,780		73.04% Pervious Area
	9,886		26.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.12		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.3	125	0.0080	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.1	115	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	168	0.0065	0.56		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.1	458	Total			

Summary for Subcatchment 8S: EDA 8

Runoff = 0.06 cfs @ 12.08 hrs, Volume= 246 cf, Depth= 0.16"
Routed to Link POI 1 : WESTERN PROPERTY BOUNDARY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

Area (sf)	CN	Description
2,557	39	>75% Grass cover, Good, HSG A
15,709	30	Woods, Good, HSG A
761	77	Fallow, bare soil, HSG A
19,027		Weighted Average
19,027		100.00% Pervious Area

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

Summary for Subcatchment 9S: EDA 9

Runoff = 0.77 cfs @ 12.12 hrs, Volume= 3,319 cf, Depth= 1.62"
Routed to Pond C1 : EXISTING CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	6,964	98	EXISTING PAVEMENT
*	186	98	EXISTING CONCRETE
	17,468	39	>75% Grass cover, Good, HSG A
	24,618		Weighted Average
	17,468		70.96% Pervious Area
	7,150		29.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.12		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
7.8	274	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	324	Total			

Summary for Subcatchment 10S: EDA 10

Runoff = 3.32 cfs @ 12.21 hrs, Volume= 16,380 cf, Depth= 2.21"
Routed to Pond P1 : SEDIMENT FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	29,833	98	EXISTING PAVEMENT
*	5,473	98	EXISTING CONCRETE
*	1,689	98	EXISTING GRAVEL
	41,245	39	>75% Grass cover, Good, HSG A
	9,987	30	Woods, Good, HSG A
	848	77	Fallow, bare soil, HSG A
	89,075		Weighted Average
	52,080		58.47% Pervious Area
	36,995		41.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	50	0.0640	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 2.78"
13.9	490	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.5	540	Total			

Summary for Reach ET1: EXISTING TRAPPED LOWPOINT

Inflow Area = 10,465 sf, 54.78% Impervious, Inflow Depth = 2.83" for 25-yr event
Inflow = 0.70 cfs @ 12.07 hrs, Volume= 2,472 cf
Outflow = 0.69 cfs @ 12.08 hrs, Volume= 2,472 cf, Atten= 1%, Lag= 0.6 min
Routed to Reach R1 : REACH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.43 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 3.7 min

Peak Storage= 40 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 30.64'
Bank-Full Depth= 0.50' Flow Area= 16.5 sf, Capacity= 29.58 cfs

30.00' x 0.50' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 6.0 '/' Top Width= 36.00'
Length= 25.0' Slope= 0.0020 '/'
Inlet Invert= 324.30', Outlet Invert= 324.25'

‡

Summary for Reach R1: REACH

Inflow Area = 10,465 sf, 54.78% Impervious, Inflow Depth = 2.83" for 25-yr event
Inflow = 0.69 cfs @ 12.08 hrs, Volume= 2,472 cf
Outflow = 0.60 cfs @ 12.12 hrs, Volume= 2,472 cf, Atten= 13%, Lag= 2.6 min
Routed to Pond C2 : EXISTING CULVERT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.03 fps, Min. Travel Time= 4.9 min
Avg. Velocity = 0.24 fps, Avg. Travel Time= 21.5 min

Peak Storage= 177 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.09' , Surface Width= 6.56'
Bank-Full Depth= 0.25' Flow Area= 1.7 sf, Capacity= 3.22 cfs

6.00' x 0.25' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 7.50'
Length= 304.0' Slope= 0.0059 '/'
Inlet Invert= 324.20', Outlet Invert= 322.40'

‡

Summary for Pond C1: EXISTING CULVERT

Inflow Area = 24,618 sf, 29.04% Impervious, Inflow Depth = 1.62" for 25-yr event
Inflow = 0.77 cfs @ 12.12 hrs, Volume= 3,319 cf
Primary = 0.77 cfs @ 12.12 hrs, Volume= 3,319 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond C2: EXISTING CULVERT

Inflow Area = 47,131 sf, 33.14% Impervious, Inflow Depth = 1.78" for 25-yr event
Inflow = 1.43 cfs @ 12.16 hrs, Volume= 6,988 cf
Primary = 1.43 cfs @ 12.16 hrs, Volume= 6,988 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB: EXISTING CB SYSTEM

Inflow Area = 93,022 sf, 91.27% Impervious, Inflow Depth = 4.56" for 25-yr event
Inflow = 10.30 cfs @ 12.07 hrs, Volume= 35,350 cf
Primary = 10.30 cfs @ 12.07 hrs, Volume= 35,350 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB611: EXISTING CB 611

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 2.09" for 25-yr event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 603 cf
Primary = 0.16 cfs @ 12.07 hrs, Volume= 603 cf, Atten= 0%, Lag= 0.0 min
Routed to Link POI 3 : MANCHESTER ROAD

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond P1: SEDIMENT FOREBAY

Inflow Area = 160,824 sf, 37.16% Impervious, Inflow Depth = 1.99" for 25-yr event
Inflow = 5.32 cfs @ 12.18 hrs, Volume= 26,686 cf
Outflow = 4.82 cfs @ 12.25 hrs, Volume= 26,686 cf, Atten= 9%, Lag= 4.5 min
Discarded = 0.14 cfs @ 12.25 hrs, Volume= 3,633 cf
Primary = 4.68 cfs @ 12.25 hrs, Volume= 23,053 cf
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 320.15' @ 12.25 hrs Surf.Area= 1,994 sf Storage= 1,525 cf
Flood Elev= 323.00' Surf.Area= 11,055 sf Storage= 19,127 cf

Plug-Flow detention time= 14.5 min calculated for 26,682 cf (100% of inflow)
Center-of-Mass det. time= 14.6 min (787.0 - 772.4)

Volume	Invert	Avail.Storage	Storage Description
#1	318.00'	19,127 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.00	15	0	0	15
320.00	1,700	1,250	1,250	1,708
322.00	7,605	8,600	9,850	7,630
323.00	11,055	9,276	19,127	11,097

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.00'	**3.000 in/hr Exfiltration over Wetted area**
#2	Primary	318.90'	**18.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 318.90' / 318.70' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Discarded OutFlow Max=0.14 cfs @ 12.25 hrs HW=320.15' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=4.68 cfs @ 12.25 hrs HW=320.15' TW=317.52' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 4.68 cfs @ 4.03 fps)

Summary for Pond P2: EXISTING RETENTION BASIN

Inflow Area = 351,666 sf, 43.97% Impervious, Inflow Depth = 2.18" for 25-yr event
Inflow = 13.56 cfs @ 12.08 hrs, Volume= 63,846 cf
Outflow = 1.05 cfs @ 14.04 hrs, Volume= 63,851 cf, Atten= 92%, Lag= 117.8 min
Discarded = 1.05 cfs @ 14.04 hrs, Volume= 63,851 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 318.33' @ 14.04 hrs Surf.Area= 15,031 sf Storage= 32,241 cf
Flood Elev= 323.00' Surf.Area= 35,653 sf Storage= 149,415 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 335.1 min (1,100.7 - 765.6)

Volume	Invert	Avail.Storage	Storage Description
#1	315.00'	86,245 cf	**FOREBAY (Conic)**Listed below (Recalc)
#2	315.00'	63,170 cf	**RETENTION BASIN (Conic)**Listed below (Recalc)
		149,415 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	1,827	0	0	1,827
316.00	3,401	2,574	2,574	3,411
317.00	4,296	3,840	6,413	4,333
318.00	6,953	5,571	11,985	7,003
319.00	9,664	8,271	20,256	9,733
320.00	13,341	11,453	31,709	13,429
321.00	16,596	14,939	46,648	16,713
322.00	19,695	18,123	64,772	19,849
323.00	23,301	21,473	86,245	23,492

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	3,348	0	0	3,348
316.00	4,675	3,993	3,993	4,694
317.00	5,784	5,220	9,213	5,832
318.00	6,919	6,343	15,556	7,001
319.00	7,946	7,427	22,982	8,073
320.00	8,947	8,442	31,424	9,126
321.00	9,999	9,468	40,892	10,233
322.00	11,113	10,551	51,443	11,405
323.00	12,352	11,727	63,170	12,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	315.00'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=1.05 cfs @ 14.04 hrs HW=318.33' (Free Discharge)
1=Exfiltration (Exfiltration Controls 1.05 cfs)

Summary for Link POI 1: WESTERN PROPERTY BOUNDARY

Inflow Area = 19,027 sf, 0.00% Impervious, Inflow Depth = 0.16" for 25-yr event
Inflow = 0.06 cfs @ 12.08 hrs, Volume= 246 cf
Primary = 0.06 cfs @ 12.08 hrs, Volume= 246 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 2: EXISTING ON-SITE RETENTION BASIN

Inflow Area = 351,666 sf, 43.97% Impervious, Inflow Depth = 0.00" for 25-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 3: MANCHESTER ROAD

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 2.09" for 25-yr event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 603 cf
Primary = 0.16 cfs @ 12.07 hrs, Volume= 603 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: EDA 1 Runoff Area=30,310 sf 100.00% Impervious Runoff Depth=5.94"
Tc=5.0 min CN=98 Runoff=4.37 cfs 15,008 cf

Subcatchment2S: EDA 2 Runoff Area=11,229 sf 100.00% Impervious Runoff Depth=5.94"
Tc=5.0 min CN=98 Runoff=1.62 cfs 5,560 cf

Subcatchment3S: EDA 3 Runoff Area=51,483 sf 84.23% Impervious Runoff Depth=5.08"
Tc=5.0 min CN=WQ Runoff=6.25 cfs 21,809 cf

Subcatchment4S: EDA 4 Runoff Area=97,820 sf 10.19% Impervious Runoff Depth=0.95"
Flow Length=501' Tc=28.5 min CN=WQ Runoff=0.94 cfs 7,745 cf

Subcatchment5S: EDA 5 Runoff Area=3,471 sf 38.95% Impervious Runoff Depth=2.62"
Tc=5.0 min CN=WQ Runoff=0.20 cfs 757 cf

Subcatchment6S: EDA 6 Runoff Area=10,465 sf 54.78% Impervious Runoff Depth=3.48"
Tc=5.0 min CN=WQ Runoff=0.83 cfs 3,035 cf

Subcatchment7S: EDA 7 Runoff Area=36,666 sf 26.96% Impervious Runoff Depth=1.89"
Flow Length=458' Tc=15.1 min CN=WQ Runoff=1.09 cfs 5,764 cf

Subcatchment8S: EDA 8 Runoff Area=19,027 sf 0.00% Impervious Runoff Depth=0.29"
Tc=5.0 min CN=WQ Runoff=0.08 cfs 457 cf

Subcatchment9S: EDA 9 Runoff Area=24,618 sf 29.04% Impervious Runoff Depth=2.08"
Flow Length=324' Tc=8.5 min CN=WQ Runoff=0.94 cfs 4,266 cf

Subcatchment10S: EDA 10 Runoff Area=89,075 sf 41.53% Impervious Runoff Depth=2.74"
Flow Length=540' Tc=15.5 min CN=WQ Runoff=4.01 cfs 20,364 cf

Reach ET1: EXISTING TRAPPED Avg. Flow Depth=0.06' Max Vel=0.46 fps Inflow=0.83 cfs 3,035 cf
n=0.022 L=25.0' S=0.0020 '/' Capacity=29.58 cfs Outflow=0.82 cfs 3,035 cf

Reach R1: REACH Avg. Flow Depth=0.10' Max Vel=1.11 fps Inflow=0.82 cfs 3,035 cf
n=0.022 L=304.0' S=0.0059 '/' Capacity=3.22 cfs Outflow=0.73 cfs 3,035 cf

Pond C1: EXISTING CULVERT Inflow=0.94 cfs 4,266 cf
Primary=0.94 cfs 4,266 cf

Pond C2: EXISTING CULVERT Inflow=1.72 cfs 8,799 cf
Primary=1.72 cfs 8,799 cf

Pond CB: EXISTING CB SYSTEM Inflow=12.24 cfs 42,377 cf
Primary=12.24 cfs 42,377 cf

Pond CB611: EXISTING CB 611 Inflow=0.20 cfs 757 cf
Primary=0.20 cfs 757 cf

Pond P1: SEDIMENT FOREBAY Peak Elev=320.31' Storage=1,870 cf Inflow=6.45 cfs 33,429 cf
Discarded=0.16 cfs 3,883 cf Primary=5.61 cfs 29,546 cf Outflow=5.78 cfs 33,429 cf

Pond P2: EXISTING RETENTION BASIN Peak Elev=318.89' Storage=41,387 cf Inflow=16.12 cfs 79,668 cf
Outflow=1.21 cfs 79,673 cf

Link POI 1: WESTERN PROPERTY BOUNDARY Inflow=0.08 cfs 457 cf
Primary=0.08 cfs 457 cf

Link POI 2: EXISTING ON-SITE RETENTION BASIN Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 3: MANCHESTERROAD Inflow=0.20 cfs 757 cf
Primary=0.20 cfs 757 cf

Total Runoff Area = 374,164 sf Runoff Volume = 84,766 cf Average Runoff Depth = 2.72"
58.31% Pervious = 218,176 sf 41.69% Impervious = 155,988 sf

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: EDA 1 Runoff Area=30,310 sf 100.00% Impervious Runoff Depth=7.08"
Tc=5.0 min CN=98 Runoff=5.18 cfs 17,885 cf

Subcatchment2S: EDA 2 Runoff Area=11,229 sf 100.00% Impervious Runoff Depth=7.08"
Tc=5.0 min CN=98 Runoff=1.92 cfs 6,626 cf

Subcatchment3S: EDA 3 Runoff Area=51,483 sf 84.23% Impervious Runoff Depth=6.10"
Tc=5.0 min CN=WQ Runoff=7.50 cfs 26,188 cf

Subcatchment4S: EDA 4 Runoff Area=97,820 sf 10.19% Impervious Runoff Depth=1.36"
Flow Length=501' Tc=28.5 min CN=WQ Runoff=1.42 cfs 11,099 cf

Subcatchment5S: EDA 5 Runoff Area=3,471 sf 38.95% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=WQ Runoff=0.25 cfs 954 cf

Subcatchment6S: EDA 6 Runoff Area=10,465 sf 54.78% Impervious Runoff Depth=4.28"
Tc=5.0 min CN=WQ Runoff=1.03 cfs 3,732 cf

Subcatchment7S: EDA 7 Runoff Area=36,666 sf 26.96% Impervious Runoff Depth=2.43"
Flow Length=458' Tc=15.1 min CN=WQ Runoff=1.40 cfs 7,428 cf

Subcatchment8S: EDA 8 Runoff Area=19,027 sf 0.00% Impervious Runoff Depth=0.53"
Tc=5.0 min CN=WQ Runoff=0.13 cfs 839 cf

Subcatchment9S: EDA 9 Runoff Area=24,618 sf 29.04% Impervious Runoff Depth=2.69"
Flow Length=324' Tc=8.5 min CN=WQ Runoff=1.26 cfs 5,509 cf

Subcatchment10S: EDA 10 Runoff Area=89,075 sf 41.53% Impervious Runoff Depth=3.43"
Flow Length=540' Tc=15.5 min CN=WQ Runoff=5.01 cfs 25,429 cf

Reach ET1: EXISTING TRAPPED Avg. Flow Depth=0.07' Max Vel=0.50 fps Inflow=1.03 cfs 3,732 cf
n=0.022 L=25.0' S=0.0020 '/' Capacity=29.58 cfs Outflow=1.02 cfs 3,732 cf

Reach R1: REACH Avg. Flow Depth=0.12' Max Vel=1.21 fps Inflow=1.02 cfs 3,732 cf
n=0.022 L=304.0' S=0.0059 '/' Capacity=3.22 cfs Outflow=0.92 cfs 3,732 cf

Pond C1: EXISTING CULVERT Inflow=1.26 cfs 5,509 cf
Primary=1.26 cfs 5,509 cf

Pond C2: EXISTING CULVERT Inflow=2.16 cfs 11,160 cf
Primary=2.16 cfs 11,160 cf

Pond CB: EXISTING CB SYSTEM Inflow=14.59 cfs 50,698 cf
Primary=14.59 cfs 50,698 cf

Pond CB611: EXISTING CB 611 Inflow=0.25 cfs 954 cf
Primary=0.25 cfs 954 cf

Pond P1: SEDIMENT FOREBAY Peak Elev=320.53' Storage=2,454 cf Inflow=8.15 cfs 42,098 cf
Discarded=0.20 cfs 4,547 cf Primary=6.88 cfs 37,551 cf Outflow=7.08 cfs 42,098 cf

Pond P2: EXISTING RETENTION BASIN Peak Elev=319.53' Storage=53,131 cf Inflow=19.23 cfs 99,348 cf
Outflow=1.40 cfs 99,351 cf

Link POI 1: WESTERN PROPERTY BOUNDARY Inflow=0.13 cfs 839 cf
Primary=0.13 cfs 839 cf

Link POI 2: EXISTING ON-SITE RETENTION BASIN Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 3: MANCHESTERROAD Inflow=0.25 cfs 954 cf
Primary=0.25 cfs 954 cf

Total Runoff Area = 374,164 sf Runoff Volume = 105,687 cf Average Runoff Depth = 3.39"
58.31% Pervious = 218,176 sf 41.69% Impervious = 155,988 sf

Summary for Subcatchment 1S: EDA 1

Runoff = 5.18 cfs @ 12.07 hrs, Volume= 17,885 cf, Depth= 7.08"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	30,310	98	EXISTING BUILDING
	30,310		100.00% Impervious Area

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

Summary for Subcatchment 2S: EDA 2

Runoff = 1.92 cfs @ 12.07 hrs, Volume= 6,626 cf, Depth= 7.08"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	11,229	98	EXISTING BUILDING
	11,229		100.00% Impervious Area

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

Summary for Subcatchment 3S: EDA 3

Runoff = 7.50 cfs @ 12.07 hrs, Volume= 26,188 cf, Depth= 6.10"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	38,574	98	EXISTING PAVEMENT
*	4,792	98	EXISTING CONCRETE
	8,117	39	>75% Grass cover, Good, HSG A
	51,483		Weighted Average
	8,117		15.77% Pervious Area
	43,366		84.23% Impervious Area

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

Summary for Subcatchment 4S: EDA 4

Runoff = 1.42 cfs @ 12.45 hrs, Volume= 11,099 cf, Depth= 1.36"
Routed to Pond P2 : EXISTING RETENTION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	3,642	98	EXISTING PAVEMENT
*	1,073	98	EXISTING CONCRETE
*	5,252	98	EXISTING GRAVEL
	63,108	39	>75% Grass cover, Good, HSG A
	24,745	30	Woods, Good, HSG A
	0	77	Fallow, bare soil, HSG A
	97,820		Weighted Average
	87,853		89.81% Pervious Area
	9,967		10.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	50	0.0040	0.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.6	106	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	37	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.5	100	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.9	84	0.0010	0.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	26	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	98	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.5	501	Total			

Summary for Subcatchment 5S: EDA 5

Runoff = 0.25 cfs @ 12.08 hrs, Volume= 954 cf, Depth= 3.30"
Routed to Pond CB611 : EXISTING CB 611

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	1,352	98	EXISTING PAVEMENT
	2,119	39	>75% Grass cover, Good, HSG A
	3,471		Weighted Average
	2,119		61.05% Pervious Area
	1,352		38.95% Impervious Area

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

Summary for Subcatchment 6S: EDA 6

Runoff = 1.03 cfs @ 12.07 hrs, Volume= 3,732 cf, Depth= 4.28"
Routed to Reach ET1 : EXISTING TRAPPED LOWPOINT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	5,157	98	EXISTING PAVEMENT
*	576	98	EXISTING CONCRETE
	4,732	39	>75% Grass cover, Good, HSG A
	10,465		Weighted Average
	4,732		45.22% Pervious Area
	5,733		54.78% Impervious Area

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

Summary for Subcatchment 7S: EDA 7

Runoff = 1.40 cfs @ 12.21 hrs, Volume= 7,428 cf, Depth= 2.43"
Routed to Pond C2 : EXISTING CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	7,110	98	EXISTING PAVEMENT
*	2,776	98	EXISTING GRAVEL
	18,031	39	>75% Grass cover, Good, HSG A
	8,568	30	Woods, Good, HSG A
	181	77	Fallow, bare soil, HSG A
	36,666		Weighted Average
	26,780		73.04% Pervious Area
	9,886		26.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.12		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.3	125	0.0080	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.1	115	0.0040	0.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	168	0.0065	0.56		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.1	458	Total			

Summary for Subcatchment 8S: EDA 8

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 839 cf, Depth= 0.53"
Routed to Link POI 1 : WESTERN PROPERTY BOUNDARY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

Area (sf)	CN	Description
2,557	39	>75% Grass cover, Good, HSG A
15,709	30	Woods, Good, HSG A
761	77	Fallow, bare soil, HSG A
19,027		Weighted Average
19,027		100.00% Pervious Area

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

Summary for Subcatchment 9S: EDA 9

Runoff = 1.26 cfs @ 12.12 hrs, Volume= 5,509 cf, Depth= 2.69"
Routed to Pond C1 : EXISTING CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	6,964	98	EXISTING PAVEMENT
*	186	98	EXISTING CONCRETE
	17,468	39	>75% Grass cover, Good, HSG A
	24,618		Weighted Average
	17,468		70.96% Pervious Area
	7,150		29.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.12		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
7.8	274	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	324	Total			

Summary for Subcatchment 10S: EDA 10

Runoff = 5.01 cfs @ 12.21 hrs, Volume= 25,429 cf, Depth= 3.43"
Routed to Pond P1 : SEDIMENT FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	29,833	98	EXISTING PAVEMENT
*	5,473	98	EXISTING CONCRETE
*	1,689	98	EXISTING GRAVEL
	41,245	39	>75% Grass cover, Good, HSG A
	9,987	30	Woods, Good, HSG A
	848	77	Fallow, bare soil, HSG A
	89,075		Weighted Average
	52,080		58.47% Pervious Area
	36,995		41.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	50	0.0640	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 2.78"
13.9	490	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.5	540	Total			

Summary for Reach ET1: EXISTING TRAPPED LOWPOINT

Inflow Area = 10,465 sf, 54.78% Impervious, Inflow Depth = 4.28" for 100-yr event
Inflow = 1.03 cfs @ 12.07 hrs, Volume= 3,732 cf
Outflow = 1.02 cfs @ 12.08 hrs, Volume= 3,732 cf, Atten= 1%, Lag= 0.5 min
Routed to Reach R1 : REACH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.50 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 3.4 min

Peak Storage= 51 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.07' , Surface Width= 30.81'
Bank-Full Depth= 0.50' Flow Area= 16.5 sf, Capacity= 29.58 cfs

30.00' x 0.50' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 6.0 '/' Top Width= 36.00'
Length= 25.0' Slope= 0.0020 '/'
Inlet Invert= 324.30', Outlet Invert= 324.25'

‡

Summary for Reach R1: REACH

Inflow Area = 10,465 sf, 54.78% Impervious, Inflow Depth = 4.28" for 100-yr event
Inflow = 1.02 cfs @ 12.08 hrs, Volume= 3,732 cf
Outflow = 0.92 cfs @ 12.12 hrs, Volume= 3,732 cf, Atten= 11%, Lag= 2.3 min
Routed to Pond C2 : EXISTING CULVERT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.21 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 0.27 fps, Avg. Travel Time= 18.5 min

Peak Storage= 230 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.12' , Surface Width= 6.71'
Bank-Full Depth= 0.25' Flow Area= 1.7 sf, Capacity= 3.22 cfs

6.00' x 0.25' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 7.50'
Length= 304.0' Slope= 0.0059 '/'
Inlet Invert= 324.20', Outlet Invert= 322.40'

‡

Summary for Pond C1: EXISTING CULVERT

Inflow Area = 24,618 sf, 29.04% Impervious, Inflow Depth = 2.69" for 100-yr event
Inflow = 1.26 cfs @ 12.12 hrs, Volume= 5,509 cf
Primary = 1.26 cfs @ 12.12 hrs, Volume= 5,509 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond C2: EXISTING CULVERT

Inflow Area = 47,131 sf, 33.14% Impervious, Inflow Depth = 2.84" for 100-yr event
Inflow = 2.16 cfs @ 12.16 hrs, Volume= 11,160 cf
Primary = 2.16 cfs @ 12.16 hrs, Volume= 11,160 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB: EXISTING CB SYSTEM

Inflow Area = 93,022 sf, 91.27% Impervious, Inflow Depth = 6.54" for 100-yr event
Inflow = 14.59 cfs @ 12.07 hrs, Volume= 50,698 cf
Primary = 14.59 cfs @ 12.07 hrs, Volume= 50,698 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB611: EXISTING CB 611

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 3.30" for 100-yr event
Inflow = 0.25 cfs @ 12.08 hrs, Volume= 954 cf
Primary = 0.25 cfs @ 12.08 hrs, Volume= 954 cf, Atten= 0%, Lag= 0.0 min
Routed to Link POI 3 : MANCHESTER ROAD

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond P1: SEDIMENT FOREBAY

Inflow Area = 160,824 sf, 37.16% Impervious, Inflow Depth = 3.14" for 100-yr event
Inflow = 8.15 cfs @ 12.18 hrs, Volume= 42,098 cf
Outflow = 7.08 cfs @ 12.28 hrs, Volume= 42,098 cf, Atten= 13%, Lag= 6.0 min
Discarded = 0.20 cfs @ 12.28 hrs, Volume= 4,547 cf
Primary = 6.88 cfs @ 12.28 hrs, Volume= 37,551 cf
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 320.53' @ 12.28 hrs Surf.Area= 2,862 sf Storage= 2,454 cf
Flood Elev= 323.00' Surf.Area= 11,055 sf Storage= 19,127 cf

Plug-Flow detention time= 13.1 min calculated for 42,092 cf (100% of inflow)
Center-of-Mass det. time= 13.1 min (793.0 - 780.0)

Volume	Invert	Avail.Storage	Storage Description
#1	318.00'	19,127 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.00	15	0	0	15
320.00	1,700	1,250	1,250	1,708
322.00	7,605	8,600	9,850	7,630
323.00	11,055	9,276	19,127	11,097

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.00'	**3.000 in/hr Exfiltration over Wetted area**
#2	Primary	318.90'	**18.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 318.90' / 318.70' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Discarded OutFlow Max=0.20 cfs @ 12.28 hrs HW=320.53' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.20 cfs)

Primary OutFlow Max=6.87 cfs @ 12.28 hrs HW=320.53' TW=318.47' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 6.87 cfs @ 4.45 fps)

Summary for Pond P2: EXISTING RETENTION BASIN

Inflow Area = 351,666 sf, 43.97% Impervious, Inflow Depth = 3.39" for 100-yr event
Inflow = 19.23 cfs @ 12.08 hrs, Volume= 99,348 cf
Outflow = 1.40 cfs @ 14.76 hrs, Volume= 99,351 cf, Atten= 93%, Lag= 160.8 min
Discarded = 1.40 cfs @ 14.76 hrs, Volume= 99,351 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 319.53' @ 14.76 hrs Surf.Area= 19,992 sf Storage= 53,131 cf
Flood Elev= 323.00' Surf.Area= 35,653 sf Storage= 149,415 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 440.1 min (1,212.6 - 772.5)

Volume	Invert	Avail.Storage	Storage Description
#1	315.00'	86,245 cf	**FOREBAY (Conic)**Listed below (Recalc)
#2	315.00'	63,170 cf	**RETENTION BASIN (Conic)**Listed below (Recalc)
		149,415 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	1,827	0	0	1,827
316.00	3,401	2,574	2,574	3,411
317.00	4,296	3,840	6,413	4,333
318.00	6,953	5,571	11,985	7,003
319.00	9,664	8,271	20,256	9,733
320.00	13,341	11,453	31,709	13,429
321.00	16,596	14,939	46,648	16,713
322.00	19,695	18,123	64,772	19,849
323.00	23,301	21,473	86,245	23,492

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	3,348	0	0	3,348
316.00	4,675	3,993	3,993	4,694
317.00	5,784	5,220	9,213	5,832
318.00	6,919	6,343	15,556	7,001
319.00	7,946	7,427	22,982	8,073
320.00	8,947	8,442	31,424	9,126
321.00	9,999	9,468	40,892	10,233
322.00	11,113	10,551	51,443	11,405
323.00	12,352	11,727	63,170	12,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	315.00'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=1.40 cfs @ 14.76 hrs HW=319.53' (Free Discharge)
1=Exfiltration (Exfiltration Controls 1.40 cfs)

Summary for Link POI 1: WESTERN PROPERTY BOUNDARY

Inflow Area = 19,027 sf, 0.00% Impervious, Inflow Depth = 0.53" for 100-yr event
Inflow = 0.13 cfs @ 12.09 hrs, Volume= 839 cf
Primary = 0.13 cfs @ 12.09 hrs, Volume= 839 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 2: EXISTING ON-SITE RETENTION BASIN

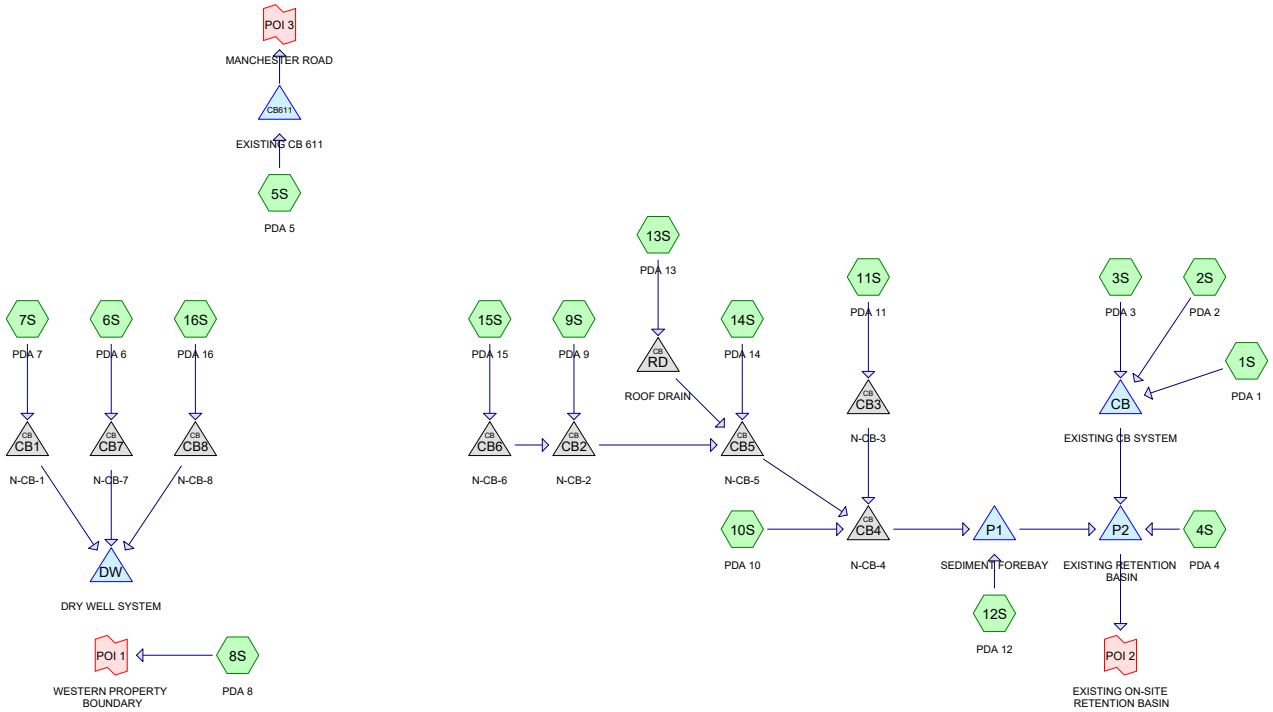
Inflow Area = 351,666 sf, 43.97% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 3: MANCHESTER ROAD

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 3.30" for 100-yr event
Inflow = 0.25 cfs @ 12.08 hrs, Volume= 954 cf
Primary = 0.25 cfs @ 12.08 hrs, Volume= 954 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for Post-development_PRM0002
Prepared by Wilcox & Barton, Inc, Printed 4/14/2026
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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	2.82	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
113,304	39	>75% Grass cover, Good, HSG A (3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 12S, 14S, 16S)
41,420	98	EXISTING BUILDING (1S, 2S)
9,789	98	EXISTING CONCRETE (3S, 4S, 10S, 12S)
6,627	98	EXISTING GRAVEL (4S, 12S)
61,875	98	EXISTING PAVEMENT (3S, 4S, 5S, 6S, 7S, 10S, 12S, 16S)
2,470	98	PROPOSED BUILDING (13S)
2,028	98	PROPOSED CONCRETE (3S, 10S, 14S, 15S)
103,051	98	PROPOSED PAVEMENT (3S, 6S, 7S, 9S, 10S, 11S, 12S, 14S, 15S, 16S)
535	98	PROPOSED SIDEWALK (3S, 15S, 16S)
33,065	30	Woods, Good, HSG A (4S, 8S, 12S)
374,164	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
146,369	HSG A	3S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 12S, 14S, 16S
0	HSG B	
0	HSG C	
0	HSG D	
227,795	Other	1S, 2S, 3S, 4S, 5S, 6S, 7S, 9S, 10S, 11S, 12S, 13S, 14S, 15S, 16S
374,164		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
113,304	0	0	0	0	113,304	>75% Grass cover, Good	
0	0	0	0	41,420	41,420	EXISTING BUILDING	
0	0	0	0	9,789	9,789	EXISTING CONCRETE	
0	0	0	0	6,627	6,627	EXISTING GRAVEL	
0	0	0	0	61,875	61,875	EXISTING PAVEMENT	
0	0	0	0	2,470	2,470	PROPOSED BUILDING	
0	0	0	0	2,028	2,028	PROPOSED CONCRETE	
0	0	0	0	103,051	103,051	PROPOSED PAVEMENT	
0	0	0	0	535	535	PROPOSED SIDEWALK	
33,065	0	0	0	0	33,065	Woods, Good	
146,369	**0**	**0**	**0**	**227,795**	**374,164**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	CB1	320.50	320.30	38.0	0.0053	0.012	0.0	12.0	0.0	
2	CB2	323.00	322.50	99.0	0.0051	0.012	0.0	12.0	0.0	
3	CB3	323.00	321.50	296.0	0.0051	0.012	0.0	12.0	0.0	
4	CB4	320.50	319.50	186.0	0.0054	0.012	0.0	24.0	0.0	
5	CB5	322.00	321.00	202.0	0.0050	0.012	0.0	18.0	0.0	
6	CB6	323.30	323.10	32.0	0.0062	0.012	0.0	12.0	0.0	
7	CB7	320.15	320.10	11.0	0.0045	0.012	0.0	12.0	0.0	
8	CB8	321.00	320.30	40.0	0.0175	0.012	0.0	12.0	0.0	
9	P1	318.90	318.70	40.0	0.0050	0.012	0.0	18.0	0.0	
10	RD	323.00	322.50	57.0	0.0088	0.012	0.0	6.0	0.0	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PDA 1 Runoff Area=30,191 sf 100.00% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=98 Runoff=1.96 cfs 6,514 cf

Subcatchment2S: PDA 2 Runoff Area=11,229 sf 100.00% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=98 Runoff=0.73 cfs 2,423 cf

Subcatchment3S: PDA 3 Runoff Area=51,228 sf 88.80% Impervious Runoff Depth=2.30"
Tc=5.0 min CN=WQ Runoff=2.95 cfs 9,814 cf

Subcatchment4S: PDA 4 Runoff Area=97,635 sf 9.67% Impervious Runoff Depth=0.25"
Flow Length=501' Tc=28.5 min CN=WQ Runoff=0.35 cfs 2,038 cf

Subcatchment5S: PDA 5 Runoff Area=3,471 sf 38.95% Impervious Runoff Depth=1.01"
Tc=5.0 min CN=WQ Runoff=0.09 cfs 292 cf

Subcatchment6S: PDA 6 Runoff Area=11,070 sf 59.68% Impervious Runoff Depth=1.55"
Flow Length=92' Tc=6.3 min CN=WQ Runoff=0.41 cfs 1,425 cf

Subcatchment7S: PDA 7 Runoff Area=8,168 sf 71.33% Impervious Runoff Depth=1.85"
Tc=5.0 min CN=WQ Runoff=0.38 cfs 1,257 cf

Subcatchment8S: PDA 8 Runoff Area=11,051 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=WQ Runoff=0.00 cfs 0 cf

Subcatchment9S: PDA 9 Runoff Area=10,271 sf 87.27% Impervious Runoff Depth=2.26"
Tc=5.0 min CN=WQ Runoff=0.58 cfs 1,934 cf

Subcatchment10S: PDA 10 Runoff Area=34,045 sf 90.99% Impervious Runoff Depth=2.36"
Tc=5.0 min CN=WQ Runoff=2.01 cfs 6,684 cf

Subcatchment11S: PDA 11 Runoff Area=16,410 sf 100.00% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=98 Runoff=1.06 cfs 3,541 cf

Subcatchment12S: PDA 12 Runoff Area=71,168 sf 65.70% Impervious Runoff Depth=1.70"
Tc=5.0 min CN=WQ Runoff=3.03 cfs 10,088 cf

Subcatchment13S: PDA 13 Runoff Area=2,470 sf 100.00% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=98 Runoff=0.16 cfs 533 cf

Subcatchment14S: PDA 14 Runoff Area=7,681 sf 89.66% Impervious Runoff Depth=2.32"
Tc=5.0 min CN=WQ Runoff=0.45 cfs 1,486 cf

Subcatchment15S: PDA 15 Runoff Area=3,865 sf 100.00% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=WQ Runoff=0.25 cfs 834 cf

Subcatchment16S: PDA 16 Runoff Area=4,211 sf 31.51% Impervious Runoff Depth=0.82"
Tc=5.0 min CN=WQ Runoff=0.09 cfs 286 cf

Pond CB: EXISTING CB SYSTEM Inflow=5.64 cfs 18,751 cf
Primary=5.64 cfs 18,751 cf

Pond CB1: N-CB-1 Peak Elev=320.85' Inflow=0.38 cfs 1,257 cf
12.0" Round Culvert n=0.012 L=38.0' S=0.0053 '/' Outflow=0.38 cfs 1,257 cf

Pond CB2: N-CB-2 Peak Elev=323.52' Inflow=0.83 cfs 2,768 cf
12.0" Round Culvert n=0.012 L=99.0' S=0.0051 '/' Outflow=0.83 cfs 2,768 cf

Pond CB3: N-CB-3 Peak Elev=323.59' Inflow=1.06 cfs 3,541 cf
12.0" Round Culvert n=0.012 L=296.0' S=0.0051 '/' Outflow=1.06 cfs 3,541 cf

Pond CB4: N-CB-4 Peak Elev=321.47' Inflow=4.51 cfs 15,011 cf
24.0" Round Culvert n=0.012 L=186.0' S=0.0054 '/' Outflow=4.51 cfs 15,011 cf

Pond CB5: N-CB-5 Peak Elev=322.59' Inflow=1.44 cfs 4,787 cf
18.0" Round Culvert n=0.012 L=202.0' S=0.0050 '/' Outflow=1.44 cfs 4,787 cf

Pond CB6: N-CB-6 Peak Elev=323.64' Inflow=0.25 cfs 834 cf
12.0" Round Culvert n=0.012 L=32.0' S=0.0062 '/' Outflow=0.25 cfs 834 cf

Pond CB611: EXISTING CB 611 Inflow=0.09 cfs 292 cf
Primary=0.09 cfs 292 cf

Pond CB7: N-CB-7 Peak Elev=320.54' Inflow=0.41 cfs 1,425 cf
12.0" Round Culvert n=0.012 L=11.0' S=0.0045 '/' Outflow=0.41 cfs 1,425 cf

Pond CB8: N-CB-8 Peak Elev=321.14' Inflow=0.09 cfs 286 cf
12.0" Round Culvert n=0.012 L=40.0' S=0.0175 '/' Outflow=0.09 cfs 286 cf

Pond DW: DRY WELL SYSTEM Peak Elev=313.69' Storage=1,060 cf Inflow=0.87 cfs 2,969 cf
Outflow=0.08 cfs 2,970 cf

Pond P1: SEDIMENT FOREBAY Peak Elev=320.36' Storage=1,845 cf Inflow=7.55 cfs 25,099 cf
Discarded=0.14 cfs 3,260 cf Primary=5.94 cfs 21,839 cf Outflow=6.08 cfs 25,099 cf

Pond P2: EXISTING RETENTION BASIN Peak Elev=317.50' Storage=21,148 cf Inflow=11.29 cfs 42,628 cf
Outflow=0.83 cfs 42,628 cf

Pond RD: ROOF DRAIN Peak Elev=323.25' Inflow=0.16 cfs 533 cf
6.0" Round Culvert n=0.012 L=57.0' S=0.0088 '/' Outflow=0.16 cfs 533 cf

Link POI 1: WESTERN PROPERTY BOUNDARY Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 2: EXISTING ON-SITE RETENTION BASIN Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 3: MANCHESTERROAD Inflow=0.09 cfs 292 cf
Primary=0.09 cfs 292 cf

Total Runoff Area = 374,164 sf Runoff Volume = 49,148 cf Average Runoff Depth = 1.58"
39.12% Pervious = 146,369 sf 60.88% Impervious = 227,795 sf

Summary for Subcatchment 1S: PDA 1

Runoff = 1.96 cfs @ 12.07 hrs, Volume= 6,514 cf, Depth= 2.59"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	30,191	98	EXISTING BUILDING
	30,191		100.00% Impervious Area

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

Summary for Subcatchment 2S: PDA 2

Runoff = 0.73 cfs @ 12.07 hrs, Volume= 2,423 cf, Depth= 2.59"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	11,229	98	EXISTING BUILDING
	11,229		100.00% Impervious Area

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

Summary for Subcatchment 3S: PDA 3

Runoff = 2.95 cfs @ 12.07 hrs, Volume= 9,814 cf, Depth= 2.30"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	22,392	98	EXISTING PAVEMENT
*	3,765	98	EXISTING CONCRETE
*	17,894	98	PROPOSED PAVEMENT
*	1,223	98	PROPOSED CONCRETE
*	214	98	PROPOSED SIDEWALK
	5,740	39	>75% Grass cover, Good, HSG A
	51,228		Weighted Average
	5,740		11.20% Pervious Area
	45,488		88.80% Impervious Area

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

Summary for Subcatchment 4S: PDA 4

Runoff = 0.35 cfs @ 12.38 hrs, Volume= 2,038 cf, Depth= 0.25"
Routed to Pond P2 : EXISTING RETENTION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	3,663	98	EXISTING PAVEMENT
*	529	98	EXISTING CONCRETE
*	5,252	98	EXISTING GRAVEL
	63,236	39	>75% Grass cover, Good, HSG A
	24,955	30	Woods, Good, HSG A
	97,635		Weighted Average
	88,191		90.33% Pervious Area
	9,444		9.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	50	0.0040	0.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.6	106	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	37	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.5	100	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.9	84	0.0010	0.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	26	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	98	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.5	501	Total			

Summary for Subcatchment 5S: PDA 5

Runoff = 0.09 cfs @ 12.07 hrs, Volume= 292 cf, Depth= 1.01"
Routed to Pond CB611 : EXISTING CB 611

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	1,352	98	EXISTING PAVEMENT
	2,119	39	>75% Grass cover, Good, HSG A
	3,471		Weighted Average
	2,119		61.05% Pervious Area
	1,352		38.95% Impervious Area

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

Summary for Subcatchment 6S: PDA 6

Runoff = 0.41 cfs @ 12.09 hrs, Volume= 1,425 cf, Depth= 1.55"
Routed to Pond CB7 : N-CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	5,218	98	EXISTING PAVEMENT
*	1,389	98	PROPOSED PAVEMENT
	4,463	39	>75% Grass cover, Good, HSG A
	11,070		Weighted Average
	4,463		40.32% Pervious Area
	6,607		59.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.0260	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.78"
0.9	42	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.3	92	Total			

Summary for Subcatchment 7S: PDA 7

Runoff = 0.38 cfs @ 12.07 hrs, Volume= 1,257 cf, Depth= 1.85"
Routed to Pond CB1 : N-CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	2,970	98	EXISTING PAVEMENT
*	2,856	98	PROPOSED PAVEMENT
	2,342	39	>75% Grass cover, Good, HSG A
	8,168		Weighted Average
	2,342		28.67% Pervious Area
	5,826		71.33% Impervious Area

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

Summary for Subcatchment 8S: PDA 8

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link POI 1 : WESTERN PROPERTY BOUNDARY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

Area (sf)	CN	Description
7,562	39	>75% Grass cover, Good, HSG A
3,489	30	Woods, Good, HSG A
11,051		Weighted Average
11,051		100.00% Pervious Area

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

Summary for Subcatchment 9S: PDA 9

Runoff = 0.58 cfs @ 12.07 hrs, Volume= 1,934 cf, Depth= 2.26"
Routed to Pond CB2 : N-CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	8,963	98	PROPOSED PAVEMENT
	1,308	39	>75% Grass cover, Good, HSG A
	10,271		Weighted Average
	1,308		12.73% Pervious Area
	8,963		87.27% Impervious Area

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

Summary for Subcatchment 10S: PDA 10

Runoff = 2.01 cfs @ 12.07 hrs, Volume= 6,684 cf, Depth= 2.36"
Routed to Pond CB4 : N-CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	15,453	98	EXISTING PAVEMENT
*	4,625	98	EXISTING CONCRETE
*	10,611	98	PROPOSED PAVEMENT
*	290	98	PROPOSED CONCRETE
	3,066	39	>75% Grass cover, Good, HSG A
	34,045		Weighted Average
	3,066		9.01% Pervious Area
	30,979		90.99% Impervious Area

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

Summary for Subcatchment 11S: PDA 11

Runoff = 1.06 cfs @ 12.07 hrs, Volume= 3,541 cf, Depth= 2.59"
Routed to Pond CB3 : N-CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	16,410	98	PROPOSED PAVEMENT
	16,410		100.00% Impervious Area

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

Summary for Subcatchment 12S: PDA 12

Runoff = 3.03 cfs @ 12.07 hrs, Volume= 10,088 cf, Depth= 1.70"
Routed to Pond P1 : SEDIMENT FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	10,672	98	EXISTING PAVEMENT
*	870	98	EXISTING CONCRETE
*	1,375	98	EXISTING GRAVEL
*	33,840	98	PROPOSED PAVEMENT
	19,790	39	>75% Grass cover, Good, HSG A
	4,621	30	Woods, Good, HSG A
	71,168		Weighted Average
	24,411		34.30% Pervious Area
	46,757		65.70% Impervious Area

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

Summary for Subcatchment 13S: PDA 13

Runoff = 0.16 cfs @ 12.07 hrs, Volume= 533 cf, Depth= 2.59"
Routed to Pond RD : ROOF DRAIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	2,470	98	PROPOSED BUILDING
	2,470		100.00% Impervious Area

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

Summary for Subcatchment 14S: PDA 14

Runoff = 0.45 cfs @ 12.07 hrs, Volume= 1,486 cf, Depth= 2.32"
Routed to Pond CB5 : N-CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	6,595	98	PROPOSED PAVEMENT
*	292	98	PROPOSED CONCRETE
	794	39	>75% Grass cover, Good, HSG A
	7,681		Weighted Average
	794		10.34% Pervious Area
	6,887		89.66% Impervious Area

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

Summary for Subcatchment 15S: PDA 15

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 834 cf, Depth= 2.59"
Routed to Pond CB6 : N-CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	3,496	98	PROPOSED PAVEMENT
*	223	98	PROPOSED CONCRETE
*	146	98	PROPOSED SIDEWALK
	3,865		Weighted Average
	3,865		100.00% Impervious Area

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

Summary for Subcatchment 16S: PDA 16

Runoff = 0.09 cfs @ 12.07 hrs, Volume= 286 cf, Depth= 0.82"
Routed to Pond CB8 : N-CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=2.82"

	Area (sf)	CN	Description
*	155	98	EXISTING PAVEMENT
*	997	98	PROPOSED PAVEMENT
*	175	98	PROPOSED SIDEWALK
	2,884	39	>75% Grass cover, Good, HSG A
	4,211		Weighted Average
	2,884		68.49% Pervious Area
	1,327		31.51% Impervious Area

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

Summary for Pond CB: EXISTING CB SYSTEM

Inflow Area = 92,648 sf, 93.80% Impervious, Inflow Depth = 2.43" for 2-yr event
Inflow = 5.64 cfs @ 12.07 hrs, Volume= 18,751 cf
Primary = 5.64 cfs @ 12.07 hrs, Volume= 18,751 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB1: N-CB-1

Inflow Area = 8,168 sf, 71.33% Impervious, Inflow Depth = 1.85" for 2-yr event
Inflow = 0.38 cfs @ 12.07 hrs, Volume= 1,257 cf
Outflow = 0.38 cfs @ 12.07 hrs, Volume= 1,257 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 12.07 hrs, Volume= 1,257 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 320.85' @ 12.07 hrs
Flood Elev= 324.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.50'	**12.0" Round Culvert** L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 320.50' / 320.30' S= 0.0053 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.38 cfs @ 12.07 hrs HW=320.85' TW=312.27' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.38 cfs @ 2.31 fps)

Summary for Pond CB2: N-CB-2

Inflow Area = 14,136 sf, 90.75% Impervious, Inflow Depth = 2.35" for 2-yr event
Inflow = 0.83 cfs @ 12.07 hrs, Volume= 2,768 cf
Outflow = 0.83 cfs @ 12.07 hrs, Volume= 2,768 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.83 cfs @ 12.07 hrs, Volume= 2,768 cf
Routed to Pond CB5 : N-CB-5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.52' @ 12.07 hrs
Flood Elev= 326.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**12.0" Round Culvert** L= 99.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 322.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.83 cfs @ 12.07 hrs HW=323.52' TW=322.59' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.83 cfs @ 2.91 fps)

Summary for Pond CB3: N-CB-3

Inflow Area = 16,410 sf,100.00% Impervious, Inflow Depth = 2.59" for 2-yr event
Inflow = 1.06 cfs @ 12.07 hrs, Volume= 3,541 cf
Outflow = 1.06 cfs @ 12.07 hrs, Volume= 3,541 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.06 cfs @ 12.07 hrs, Volume= 3,541 cf
Routed to Pond CB4 : N-CB-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.59' @ 12.07 hrs
Flood Elev= 326.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**12.0" Round Culvert** L= 296.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 321.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.06 cfs @ 12.07 hrs HW=323.59' TW=321.47' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.06 cfs @ 3.20 fps)

Summary for Pond CB4: N-CB-4

Inflow Area = 74,742 sf, 93.09% Impervious, Inflow Depth = 2.41" for 2-yr event
Inflow = 4.51 cfs @ 12.07 hrs, Volume= 15,011 cf
Outflow = 4.51 cfs @ 12.07 hrs, Volume= 15,011 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.51 cfs @ 12.07 hrs, Volume= 15,011 cf
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 321.47' @ 12.08 hrs
Flood Elev= 325.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.50'	**24.0" Round Culvert** L= 186.0' Ke= 0.500 Inlet / Outlet Invert= 320.50' / 319.50' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=4.47 cfs @ 12.07 hrs HW=321.47' TW=320.25' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.47 cfs @ 4.34 fps)

Summary for Pond CB5: N-CB-5

Inflow Area = 24,287 sf, 91.35% Impervious, Inflow Depth = 2.36" for 2-yr event
Inflow = 1.44 cfs @ 12.07 hrs, Volume= 4,787 cf
Outflow = 1.44 cfs @ 12.07 hrs, Volume= 4,787 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.44 cfs @ 12.07 hrs, Volume= 4,787 cf
Routed to Pond CB4 : N-CB-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 322.59' @ 12.07 hrs
Flood Elev= 326.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	322.00'	**18.0" Round Culvert** L= 202.0' Ke= 0.500 Inlet / Outlet Invert= 322.00' / 321.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=1.44 cfs @ 12.07 hrs HW=322.59' TW=321.47' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.44 cfs @ 3.27 fps)

Summary for Pond CB6: N-CB-6

Inflow Area = 3,865 sf,100.00% Impervious, Inflow Depth = 2.59" for 2-yr event
Inflow = 0.25 cfs @ 12.07 hrs, Volume= 834 cf
Outflow = 0.25 cfs @ 12.07 hrs, Volume= 834 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.07 hrs, Volume= 834 cf
Routed to Pond CB2 : N-CB-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 323.64' @ 12.08 hrs
Flood Elev= 326.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.30'	**12.0" Round Culvert** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 323.30' / 323.10' S= 0.0062 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.25 cfs @ 12.07 hrs HW=323.64' TW=323.52' (Dynamic Tailwater)
↳**1=Culvert** (Outlet Controls 0.25 cfs @ 1.55 fps)

Summary for Pond CB611: EXISTING CB 611

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 1.01" for 2-yr event
Inflow = 0.09 cfs @ 12.07 hrs, Volume= 292 cf
Primary = 0.09 cfs @ 12.07 hrs, Volume= 292 cf, Atten= 0%, Lag= 0.0 min
Routed to Link POI 3 : MANCHESTER ROAD

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB7: N-CB-7

Inflow Area = 11,070 sf, 59.68% Impervious, Inflow Depth = 1.55" for 2-yr event
Inflow = 0.41 cfs @ 12.09 hrs, Volume= 1,425 cf
Outflow = 0.41 cfs @ 12.09 hrs, Volume= 1,425 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.41 cfs @ 12.09 hrs, Volume= 1,425 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 320.54' @ 12.09 hrs
Flood Elev= 324.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.15'	**12.0" Round Culvert** L= 11.0' Ke= 0.500 Inlet / Outlet Invert= 320.15' / 320.10' S= 0.0045 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.41 cfs @ 12.09 hrs HW=320.54' TW=312.40' (Dynamic Tailwater)
↳**1=Culvert** (Barrel Controls 0.41 cfs @ 2.17 fps)

Summary for Pond CB8: N-CB-8

Inflow Area = 4,211 sf, 31.51% Impervious, Inflow Depth = 0.82" for 2-yr event
Inflow = 0.09 cfs @ 12.07 hrs, Volume= 286 cf
Outflow = 0.09 cfs @ 12.07 hrs, Volume= 286 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 12.07 hrs, Volume= 286 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 321.14' @ 12.07 hrs
Flood Elev= 325.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	321.00'	**12.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 321.00' / 320.30' S= 0.0175 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 12.07 hrs HW=321.14' TW=312.27' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.09 cfs @ 1.28 fps)

Summary for Pond DW: DRY WELL SYSTEM

Inflow Area = 23,449 sf, 58.68% Impervious, Inflow Depth = 1.52" for 2-yr event
Inflow = 0.87 cfs @ 12.08 hrs, Volume= 2,969 cf
Outflow = 0.08 cfs @ 12.86 hrs, Volume= 2,970 cf, Atten= 90%, Lag= 46.8 min
Discarded = 0.08 cfs @ 12.86 hrs, Volume= 2,970 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 313.69' @ 12.86 hrs Surf.Area= 908 sf Storage= 1,060 cf
Flood Elev= 322.30' Surf.Area= 908 sf Storage= 4,177 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 95.2 min (853.9 - 758.8)

Volume	Invert	Avail.Storage	Storage Description
#1	321.70'	2 cf	**2.00'W x 2.00'L x 0.60'H DW COLLAR** Impervious
#2	311.90'	493 cf	**8.00'D x 9.80'H DRY WELL** Inside #3 601 cf Overall - 5.0" Wall Thickness = 493 cf
#3	310.90'	3,682 cf	**34.00'D x 10.80'H STONE STORAGE** 9,806 cf Overall - 601 cf Embedded = 9,205 cf x 40.0% Voids
		4,177 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	310.90'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.08 cfs @ 12.86 hrs HW=313.69' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.08 cfs)

Summary for Pond P1: SEDIMENT FOREBAY

Inflow Area = 145,910 sf, 79.73% Impervious, Inflow Depth = 2.06" for 2-yr event
Inflow = 7.55 cfs @ 12.07 hrs, Volume= 25,099 cf
Outflow = 6.08 cfs @ 12.12 hrs, Volume= 25,099 cf, Atten= 19%, Lag= 3.3 min
Discarded = 0.14 cfs @ 12.12 hrs, Volume= 3,260 cf
Primary = 5.94 cfs @ 12.12 hrs, Volume= 21,839 cf
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 320.36' @ 12.12 hrs Surf.Area= 2,025 sf Storage= 1,845 cf
Flood Elev= 323.00' Surf.Area= 5,487 sf Storage= 11,677 cf

Plug-Flow detention time= 13.9 min calculated for 25,096 cf (100% of inflow)
Center-of-Mass det. time= 13.9 min (772.1 - 758.2)

Volume	Invert	Avail.Storage	Storage Description
#1	318.00'	11,677 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.00	14	0	0	14
320.00	1,611	1,183	1,183	1,619
321.00	2,861	2,206	3,390	2,880
322.00	4,149	3,485	6,875	4,184
323.00	5,487	4,802	11,677	5,545

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.00'	**3.000 in/hr Exfiltration over Wetted area**
#2	Primary	318.90'	**18.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 318.90' / 318.70' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Discarded OutFlow Max=0.14 cfs @ 12.12 hrs HW=320.36' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=5.93 cfs @ 12.12 hrs HW=320.36' TW=316.63' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 5.93 cfs @ 4.28 fps)

Summary for Pond P2: EXISTING RETENTION BASIN

Inflow Area = 336,193 sf, 63.26% Impervious, Inflow Depth = 1.52" for 2-yr event
Inflow = 11.29 cfs @ 12.09 hrs, Volume= 42,628 cf
Outflow = 0.83 cfs @ 13.52 hrs, Volume= 42,628 cf, Atten= 93%, Lag= 86.0 min
Discarded = 0.83 cfs @ 13.52 hrs, Volume= 42,628 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 317.50' @ 13.52 hrs Surf.Area= 11,896 sf Storage= 21,148 cf
Flood Elev= 323.00' Surf.Area= 35,653 sf Storage= 149,415 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 259.7 min (1,020.2 - 760.5)

Volume	Invert	Avail.Storage	Storage Description
#1	315.00'	86,245 cf	**FOREBAY (Conic)** Listed below (Recalc)
#2	315.00'	63,170 cf	**RETENTION BASIN (Conic)** Listed below (Recalc)
		149,415 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	1,827	0	0	1,827
316.00	3,401	2,574	2,574	3,411
317.00	4,296	3,840	6,413	4,333
318.00	6,953	5,571	11,985	7,003
319.00	9,664	8,271	20,256	9,733
320.00	13,341	11,453	31,709	13,429
321.00	16,596	14,939	46,648	16,713
322.00	19,695	18,123	64,772	19,849
323.00	23,301	21,473	86,245	23,492

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	3,348	0	0	3,348
316.00	4,675	3,993	3,993	4,694
317.00	5,784	5,220	9,213	5,832
318.00	6,919	6,343	15,556	7,001
319.00	7,946	7,427	22,982	8,073
320.00	8,947	8,442	31,424	9,126
321.00	9,999	9,468	40,892	10,233
322.00	11,113	10,551	51,443	11,405
323.00	12,352	11,727	63,170	12,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	315.00'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.83 cfs @ 13.52 hrs HW=317.50' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.83 cfs)

Summary for Pond RD: ROOF DRAIN

Inflow Area = 2,470 sf,100.00% Impervious, Inflow Depth = 2.59" for 2-yr event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 533 cf
Outflow = 0.16 cfs @ 12.07 hrs, Volume= 533 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.16 cfs @ 12.07 hrs, Volume= 533 cf
Routed to Pond CB5 : N-CB-5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.25' @ 12.07 hrs
Flood Elev= 323.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**6.0" Round Culvert** L= 57.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 322.50' S= 0.0088 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.16 cfs @ 12.07 hrs HW=323.25' TW=322.59' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.16 cfs @ 2.36 fps)

Summary for Link POI 1: WESTERN PROPERTY BOUNDARY

Inflow Area = 11,051 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 2: EXISTING ON-SITE RETENTION BASIN

Inflow Area = 336,193 sf, 63.26% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 3: MANCHESTER ROAD

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 1.01" for 2-yr event
Inflow = 0.09 cfs @ 12.07 hrs, Volume= 292 cf
Primary = 0.09 cfs @ 12.07 hrs, Volume= 292 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PDA 1 Runoff Area=30,191 sf 100.00% Impervious Runoff Depth=3.93"
Tc=5.0 min CN=98 Runoff=2.92 cfs 9,899 cf

Subcatchment2S: PDA 2 Runoff Area=11,229 sf 100.00% Impervious Runoff Depth=3.93"
Tc=5.0 min CN=98 Runoff=1.09 cfs 3,682 cf

Subcatchment3S: PDA 3 Runoff Area=51,228 sf 88.80% Impervious Runoff Depth=3.50"
Tc=5.0 min CN=WQ Runoff=4.40 cfs 14,946 cf

Subcatchment4S: PDA 4 Runoff Area=97,635 sf 9.67% Impervious Runoff Depth=0.42"
Flow Length=501' Tc=28.5 min CN=WQ Runoff=0.52 cfs 3,439 cf

Subcatchment5S: PDA 5 Runoff Area=3,471 sf 38.95% Impervious Runoff Depth=1.57"
Tc=5.0 min CN=WQ Runoff=0.13 cfs 455 cf

Subcatchment6S: PDA 6 Runoff Area=11,070 sf 59.68% Impervious Runoff Depth=2.37"
Flow Length=92' Tc=6.3 min CN=WQ Runoff=0.61 cfs 2,191 cf

Subcatchment7S: PDA 7 Runoff Area=8,168 sf 71.33% Impervious Runoff Depth=2.83"
Tc=5.0 min CN=WQ Runoff=0.56 cfs 1,923 cf

Subcatchment8S: PDA 8 Runoff Area=11,051 sf 0.00% Impervious Runoff Depth=0.04"
Tc=5.0 min CN=WQ Runoff=0.00 cfs 41 cf

Subcatchment9S: PDA 9 Runoff Area=10,271 sf 87.27% Impervious Runoff Depth=3.44"
Tc=5.0 min CN=WQ Runoff=0.87 cfs 2,946 cf

Subcatchment10S: PDA 10 Runoff Area=34,045 sf 90.99% Impervious Runoff Depth=3.59"
Tc=5.0 min CN=WQ Runoff=3.00 cfs 10,174 cf

Subcatchment11S: PDA 11 Runoff Area=16,410 sf 100.00% Impervious Runoff Depth=3.93"
Tc=5.0 min CN=98 Runoff=1.59 cfs 5,381 cf

Subcatchment12S: PDA 12 Runoff Area=71,168 sf 65.70% Impervious Runoff Depth=2.60"
Tc=5.0 min CN=WQ Runoff=4.53 cfs 15,439 cf

Subcatchment13S: PDA 13 Runoff Area=2,470 sf 100.00% Impervious Runoff Depth=3.93"
Tc=5.0 min CN=98 Runoff=0.24 cfs 810 cf

Subcatchment14S: PDA 14 Runoff Area=7,681 sf 89.66% Impervious Runoff Depth=3.53"
Tc=5.0 min CN=WQ Runoff=0.67 cfs 2,263 cf

Subcatchment15S: PDA 15 Runoff Area=3,865 sf 100.00% Impervious Runoff Depth=3.93"
Tc=5.0 min CN=WQ Runoff=0.37 cfs 1,267 cf

Subcatchment16S: PDA 16 Runoff Area=4,211 sf 31.51% Impervious Runoff Depth=1.28"
Tc=5.0 min CN=WQ Runoff=0.13 cfs 451 cf

Pond CB: EXISTING CB SYSTEM Inflow=8.41 cfs 28,528 cf
Primary=8.41 cfs 28,528 cf

Pond CB1: N-CB-1 Peak Elev=320.93' Inflow=0.56 cfs 1,923 cf
12.0" Round Culvert n=0.012 L=38.0' S=0.0053 '/' Outflow=0.56 cfs 1,923 cf

Pond CB2: N-CB-2 Peak Elev=323.66' Inflow=1.24 cfs 4,213 cf
12.0" Round Culvert n=0.012 L=99.0' S=0.0051 '/' Outflow=1.24 cfs 4,213 cf

Pond CB3: N-CB-3 Peak Elev=323.74' Inflow=1.59 cfs 5,381 cf
12.0" Round Culvert n=0.012 L=296.0' S=0.0051 '/' Outflow=1.59 cfs 5,381 cf

Pond CB4: N-CB-4 Peak Elev=321.77' Inflow=6.73 cfs 22,841 cf
24.0" Round Culvert n=0.012 L=186.0' S=0.0054 '/' Outflow=6.73 cfs 22,841 cf

Pond CB5: N-CB-5 Peak Elev=322.77' Inflow=2.15 cfs 7,286 cf
18.0" Round Culvert n=0.012 L=202.0' S=0.0050 '/' Outflow=2.15 cfs 7,286 cf

Pond CB6: N-CB-6 Peak Elev=323.76' Inflow=0.37 cfs 1,267 cf
12.0" Round Culvert n=0.012 L=32.0' S=0.0062 '/' Outflow=0.37 cfs 1,267 cf

Pond CB611: EXISTING CB 611 Inflow=0.13 cfs 455 cf
Primary=0.13 cfs 455 cf

Pond CB7: N-CB-7 Peak Elev=320.63' Inflow=0.61 cfs 2,191 cf
12.0" Round Culvert n=0.012 L=11.0' S=0.0045 '/' Outflow=0.61 cfs 2,191 cf

Pond CB8: N-CB-8 Peak Elev=321.17' Inflow=0.13 cfs 451 cf
12.0" Round Culvert n=0.012 L=40.0' S=0.0175 '/' Outflow=0.13 cfs 451 cf

Pond DW: DRY WELL SYSTEM Peak Elev=315.67' Storage=1,829 cf Inflow=1.30 cfs 4,564 cf
Outflow=0.10 cfs 4,565 cf

Pond P1: SEDIMENT FOREBAY Peak Elev=320.83' Storage=2,919 cf Inflow=11.26 cfs 38,279 cf
Discarded=0.18 cfs 3,723 cf Primary=8.12 cfs 34,556 cf Outflow=8.30 cfs 38,279 cf

Pond P2: EXISTING RETENTION BASIN Peak Elev=318.51' Storage=35,087 cf Inflow=16.22 cfs 66,523 cf
Outflow=1.10 cfs 66,528 cf

Pond RD: ROOF DRAIN Peak Elev=323.32' Inflow=0.24 cfs 810 cf
6.0" Round Culvert n=0.012 L=57.0' S=0.0088 '/' Outflow=0.24 cfs 810 cf

Link POI 1: WESTERN PROPERTY BOUNDARY Inflow=0.00 cfs 41 cf
Primary=0.00 cfs 41 cf

Link POI 2: EXISTING ON-SITE RETENTION BASIN Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 3: MANCHESTERROAD Inflow=0.13 cfs 455 cf
Primary=0.13 cfs 455 cf

Total Runoff Area = 374,164 sf Runoff Volume = 75,307 cf Average Runoff Depth = 2.42"
39.12% Pervious = 146,369 sf 60.88% Impervious = 227,795 sf

Summary for Subcatchment 1S: PDA 1

Runoff = 2.92 cfs @ 12.07 hrs, Volume= 9,899 cf, Depth= 3.93"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	30,191	98	EXISTING BUILDING
	30,191		100.00% Impervious Area

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

Summary for Subcatchment 2S: PDA 2

Runoff = 1.09 cfs @ 12.07 hrs, Volume= 3,682 cf, Depth= 3.93"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	11,229	98	EXISTING BUILDING
	11,229		100.00% Impervious Area

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

Summary for Subcatchment 3S: PDA 3

Runoff = 4.40 cfs @ 12.07 hrs, Volume= 14,946 cf, Depth= 3.50"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	22,392	98	EXISTING PAVEMENT
*	3,765	98	EXISTING CONCRETE
*	17,894	98	PROPOSED PAVEMENT
*	1,223	98	PROPOSED CONCRETE
*	214	98	PROPOSED SIDEWALK
	5,740	39	>75% Grass cover, Good, HSG A
	51,228		Weighted Average
	5,740		11.20% Pervious Area
	45,488		88.80% Impervious Area

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

Summary for Subcatchment 4S: PDA 4

Runoff = 0.52 cfs @ 12.38 hrs, Volume= 3,439 cf, Depth= 0.42"
Routed to Pond P2 : EXISTING RETENTION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	3,663	98	EXISTING PAVEMENT
*	529	98	EXISTING CONCRETE
*	5,252	98	EXISTING GRAVEL
	63,236	39	>75% Grass cover, Good, HSG A
	24,955	30	Woods, Good, HSG A
	97,635		Weighted Average
	88,191		90.33% Pervious Area
	9,444		9.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	50	0.0040	0.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.6	106	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	37	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.5	100	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.9	84	0.0010	0.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	26	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	98	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.5	501	Total			

Summary for Subcatchment 5S: PDA 5

Runoff = 0.13 cfs @ 12.07 hrs, Volume= 455 cf, Depth= 1.57"
Routed to Pond CB611 : EXISTING CB 611

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	1,352	98	EXISTING PAVEMENT
	2,119	39	>75% Grass cover, Good, HSG A
	3,471		Weighted Average
	2,119		61.05% Pervious Area
	1,352		38.95% Impervious Area

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

Summary for Subcatchment 6S: PDA 6

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 2,191 cf, Depth= 2.37"
Routed to Pond CB7 : N-CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	5,218	98	EXISTING PAVEMENT
*	1,389	98	PROPOSED PAVEMENT
	4,463	39	>75% Grass cover, Good, HSG A
	11,070		Weighted Average
	4,463		40.32% Pervious Area
	6,607		59.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.0260	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.78"
0.9	42	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.3	92	Total			

Summary for Subcatchment 7S: PDA 7

Runoff = 0.56 cfs @ 12.07 hrs, Volume= 1,923 cf, Depth= 2.83"
Routed to Pond CB1 : N-CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	2,970	98	EXISTING PAVEMENT
*	2,856	98	PROPOSED PAVEMENT
	2,342	39	>75% Grass cover, Good, HSG A
	8,168		Weighted Average
	2,342		28.67% Pervious Area
	5,826		71.33% Impervious Area

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

Summary for Subcatchment 8S: PDA 8

Runoff = 0.00 cfs @ 15.19 hrs, Volume= 41 cf, Depth= 0.04"
Routed to Link POI 1 : WESTERN PROPERTY BOUNDARY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

Area (sf)	CN	Description
7,562	39	>75% Grass cover, Good, HSG A
3,489	30	Woods, Good, HSG A
11,051		Weighted Average
11,051		100.00% Pervious Area

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

Summary for Subcatchment 9S: PDA 9

Runoff = 0.87 cfs @ 12.07 hrs, Volume= 2,946 cf, Depth= 3.44"
Routed to Pond CB2 : N-CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	8,963	98	PROPOSED PAVEMENT
	1,308	39	>75% Grass cover, Good, HSG A
	10,271		Weighted Average
	1,308		12.73% Pervious Area
	8,963		87.27% Impervious Area

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

Summary for Subcatchment 10S: PDA 10

Runoff = 3.00 cfs @ 12.07 hrs, Volume= 10,174 cf, Depth= 3.59"
Routed to Pond CB4 : N-CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	15,453	98	EXISTING PAVEMENT
*	4,625	98	EXISTING CONCRETE
*	10,611	98	PROPOSED PAVEMENT
*	290	98	PROPOSED CONCRETE
	3,066	39	>75% Grass cover, Good, HSG A
	34,045		Weighted Average
	3,066		9.01% Pervious Area
	30,979		90.99% Impervious Area

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

Summary for Subcatchment 11S: PDA 11

Runoff = 1.59 cfs @ 12.07 hrs, Volume= 5,381 cf, Depth= 3.93"
Routed to Pond CB3 : N-CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	16,410	98	PROPOSED PAVEMENT
	16,410		100.00% Impervious Area

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

Summary for Subcatchment 12S: PDA 12

Runoff = 4.53 cfs @ 12.07 hrs, Volume= 15,439 cf, Depth= 2.60"
Routed to Pond P1 : SEDIMENT FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	10,672	98	EXISTING PAVEMENT
*	870	98	EXISTING CONCRETE
*	1,375	98	EXISTING GRAVEL
*	33,840	98	PROPOSED PAVEMENT
	19,790	39	>75% Grass cover, Good, HSG A
	4,621	30	Woods, Good, HSG A
	71,168		Weighted Average
	24,411		34.30% Pervious Area
	46,757		65.70% Impervious Area

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

Summary for Subcatchment 13S: PDA 13

Runoff = 0.24 cfs @ 12.07 hrs, Volume= 810 cf, Depth= 3.93"
Routed to Pond RD : ROOF DRAIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	2,470	98	PROPOSED BUILDING
	2,470		100.00% Impervious Area

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

Summary for Subcatchment 14S: PDA 14

Runoff = 0.67 cfs @ 12.07 hrs, Volume= 2,263 cf, Depth= 3.53"
Routed to Pond CB5 : N-CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	6,595	98	PROPOSED PAVEMENT
*	292	98	PROPOSED CONCRETE
	794	39	>75% Grass cover, Good, HSG A
	7,681		Weighted Average
	794		10.34% Pervious Area
	6,887		89.66% Impervious Area

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

Summary for Subcatchment 15S: PDA 15

Runoff = 0.37 cfs @ 12.07 hrs, Volume= 1,267 cf, Depth= 3.93"
Routed to Pond CB6 : N-CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	3,496	98	PROPOSED PAVEMENT
*	223	98	PROPOSED CONCRETE
*	146	98	PROPOSED SIDEWALK
	3,865		Weighted Average
	3,865		100.00% Impervious Area

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

Summary for Subcatchment 16S: PDA 16

Runoff = 0.13 cfs @ 12.07 hrs, Volume= 451 cf, Depth= 1.28"
Routed to Pond CB8 : N-CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.17"

	Area (sf)	CN	Description
*	155	98	EXISTING PAVEMENT
*	997	98	PROPOSED PAVEMENT
*	175	98	PROPOSED SIDEWALK
	2,884	39	>75% Grass cover, Good, HSG A
	4,211		Weighted Average
	2,884		68.49% Pervious Area
	1,327		31.51% Impervious Area

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

Summary for Pond CB: EXISTING CB SYSTEM

Inflow Area = 92,648 sf, 93.80% Impervious, Inflow Depth = 3.69" for 10-yr event
Inflow = 8.41 cfs @ 12.07 hrs, Volume= 28,528 cf
Primary = 8.41 cfs @ 12.07 hrs, Volume= 28,528 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB1: N-CB-1

Inflow Area = 8,168 sf, 71.33% Impervious, Inflow Depth = 2.83" for 10-yr event
Inflow = 0.56 cfs @ 12.07 hrs, Volume= 1,923 cf
Outflow = 0.56 cfs @ 12.07 hrs, Volume= 1,923 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.56 cfs @ 12.07 hrs, Volume= 1,923 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 320.93' @ 12.07 hrs
Flood Elev= 324.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.50'	**12.0" Round Culvert** L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 320.50' / 320.30' S= 0.0053 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.56 cfs @ 12.07 hrs HW=320.93' TW=313.33' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.56 cfs @ 2.55 fps)

Summary for Pond CB2: N-CB-2

Inflow Area = 14,136 sf, 90.75% Impervious, Inflow Depth = 3.58" for 10-yr event
Inflow = 1.24 cfs @ 12.07 hrs, Volume= 4,213 cf
Outflow = 1.24 cfs @ 12.07 hrs, Volume= 4,213 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.24 cfs @ 12.07 hrs, Volume= 4,213 cf
Routed to Pond CB5 : N-CB-5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.66' @ 12.07 hrs
Flood Elev= 326.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**12.0" Round Culvert** L= 99.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 322.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.24 cfs @ 12.07 hrs HW=323.66' TW=322.76' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.24 cfs @ 3.20 fps)

Summary for Pond CB3: N-CB-3

Inflow Area = 16,410 sf,100.00% Impervious, Inflow Depth = 3.93" for 10-yr event
Inflow = 1.59 cfs @ 12.07 hrs, Volume= 5,381 cf
Outflow = 1.59 cfs @ 12.07 hrs, Volume= 5,381 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.59 cfs @ 12.07 hrs, Volume= 5,381 cf
Routed to Pond CB4 : N-CB-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.74' @ 12.07 hrs
Flood Elev= 326.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**12.0" Round Culvert** L= 296.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 321.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.59 cfs @ 12.07 hrs HW=323.74' TW=321.76' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.59 cfs @ 3.52 fps)

Summary for Pond CB4: N-CB-4

Inflow Area = 74,742 sf, 93.09% Impervious, Inflow Depth = 3.67" for 10-yr event
Inflow = 6.73 cfs @ 12.07 hrs, Volume= 22,841 cf
Outflow = 6.73 cfs @ 12.07 hrs, Volume= 22,841 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.73 cfs @ 12.07 hrs, Volume= 22,841 cf
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 321.77' @ 12.08 hrs
Flood Elev= 325.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.50'	**24.0" Round Culvert** L= 186.0' Ke= 0.500 Inlet / Outlet Invert= 320.50' / 319.50' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=6.56 cfs @ 12.07 hrs HW=321.76' TW=320.63' (Dynamic Tailwater)
1=Culvert (Outlet Controls 6.56 cfs @ 4.50 fps)

Summary for Pond CB5: N-CB-5

Inflow Area = 24,287 sf, 91.35% Impervious, Inflow Depth = 3.60" for 10-yr event
Inflow = 2.15 cfs @ 12.07 hrs, Volume= 7,286 cf
Outflow = 2.15 cfs @ 12.07 hrs, Volume= 7,286 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.15 cfs @ 12.07 hrs, Volume= 7,286 cf
Routed to Pond CB4 : N-CB-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 322.77' @ 12.08 hrs
Flood Elev= 326.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	322.00'	**18.0" Round Culvert** L= 202.0' Ke= 0.500 Inlet / Outlet Invert= 322.00' / 321.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.12 cfs @ 12.07 hrs HW=322.76' TW=321.76' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.12 cfs @ 3.42 fps)

Summary for Pond CB6: N-CB-6

Inflow Area = 3,865 sf,100.00% Impervious, Inflow Depth = 3.93" for 10-yr event
Inflow = 0.37 cfs @ 12.07 hrs, Volume= 1,267 cf
Outflow = 0.37 cfs @ 12.07 hrs, Volume= 1,267 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.37 cfs @ 12.07 hrs, Volume= 1,267 cf
Routed to Pond CB2 : N-CB-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 323.76' @ 12.08 hrs
Flood Elev= 326.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.30'	**12.0" Round Culvert** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 323.30' / 323.10' S= 0.0062 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.37 cfs @ 12.07 hrs HW=323.76' TW=323.66' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.37 cfs @ 1.53 fps)

Summary for Pond CB611: EXISTING CB 611

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 1.57" for 10-yr event
Inflow = 0.13 cfs @ 12.07 hrs, Volume= 455 cf
Primary = 0.13 cfs @ 12.07 hrs, Volume= 455 cf, Atten= 0%, Lag= 0.0 min
Routed to Link POI 3 : MANCHESTER ROAD

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB7: N-CB-7

Inflow Area = 11,070 sf, 59.68% Impervious, Inflow Depth = 2.37" for 10-yr event
Inflow = 0.61 cfs @ 12.09 hrs, Volume= 2,191 cf
Outflow = 0.61 cfs @ 12.09 hrs, Volume= 2,191 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.61 cfs @ 12.09 hrs, Volume= 2,191 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 320.63' @ 12.09 hrs
Flood Elev= 324.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.15'	**12.0" Round Culvert** L= 11.0' Ke= 0.500 Inlet / Outlet Invert= 320.15' / 320.10' S= 0.0045 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.61 cfs @ 12.09 hrs HW=320.63' TW=313.52' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.61 cfs @ 2.40 fps)

Summary for Pond CB8: N-CB-8

Inflow Area = 4,211 sf, 31.51% Impervious, Inflow Depth = 1.28" for 10-yr event
Inflow = 0.13 cfs @ 12.07 hrs, Volume= 451 cf
Outflow = 0.13 cfs @ 12.07 hrs, Volume= 451 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.13 cfs @ 12.07 hrs, Volume= 451 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 321.17' @ 12.07 hrs
Flood Elev= 325.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	321.00'	**12.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 321.00' / 320.30' S= 0.0175 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.13 cfs @ 12.07 hrs HW=321.17' TW=313.33' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.13 cfs @ 1.42 fps)

Summary for Pond DW: DRY WELL SYSTEM

Inflow Area = 23,449 sf, 58.68% Impervious, Inflow Depth = 2.34" for 10-yr event
Inflow = 1.30 cfs @ 12.08 hrs, Volume= 4,564 cf
Outflow = 0.10 cfs @ 13.08 hrs, Volume= 4,565 cf, Atten= 92%, Lag= 60.3 min
Discarded = 0.10 cfs @ 13.08 hrs, Volume= 4,565 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 315.67' @ 13.08 hrs Surf.Area= 908 sf Storage= 1,829 cf
Flood Elev= 322.30' Surf.Area= 908 sf Storage= 4,177 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 159.8 min (914.6 - 754.8)

Volume	Invert	Avail.Storage	Storage Description
#1	321.70'	2 cf	**2.00'W x 2.00'L x 0.60'H DW COLLAR** Impervious
#2	311.90'	493 cf	**8.00'D x 9.80'H DRY WELL** Inside #3 601 cf Overall - 5.0" Wall Thickness = 493 cf
#3	310.90'	3,682 cf	**34.00'D x 10.80'H STONE STORAGE** 9,806 cf Overall - 601 cf Embedded = 9,205 cf x 40.0% Voids
		4,177 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	310.90'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.10 cfs @ 13.08 hrs HW=315.67' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.10 cfs)

Summary for Pond P1: SEDIMENT FOREBAY

Inflow Area = 145,910 sf, 79.73% Impervious, Inflow Depth = 3.15" for 10-yr event
Inflow = 11.26 cfs @ 12.07 hrs, Volume= 38,279 cf
Outflow = 8.30 cfs @ 12.14 hrs, Volume= 38,279 cf, Atten= 26%, Lag= 4.0 min
Discarded = 0.18 cfs @ 12.14 hrs, Volume= 3,723 cf
Primary = 8.12 cfs @ 12.14 hrs, Volume= 34,556 cf
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 320.83' @ 12.14 hrs Surf.Area= 2,621 sf Storage= 2,919 cf
Flood Elev= 323.00' Surf.Area= 5,487 sf Storage= 11,677 cf

Plug-Flow detention time= 11.2 min calculated for 38,274 cf (100% of inflow)
Center-of-Mass det. time= 11.2 min (762.7 - 751.5)

Volume	Invert	Avail.Storage	Storage Description
#1	318.00'	11,677 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.00	14	0	0	14
320.00	1,611	1,183	1,183	1,619
321.00	2,861	2,206	3,390	2,880
322.00	4,149	3,485	6,875	4,184
323.00	5,487	4,802	11,677	5,545

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.00'	**3.000 in/hr Exfiltration over Wetted area**
#2	Primary	318.90'	**18.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 318.90' / 318.70' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Discarded OutFlow Max=0.18 cfs @ 12.14 hrs HW=320.83' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.18 cfs)

Primary OutFlow Max=8.12 cfs @ 12.14 hrs HW=320.83' TW=317.49' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 8.12 cfs @ 4.65 fps)

Summary for Pond P2: EXISTING RETENTION BASIN

Inflow Area = 336,193 sf, 63.26% Impervious, Inflow Depth = 2.37" for 10-yr event
Inflow = 16.22 cfs @ 12.08 hrs, Volume= 66,523 cf
Outflow = 1.10 cfs @ 13.84 hrs, Volume= 66,528 cf, Atten= 93%, Lag= 105.5 min
Discarded = 1.10 cfs @ 13.84 hrs, Volume= 66,528 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 318.51' @ 13.84 hrs Surf.Area= 15,716 sf Storage= 35,087 cf
Flood Elev= 323.00' Surf.Area= 35,653 sf Storage= 149,415 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 349.2 min (1,105.8 - 756.5)

Volume	Invert	Avail.Storage	Storage Description
#1	315.00'	86,245 cf	**FOREBAY (Conic)** Listed below (Recalc)
#2	315.00'	63,170 cf	**RETENTION BASIN (Conic)** Listed below (Recalc)
		149,415 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	1,827	0	0	1,827
316.00	3,401	2,574	2,574	3,411
317.00	4,296	3,840	6,413	4,333
318.00	6,953	5,571	11,985	7,003
319.00	9,664	8,271	20,256	9,733
320.00	13,341	11,453	31,709	13,429
321.00	16,596	14,939	46,648	16,713
322.00	19,695	18,123	64,772	19,849
323.00	23,301	21,473	86,245	23,492

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	3,348	0	0	3,348
316.00	4,675	3,993	3,993	4,694
317.00	5,784	5,220	9,213	5,832
318.00	6,919	6,343	15,556	7,001
319.00	7,946	7,427	22,982	8,073
320.00	8,947	8,442	31,424	9,126
321.00	9,999	9,468	40,892	10,233
322.00	11,113	10,551	51,443	11,405
323.00	12,352	11,727	63,170	12,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	315.00'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=1.10 cfs @ 13.84 hrs HW=318.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 1.10 cfs)

Summary for Pond RD: ROOF DRAIN

Inflow Area = 2,470 sf,100.00% Impervious, Inflow Depth = 3.93" for 10-yr event
Inflow = 0.24 cfs @ 12.07 hrs, Volume= 810 cf
Outflow = 0.24 cfs @ 12.07 hrs, Volume= 810 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.07 hrs, Volume= 810 cf
Routed to Pond CB5 : N-CB-5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.32' @ 12.07 hrs
Flood Elev= 323.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**6.0" Round Culvert** L= 57.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 322.50' S= 0.0088 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.24 cfs @ 12.07 hrs HW=323.32' TW=322.76' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.24 cfs @ 2.55 fps)

Summary for Link POI 1: WESTERN PROPERTY BOUNDARY

Inflow Area = 11,051 sf, 0.00% Impervious, Inflow Depth = 0.04" for 10-yr event
Inflow = 0.00 cfs @ 15.19 hrs, Volume= 41 cf
Primary = 0.00 cfs @ 15.19 hrs, Volume= 41 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 2: EXISTING ON-SITE RETENTION BASIN

Inflow Area = 336,193 sf, 63.26% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 3: MANCHESTER ROAD

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 1.57" for 10-yr event
Inflow = 0.13 cfs @ 12.07 hrs, Volume= 455 cf
Primary = 0.13 cfs @ 12.07 hrs, Volume= 455 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PDA 1 Runoff Area=30,191 sf 100.00% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=98 Runoff=3.66 cfs 12,511 cf

Subcatchment2S: PDA 2 Runoff Area=11,229 sf 100.00% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=98 Runoff=1.36 cfs 4,653 cf

Subcatchment3S: PDA 3 Runoff Area=51,228 sf 88.80% Impervious Runoff Depth=4.44"
Tc=5.0 min CN=WQ Runoff=5.52 cfs 18,967 cf

Subcatchment4S: PDA 4 Runoff Area=97,635 sf 9.67% Impervious Runoff Depth=0.64"
Flow Length=501' Tc=28.5 min CN=WQ Runoff=0.66 cfs 5,228 cf

Subcatchment5S: PDA 5 Runoff Area=3,471 sf 38.95% Impervious Runoff Depth=2.09"
Tc=5.0 min CN=WQ Runoff=0.16 cfs 603 cf

Subcatchment6S: PDA 6 Runoff Area=11,070 sf 59.68% Impervious Runoff Depth=3.07"
Flow Length=92' Tc=6.3 min CN=WQ Runoff=0.77 cfs 2,829 cf

Subcatchment7S: PDA 7 Runoff Area=8,168 sf 71.33% Impervious Runoff Depth=3.62"
Tc=5.0 min CN=WQ Runoff=0.71 cfs 2,462 cf

Subcatchment8S: PDA 8 Runoff Area=11,051 sf 0.00% Impervious Runoff Depth=0.17"
Tc=5.0 min CN=WQ Runoff=0.01 cfs 158 cf

Subcatchment9S: PDA 9 Runoff Area=10,271 sf 87.27% Impervious Runoff Depth=4.37"
Tc=5.0 min CN=WQ Runoff=1.09 cfs 3,741 cf

Subcatchment10S: PDA 10 Runoff Area=34,045 sf 90.99% Impervious Runoff Depth=4.55"
Tc=5.0 min CN=WQ Runoff=3.76 cfs 12,900 cf

Subcatchment11S: PDA 11 Runoff Area=16,410 sf 100.00% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=98 Runoff=1.99 cfs 6,800 cf

Subcatchment12S: PDA 12 Runoff Area=71,168 sf 65.70% Impervious Runoff Depth=3.34"
Tc=5.0 min CN=WQ Runoff=5.67 cfs 19,784 cf

Subcatchment13S: PDA 13 Runoff Area=2,470 sf 100.00% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=98 Runoff=0.30 cfs 1,024 cf

Subcatchment14S: PDA 14 Runoff Area=7,681 sf 89.66% Impervious Runoff Depth=4.48"
Tc=5.0 min CN=WQ Runoff=0.84 cfs 2,870 cf

Subcatchment15S: PDA 15 Runoff Area=3,865 sf 100.00% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=WQ Runoff=0.47 cfs 1,602 cf

Subcatchment16S: PDA 16 Runoff Area=4,211 sf 31.51% Impervious Runoff Depth=1.73"
Tc=5.0 min CN=WQ Runoff=0.16 cfs 609 cf

Pond CB: EXISTING CB SYSTEM Inflow=10.54 cfs 36,132 cf
Primary=10.54 cfs 36,132 cf

Pond CB1: N-CB-1 Peak Elev=320.99' Inflow=0.71 cfs 2,462 cf
12.0" Round Culvert n=0.012 L=38.0' S=0.0053 '/' Outflow=0.71 cfs 2,462 cf

Pond CB2: N-CB-2 Peak Elev=323.76' Inflow=1.56 cfs 5,343 cf
12.0" Round Culvert n=0.012 L=99.0' S=0.0051 '/' Outflow=1.56 cfs 5,343 cf

Pond CB3: N-CB-3 Peak Elev=323.86' Inflow=1.99 cfs 6,800 cf
12.0" Round Culvert n=0.012 L=296.0' S=0.0051 '/' Outflow=1.99 cfs 6,800 cf

Pond CB4: N-CB-4 Peak Elev=322.00' Inflow=8.44 cfs 28,937 cf
24.0" Round Culvert n=0.012 L=186.0' S=0.0054 '/' Outflow=8.44 cfs 28,937 cf

Pond CB5: N-CB-5 Peak Elev=322.90' Inflow=2.69 cfs 9,236 cf
18.0" Round Culvert n=0.012 L=202.0' S=0.0050 '/' Outflow=2.69 cfs 9,236 cf

Pond CB6: N-CB-6 Peak Elev=323.85' Inflow=0.47 cfs 1,602 cf
12.0" Round Culvert n=0.012 L=32.0' S=0.0062 '/' Outflow=0.47 cfs 1,602 cf

Pond CB611: EXISTING CB 611 Inflow=0.16 cfs 603 cf
Primary=0.16 cfs 603 cf

Pond CB7: N-CB-7 Peak Elev=320.69' Inflow=0.77 cfs 2,829 cf
12.0" Round Culvert n=0.012 L=11.0' S=0.0045 '/' Outflow=0.77 cfs 2,829 cf

Pond CB8: N-CB-8 Peak Elev=321.19' Inflow=0.16 cfs 609 cf
12.0" Round Culvert n=0.012 L=40.0' S=0.0175 '/' Outflow=0.16 cfs 609 cf

Pond DW: DRY WELL SYSTEM Peak Elev=317.43' Storage=2,513 cf Inflow=1.62 cfs 5,900 cf
Outflow=0.11 cfs 5,900 cf

Pond P1: SEDIMENT FOREBAY Peak Elev=321.19' Storage=3,949 cf Inflow=14.11 cfs 48,721 cf
Discarded=0.22 cfs 4,082 cf Primary=9.67 cfs 44,639 cf Outflow=9.89 cfs 48,721 cf

Pond P2: EXISTING RETENTION BASIN Peak Elev=319.20' Storage=46,763 cf Inflow=19.46 cfs 85,999 cf
Outflow=1.30 cfs 86,002 cf

Pond RD: ROOF DRAIN Peak Elev=323.39' Inflow=0.30 cfs 1,024 cf
6.0" Round Culvert n=0.012 L=57.0' S=0.0088 '/' Outflow=0.30 cfs 1,024 cf

Link POI 1: WESTERN PROPERTY BOUNDARY Inflow=0.01 cfs 158 cf
Primary=0.01 cfs 158 cf

Link POI 2: EXISTING ON-SITE RETENTION BASIN Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 3: MANCHESTERROAD Inflow=0.16 cfs 603 cf
Primary=0.16 cfs 603 cf

Total Runoff Area = 374,164 sf Runoff Volume = 96,742 cf Average Runoff Depth = 3.10"
39.12% Pervious = 146,369 sf 60.88% Impervious = 227,795 sf

Summary for Subcatchment 1S: PDA 1

Runoff = 3.66 cfs @ 12.07 hrs, Volume= 12,511 cf, Depth= 4.97"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	30,191	98	EXISTING BUILDING
	30,191		100.00% Impervious Area

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

Summary for Subcatchment 2S: PDA 2

Runoff = 1.36 cfs @ 12.07 hrs, Volume= 4,653 cf, Depth= 4.97"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	11,229	98	EXISTING BUILDING
	11,229		100.00% Impervious Area

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

Summary for Subcatchment 3S: PDA 3

Runoff = 5.52 cfs @ 12.07 hrs, Volume= 18,967 cf, Depth= 4.44"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	22,392	98	EXISTING PAVEMENT
*	3,765	98	EXISTING CONCRETE
*	17,894	98	PROPOSED PAVEMENT
*	1,223	98	PROPOSED CONCRETE
*	214	98	PROPOSED SIDEWALK
	5,740	39	>75% Grass cover, Good, HSG A
	51,228		Weighted Average
	5,740		11.20% Pervious Area
	45,488		88.80% Impervious Area

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

Summary for Subcatchment 4S: PDA 4

Runoff = 0.66 cfs @ 12.38 hrs, Volume= 5,228 cf, Depth= 0.64"
Routed to Pond P2 : EXISTING RETENTION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	3,663	98	EXISTING PAVEMENT
*	529	98	EXISTING CONCRETE
*	5,252	98	EXISTING GRAVEL
	63,236	39	>75% Grass cover, Good, HSG A
	24,955	30	Woods, Good, HSG A
	97,635		Weighted Average
	88,191		90.33% Pervious Area
	9,444		9.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	50	0.0040	0.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.6	106	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	37	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.5	100	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.9	84	0.0010	0.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	26	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	98	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.5	501	Total			

Summary for Subcatchment 5S: PDA 5

Runoff = 0.16 cfs @ 12.07 hrs, Volume= 603 cf, Depth= 2.09"
Routed to Pond CB611 : EXISTING CB 611

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	1,352	98	EXISTING PAVEMENT
	2,119	39	>75% Grass cover, Good, HSG A
	3,471		Weighted Average
	2,119		61.05% Pervious Area
	1,352		38.95% Impervious Area

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

Summary for Subcatchment 6S: PDA 6

Runoff = 0.77 cfs @ 12.09 hrs, Volume= 2,829 cf, Depth= 3.07"
Routed to Pond CB7 : N-CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	5,218	98	EXISTING PAVEMENT
*	1,389	98	PROPOSED PAVEMENT
	4,463	39	>75% Grass cover, Good, HSG A
	11,070		Weighted Average
	4,463		40.32% Pervious Area
	6,607		59.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.0260	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.78"
0.9	42	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.3	92	Total			

Summary for Subcatchment 7S: PDA 7

Runoff = 0.71 cfs @ 12.07 hrs, Volume= 2,462 cf, Depth= 3.62"
Routed to Pond CB1 : N-CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	2,970	98	EXISTING PAVEMENT
*	2,856	98	PROPOSED PAVEMENT
	2,342	39	>75% Grass cover, Good, HSG A
	8,168		Weighted Average
	2,342		28.67% Pervious Area
	5,826		71.33% Impervious Area

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

Summary for Subcatchment 8S: PDA 8

Runoff = 0.01 cfs @ 12.42 hrs, Volume= 158 cf, Depth= 0.17"
Routed to Link POI 1 : WESTERN PROPERTY BOUNDARY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

Area (sf)	CN	Description
7,562	39	>75% Grass cover, Good, HSG A
3,489	30	Woods, Good, HSG A
11,051		Weighted Average
11,051		100.00% Pervious Area

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

Summary for Subcatchment 9S: PDA 9

Runoff = 1.09 cfs @ 12.07 hrs, Volume= 3,741 cf, Depth= 4.37"
Routed to Pond CB2 : N-CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	8,963	98	PROPOSED PAVEMENT
	1,308	39	>75% Grass cover, Good, HSG A
	10,271		Weighted Average
	1,308		12.73% Pervious Area
	8,963		87.27% Impervious Area

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

Summary for Subcatchment 10S: PDA 10

Runoff = 3.76 cfs @ 12.07 hrs, Volume= 12,900 cf, Depth= 4.55"
Routed to Pond CB4 : N-CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	15,453	98	EXISTING PAVEMENT
*	4,625	98	EXISTING CONCRETE
*	10,611	98	PROPOSED PAVEMENT
*	290	98	PROPOSED CONCRETE
	3,066	39	>75% Grass cover, Good, HSG A
	34,045		Weighted Average
	3,066		9.01% Pervious Area
	30,979		90.99% Impervious Area

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

Summary for Subcatchment 11S: PDA 11

Runoff = 1.99 cfs @ 12.07 hrs, Volume= 6,800 cf, Depth= 4.97"
Routed to Pond CB3 : N-CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	16,410	98	PROPOSED PAVEMENT
	16,410		100.00% Impervious Area

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

Summary for Subcatchment 12S: PDA 12

Runoff = 5.67 cfs @ 12.07 hrs, Volume= 19,784 cf, Depth= 3.34"
Routed to Pond P1 : SEDIMENT FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	10,672	98	EXISTING PAVEMENT
*	870	98	EXISTING CONCRETE
*	1,375	98	EXISTING GRAVEL
*	33,840	98	PROPOSED PAVEMENT
	19,790	39	>75% Grass cover, Good, HSG A
	4,621	30	Woods, Good, HSG A
	71,168		Weighted Average
	24,411		34.30% Pervious Area
	46,757		65.70% Impervious Area

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

Summary for Subcatchment 13S: PDA 13

Runoff = 0.30 cfs @ 12.07 hrs, Volume= 1,024 cf, Depth= 4.97"
Routed to Pond RD : ROOF DRAIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	2,470	98	PROPOSED BUILDING
	2,470		100.00% Impervious Area

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

Summary for Subcatchment 14S: PDA 14

Runoff = 0.84 cfs @ 12.07 hrs, Volume= 2,870 cf, Depth= 4.48"
Routed to Pond CB5 : N-CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	6,595	98	PROPOSED PAVEMENT
*	292	98	PROPOSED CONCRETE
	794	39	>75% Grass cover, Good, HSG A
	7,681		Weighted Average
	794		10.34% Pervious Area
	6,887		89.66% Impervious Area

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

Summary for Subcatchment 15S: PDA 15

Runoff = 0.47 cfs @ 12.07 hrs, Volume= 1,602 cf, Depth= 4.97"
Routed to Pond CB6 : N-CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	3,496	98	PROPOSED PAVEMENT
*	223	98	PROPOSED CONCRETE
*	146	98	PROPOSED SIDEWALK
	3,865		Weighted Average
	3,865		100.00% Impervious Area

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

Summary for Subcatchment 16S: PDA 16

Runoff = 0.16 cfs @ 12.07 hrs, Volume= 609 cf, Depth= 1.73"
Routed to Pond CB8 : N-CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.21"

	Area (sf)	CN	Description
*	155	98	EXISTING PAVEMENT
*	997	98	PROPOSED PAVEMENT
*	175	98	PROPOSED SIDEWALK
	2,884	39	>75% Grass cover, Good, HSG A
	4,211		Weighted Average
	2,884		68.49% Pervious Area
	1,327		31.51% Impervious Area

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

Summary for Pond CB: EXISTING CB SYSTEM

Inflow Area = 92,648 sf, 93.80% Impervious, Inflow Depth = 4.68" for 25-yr event
Inflow = 10.54 cfs @ 12.07 hrs, Volume= 36,132 cf
Primary = 10.54 cfs @ 12.07 hrs, Volume= 36,132 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB1: N-CB-1

Inflow Area = 8,168 sf, 71.33% Impervious, Inflow Depth = 3.62" for 25-yr event
Inflow = 0.71 cfs @ 12.07 hrs, Volume= 2,462 cf
Outflow = 0.71 cfs @ 12.07 hrs, Volume= 2,462 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 12.07 hrs, Volume= 2,462 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 320.99' @ 12.07 hrs
Flood Elev= 324.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.50'	**12.0" Round Culvert** L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 320.50' / 320.30' S= 0.0053 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.07 hrs HW=320.99' TW=314.27' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.71 cfs @ 2.70 fps)

Summary for Pond CB2: N-CB-2

Inflow Area = 14,136 sf, 90.75% Impervious, Inflow Depth = 4.54" for 25-yr event
Inflow = 1.56 cfs @ 12.07 hrs, Volume= 5,343 cf
Outflow = 1.56 cfs @ 12.07 hrs, Volume= 5,343 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.56 cfs @ 12.07 hrs, Volume= 5,343 cf
Routed to Pond CB5 : N-CB-5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.76' @ 12.07 hrs
Flood Elev= 326.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**12.0" Round Culvert** L= 99.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 322.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.56 cfs @ 12.07 hrs HW=323.76' TW=322.90' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.56 cfs @ 3.38 fps)

Summary for Pond CB3: N-CB-3

Inflow Area = 16,410 sf,100.00% Impervious, Inflow Depth = 4.97" for 25-yr event
Inflow = 1.99 cfs @ 12.07 hrs, Volume= 6,800 cf
Outflow = 1.99 cfs @ 12.07 hrs, Volume= 6,800 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.99 cfs @ 12.07 hrs, Volume= 6,800 cf
Routed to Pond CB4 : N-CB-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.86' @ 12.07 hrs
Flood Elev= 326.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**12.0" Round Culvert** L= 296.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 321.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.99 cfs @ 12.07 hrs HW=323.86' TW=321.98' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.99 cfs @ 3.70 fps)

Summary for Pond CB4: N-CB-4

Inflow Area = 74,742 sf, 93.09% Impervious, Inflow Depth = 4.65" for 25-yr event
Inflow = 8.44 cfs @ 12.07 hrs, Volume= 28,937 cf
Outflow = 8.44 cfs @ 12.07 hrs, Volume= 28,937 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.44 cfs @ 12.07 hrs, Volume= 28,937 cf
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 322.00' @ 12.09 hrs
Flood Elev= 325.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.50'	**24.0" Round Culvert** L= 186.0' Ke= 0.500 Inlet / Outlet Invert= 320.50' / 319.50' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=8.15 cfs @ 12.07 hrs HW=321.98' TW=320.91' (Dynamic Tailwater)
1=Culvert (Outlet Controls 8.15 cfs @ 4.55 fps)

Summary for Pond CB5: N-CB-5

Inflow Area = 24,287 sf, 91.35% Impervious, Inflow Depth = 4.56" for 25-yr event
Inflow = 2.69 cfs @ 12.07 hrs, Volume= 9,236 cf
Outflow = 2.69 cfs @ 12.07 hrs, Volume= 9,236 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.69 cfs @ 12.07 hrs, Volume= 9,236 cf
Routed to Pond CB4 : N-CB-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 322.90' @ 12.08 hrs
Flood Elev= 326.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	322.00'	**18.0" Round Culvert** L= 202.0' Ke= 0.500 Inlet / Outlet Invert= 322.00' / 321.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=2.65 cfs @ 12.07 hrs HW=322.90' TW=321.98' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.65 cfs @ 3.45 fps)

Summary for Pond CB6: N-CB-6

Inflow Area = 3,865 sf,100.00% Impervious, Inflow Depth = 4.97" for 25-yr event
Inflow = 0.47 cfs @ 12.07 hrs, Volume= 1,602 cf
Outflow = 0.47 cfs @ 12.07 hrs, Volume= 1,602 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.47 cfs @ 12.07 hrs, Volume= 1,602 cf
Routed to Pond CB2 : N-CB-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 323.85' @ 12.08 hrs
Flood Elev= 326.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.30'	**12.0" Round Culvert** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 323.30' / 323.10' S= 0.0062 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.46 cfs @ 12.07 hrs HW=323.85' TW=323.76' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.46 cfs @ 1.51 fps)

Summary for Pond CB611: EXISTING CB 611

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 2.09" for 25-yr event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 603 cf
Primary = 0.16 cfs @ 12.07 hrs, Volume= 603 cf, Atten= 0%, Lag= 0.0 min
Routed to Link POI 3 : MANCHESTER ROAD

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB7: N-CB-7

Inflow Area = 11,070 sf, 59.68% Impervious, Inflow Depth = 3.07" for 25-yr event
Inflow = 0.77 cfs @ 12.09 hrs, Volume= 2,829 cf
Outflow = 0.77 cfs @ 12.09 hrs, Volume= 2,829 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.77 cfs @ 12.09 hrs, Volume= 2,829 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 320.69' @ 12.09 hrs
Flood Elev= 324.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.15'	**12.0" Round Culvert** L= 11.0' Ke= 0.500 Inlet / Outlet Invert= 320.15' / 320.10' S= 0.0045 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.76 cfs @ 12.09 hrs HW=320.69' TW=314.51' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.76 cfs @ 2.54 fps)

Summary for Pond CB8: N-CB-8

Inflow Area = 4,211 sf, 31.51% Impervious, Inflow Depth = 1.73" for 25-yr event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 609 cf
Outflow = 0.16 cfs @ 12.07 hrs, Volume= 609 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.16 cfs @ 12.07 hrs, Volume= 609 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 321.19' @ 12.07 hrs
Flood Elev= 325.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	321.00'	**12.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 321.00' / 320.30' S= 0.0175 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.16 cfs @ 12.07 hrs HW=321.19' TW=314.27' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.16 cfs @ 1.50 fps)

Summary for Pond DW: DRY WELL SYSTEM

Inflow Area = 23,449 sf, 58.68% Impervious, Inflow Depth = 3.02" for 25-yr event
Inflow = 1.62 cfs @ 12.08 hrs, Volume= 5,900 cf
Outflow = 0.11 cfs @ 13.52 hrs, Volume= 5,900 cf, Atten= 93%, Lag= 86.8 min
Discarded = 0.11 cfs @ 13.52 hrs, Volume= 5,900 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 317.43' @ 13.52 hrs Surf.Area= 908 sf Storage= 2,513 cf
Flood Elev= 322.30' Surf.Area= 908 sf Storage= 4,177 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 211.4 min (966.7 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	321.70'	2 cf	**2.00'W x 2.00'L x 0.60'H DW COLLAR** Impervious
#2	311.90'	493 cf	**8.00'D x 9.80'H DRY WELL** Inside #3 601 cf Overall - 5.0" Wall Thickness = 493 cf
#3	310.90'	3,682 cf	**34.00'D x 10.80'H STONE STORAGE** 9,806 cf Overall - 601 cf Embedded = 9,205 cf x 40.0% Voids
		4,177 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	310.90'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.11 cfs @ 13.52 hrs HW=317.43' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.11 cfs)

Summary for Pond P1: SEDIMENT FOREBAY

Inflow Area = 145,910 sf, 79.73% Impervious, Inflow Depth = 4.01" for 25-yr event
Inflow = 14.11 cfs @ 12.07 hrs, Volume= 48,721 cf
Outflow = 9.89 cfs @ 12.14 hrs, Volume= 48,721 cf, Atten= 30%, Lag= 4.4 min
Discarded = 0.22 cfs @ 12.14 hrs, Volume= 4,082 cf
Primary = 9.67 cfs @ 12.14 hrs, Volume= 44,639 cf
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 321.19' @ 12.14 hrs Surf.Area= 3,085 sf Storage= 3,949 cf
Flood Elev= 323.00' Surf.Area= 5,487 sf Storage= 11,677 cf

Plug-Flow detention time= 10.3 min calculated for 48,715 cf (100% of inflow)
Center-of-Mass det. time= 10.3 min (759.4 - 749.1)

Volume	Invert	Avail.Storage	Storage Description
#1	318.00'	11,677 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.00	14	0	0	14
320.00	1,611	1,183	1,183	1,619
321.00	2,861	2,206	3,390	2,880
322.00	4,149	3,485	6,875	4,184
323.00	5,487	4,802	11,677	5,545

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.00'	**3.000 in/hr Exfiltration over Wetted area**
#2	Primary	318.90'	**18.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 318.90' / 318.70' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Discarded OutFlow Max=0.22 cfs @ 12.14 hrs HW=321.19' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=9.67 cfs @ 12.14 hrs HW=321.19' TW=318.04' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 9.67 cfs @ 5.47 fps)

Summary for Pond P2: EXISTING RETENTION BASIN

Inflow Area = 336,193 sf, 63.26% Impervious, Inflow Depth = 3.07" for 25-yr event
Inflow = 19.46 cfs @ 12.09 hrs, Volume= 85,999 cf
Outflow = 1.30 cfs @ 14.08 hrs, Volume= 86,002 cf, Atten= 93%, Lag= 119.7 min
Discarded = 1.30 cfs @ 14.08 hrs, Volume= 86,002 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 319.20' @ 14.08 hrs Surf.Area= 18,473 sf Storage= 46,763 cf
Flood Elev= 323.00' Surf.Area= 35,653 sf Storage= 149,415 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 408.5 min (1,164.9 - 756.3)

Volume	Invert	Avail.Storage	Storage Description
#1	315.00'	86,245 cf	**FOREBAY (Conic)** Listed below (Recalc)
#2	315.00'	63,170 cf	**RETENTION BASIN (Conic)** Listed below (Recalc)
		149,415 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	1,827	0	0	1,827
316.00	3,401	2,574	2,574	3,411
317.00	4,296	3,840	6,413	4,333
318.00	6,953	5,571	11,985	7,003
319.00	9,664	8,271	20,256	9,733
320.00	13,341	11,453	31,709	13,429
321.00	16,596	14,939	46,648	16,713
322.00	19,695	18,123	64,772	19,849
323.00	23,301	21,473	86,245	23,492

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	3,348	0	0	3,348
316.00	4,675	3,993	3,993	4,694
317.00	5,784	5,220	9,213	5,832
318.00	6,919	6,343	15,556	7,001
319.00	7,946	7,427	22,982	8,073
320.00	8,947	8,442	31,424	9,126
321.00	9,999	9,468	40,892	10,233
322.00	11,113	10,551	51,443	11,405
323.00	12,352	11,727	63,170	12,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	315.00'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=1.30 cfs @ 14.08 hrs HW=319.20' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 1.30 cfs)

Summary for Pond RD: ROOF DRAIN

Inflow Area = 2,470 sf,100.00% Impervious, Inflow Depth = 4.97" for 25-yr event
Inflow = 0.30 cfs @ 12.07 hrs, Volume= 1,024 cf
Outflow = 0.30 cfs @ 12.07 hrs, Volume= 1,024 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.07 hrs, Volume= 1,024 cf
Routed to Pond CB5 : N-CB-5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.39' @ 12.08 hrs
Flood Elev= 323.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**6.0" Round Culvert** L= 57.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 322.50' S= 0.0088 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.30 cfs @ 12.07 hrs HW=323.38' TW=322.90' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.30 cfs @ 2.52 fps)

Summary for Link POI 1: WESTERN PROPERTY BOUNDARY

Inflow Area = 11,051 sf, 0.00% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.01 cfs @ 12.42 hrs, Volume= 158 cf
Primary = 0.01 cfs @ 12.42 hrs, Volume= 158 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 2: EXISTING ON-SITE RETENTION BASIN

Inflow Area = 336,193 sf, 63.26% Impervious, Inflow Depth = 0.00" for 25-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 3: MANCHESTER ROAD

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 2.09" for 25-yr event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 603 cf
Primary = 0.16 cfs @ 12.07 hrs, Volume= 603 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PDA 1 Runoff Area=30,191 sf 100.00% Impervious Runoff Depth=5.94"
Tc=5.0 min CN=98 Runoff=4.35 cfs 14,949 cf

Subcatchment2S: PDA 2 Runoff Area=11,229 sf 100.00% Impervious Runoff Depth=5.94"
Tc=5.0 min CN=98 Runoff=1.62 cfs 5,560 cf

Subcatchment3S: PDA 3 Runoff Area=51,228 sf 88.80% Impervious Runoff Depth=5.33"
Tc=5.0 min CN=WQ Runoff=6.56 cfs 22,761 cf

Subcatchment4S: PDA 4 Runoff Area=97,635 sf 9.67% Impervious Runoff Depth=0.92"
Flow Length=501' Tc=28.5 min CN=WQ Runoff=0.90 cfs 7,493 cf

Subcatchment5S: PDA 5 Runoff Area=3,471 sf 38.95% Impervious Runoff Depth=2.62"
Tc=5.0 min CN=WQ Runoff=0.20 cfs 757 cf

Subcatchment6S: PDA 6 Runoff Area=11,070 sf 59.68% Impervious Runoff Depth=3.75"
Flow Length=92' Tc=6.3 min CN=WQ Runoff=0.91 cfs 3,457 cf

Subcatchment7S: PDA 7 Runoff Area=8,168 sf 71.33% Impervious Runoff Depth=4.38"
Tc=5.0 min CN=WQ Runoff=0.84 cfs 2,982 cf

Subcatchment8S: PDA 8 Runoff Area=11,051 sf 0.00% Impervious Runoff Depth=0.37"
Tc=5.0 min CN=WQ Runoff=0.04 cfs 341 cf

Subcatchment9S: PDA 9 Runoff Area=10,271 sf 87.27% Impervious Runoff Depth=5.25"
Tc=5.0 min CN=WQ Runoff=1.29 cfs 4,492 cf

Subcatchment10S: PDA 10 Runoff Area=34,045 sf 90.99% Impervious Runoff Depth=5.45"
Tc=5.0 min CN=WQ Runoff=4.47 cfs 15,466 cf

Subcatchment11S: PDA 11 Runoff Area=16,410 sf 100.00% Impervious Runoff Depth=5.94"
Tc=5.0 min CN=98 Runoff=2.36 cfs 8,125 cf

Subcatchment12S: PDA 12 Runoff Area=71,168 sf 65.70% Impervious Runoff Depth=4.05"
Tc=5.0 min CN=WQ Runoff=6.75 cfs 24,008 cf

Subcatchment13S: PDA 13 Runoff Area=2,470 sf 100.00% Impervious Runoff Depth=5.94"
Tc=5.0 min CN=98 Runoff=0.36 cfs 1,223 cf

Subcatchment14S: PDA 14 Runoff Area=7,681 sf 89.66% Impervious Runoff Depth=5.38"
Tc=5.0 min CN=WQ Runoff=0.99 cfs 3,443 cf

Subcatchment15S: PDA 15 Runoff Area=3,865 sf 100.00% Impervious Runoff Depth=5.94"
Tc=5.0 min CN=WQ Runoff=0.56 cfs 1,914 cf

Subcatchment16S: PDA 16 Runoff Area=4,211 sf 31.51% Impervious Runoff Depth=2.21"
Tc=5.0 min CN=WQ Runoff=0.19 cfs 777 cf

Pond CB: EXISTING CB SYSTEM Inflow=12.53 cfs 43,270 cf
Primary=12.53 cfs 43,270 cf

Pond CB1: N-CB-1 Peak Elev=321.04' Inflow=0.84 cfs 2,982 cf
12.0" Round Culvert n=0.012 L=38.0' S=0.0053 '/' Outflow=0.84 cfs 2,982 cf

Pond CB2: N-CB-2 Peak Elev=323.85' Inflow=1.85 cfs 6,406 cf
12.0" Round Culvert n=0.012 L=99.0' S=0.0051 '/' Outflow=1.85 cfs 6,406 cf

Pond CB3: N-CB-3 Peak Elev=323.98' Inflow=2.36 cfs 8,125 cf
12.0" Round Culvert n=0.012 L=296.0' S=0.0051 '/' Outflow=2.36 cfs 8,125 cf

Pond CB4: N-CB-4 Peak Elev=322.23' Inflow=10.03 cfs 34,663 cf
24.0" Round Culvert n=0.012 L=186.0' S=0.0054 '/' Outflow=10.03 cfs 34,663 cf

Pond CB5: N-CB-5 Peak Elev=323.03' Inflow=3.20 cfs 11,072 cf
18.0" Round Culvert n=0.012 L=202.0' S=0.0050 '/' Outflow=3.20 cfs 11,072 cf

Pond CB6: N-CB-6 Peak Elev=323.93' Inflow=0.56 cfs 1,914 cf
12.0" Round Culvert n=0.012 L=32.0' S=0.0062 '/' Outflow=0.56 cfs 1,914 cf

Pond CB611: EXISTING CB 611 Inflow=0.20 cfs 757 cf
Primary=0.20 cfs 757 cf

Pond CB7: N-CB-7 Peak Elev=320.75' Inflow=0.91 cfs 3,457 cf
12.0" Round Culvert n=0.012 L=11.0' S=0.0045 '/' Outflow=0.91 cfs 3,457 cf

Pond CB8: N-CB-8 Peak Elev=321.21' Inflow=0.19 cfs 777 cf
12.0" Round Culvert n=0.012 L=40.0' S=0.0175 '/' Outflow=0.19 cfs 777 cf

Pond DW: DRY WELL SYSTEM Peak Elev=319.30' Storage=3,240 cf Inflow=1.94 cfs 7,215 cf
Outflow=0.13 cfs 7,216 cf

Pond P1: SEDIMENT FOREBAY Peak Elev=321.50' Storage=4,969 cf Inflow=16.78 cfs 58,672 cf
Discarded=0.24 cfs 4,979 cf Primary=11.09 cfs 53,693 cf Outflow=11.34 cfs 58,672 cf

Pond P2: EXISTING RETENTION BASIN Peak Elev=319.76' Storage=57,926 cf Inflow=22.81 cfs 104,456 cf
Outflow=1.48 cfs 104,459 cf

Pond RD: ROOF DRAIN Peak Elev=323.46' Inflow=0.36 cfs 1,223 cf
6.0" Round Culvert n=0.012 L=57.0' S=0.0088 '/' Outflow=0.36 cfs 1,223 cf

Link POI 1: WESTERN PROPERTY BOUNDARY Inflow=0.04 cfs 341 cf
Primary=0.04 cfs 341 cf

Link POI 2: EXISTING ON-SITE RETENTION BASIN Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 3: MANCHESTERROAD Inflow=0.20 cfs 757 cf
Primary=0.20 cfs 757 cf

Total Runoff Area = 374,164 sf Runoff Volume = 117,749 cf Average Runoff Depth = 3.78"
39.12% Pervious = 146,369 sf 60.88% Impervious = 227,795 sf

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: PDA 1 Runoff Area=30,191 sf 100.00% Impervious Runoff Depth=7.08"
Tc=5.0 min CN=98 Runoff=5.16 cfs 17,814 cf

Subcatchment2S: PDA 2 Runoff Area=11,229 sf 100.00% Impervious Runoff Depth=7.08"
Tc=5.0 min CN=98 Runoff=1.92 cfs 6,626 cf

Subcatchment3S: PDA 3 Runoff Area=51,228 sf 88.80% Impervious Runoff Depth=6.39"
Tc=5.0 min CN=WQ Runoff=7.83 cfs 27,264 cf

Subcatchment4S: PDA 4 Runoff Area=97,635 sf 9.67% Impervious Runoff Depth=1.33"
Flow Length=501' Tc=28.5 min CN=WQ Runoff=1.37 cfs 10,805 cf

Subcatchment5S: PDA 5 Runoff Area=3,471 sf 38.95% Impervious Runoff Depth=3.30"
Tc=5.0 min CN=WQ Runoff=0.25 cfs 954 cf

Subcatchment6S: PDA 6 Runoff Area=11,070 sf 59.68% Impervious Runoff Depth=4.58"
Flow Length=92' Tc=6.3 min CN=WQ Runoff=1.12 cfs 4,228 cf

Subcatchment7S: PDA 7 Runoff Area=8,168 sf 71.33% Impervious Runoff Depth=5.30"
Tc=5.0 min CN=WQ Runoff=1.02 cfs 3,611 cf

Subcatchment8S: PDA 8 Runoff Area=11,051 sf 0.00% Impervious Runoff Depth=0.69"
Tc=5.0 min CN=WQ Runoff=0.10 cfs 637 cf

Subcatchment9S: PDA 9 Runoff Area=10,271 sf 87.27% Impervious Runoff Depth=6.29"
Tc=5.0 min CN=WQ Runoff=1.55 cfs 5,385 cf

Subcatchment10S: PDA 10 Runoff Area=34,045 sf 90.99% Impervious Runoff Depth=6.52"
Tc=5.0 min CN=WQ Runoff=5.32 cfs 18,506 cf

Subcatchment11S: PDA 11 Runoff Area=16,410 sf 100.00% Impervious Runoff Depth=7.08"
Tc=5.0 min CN=98 Runoff=2.80 cfs 9,683 cf

Subcatchment12S: PDA 12 Runoff Area=71,168 sf 65.70% Impervious Runoff Depth=4.92"
Tc=5.0 min CN=WQ Runoff=8.20 cfs 29,155 cf

Subcatchment13S: PDA 13 Runoff Area=2,470 sf 100.00% Impervious Runoff Depth=7.08"
Tc=5.0 min CN=98 Runoff=0.42 cfs 1,457 cf

Subcatchment14S: PDA 14 Runoff Area=7,681 sf 89.66% Impervious Runoff Depth=6.44"
Tc=5.0 min CN=WQ Runoff=1.19 cfs 4,122 cf

Subcatchment15S: PDA 15 Runoff Area=3,865 sf 100.00% Impervious Runoff Depth=7.08"
Tc=5.0 min CN=WQ Runoff=0.66 cfs 2,281 cf

Subcatchment16S: PDA 16 Runoff Area=4,211 sf 31.51% Impervious Runoff Depth=2.84"
Tc=5.0 min CN=WQ Runoff=0.26 cfs 996 cf

Pond CB: EXISTING CB SYSTEM Inflow=14.91 cfs 51,704 cf
Primary=14.91 cfs 51,704 cf

Pond CB1: N-CB-1 Peak Elev=321.69' Inflow=1.02 cfs 3,611 cf
12.0" Round Culvert n=0.012 L=38.0' S=0.0053 '/' Outflow=1.02 cfs 3,611 cf

Pond CB2: N-CB-2 Peak Elev=323.96' Inflow=2.21 cfs 7,666 cf
12.0" Round Culvert n=0.012 L=99.0' S=0.0051 '/' Outflow=2.21 cfs 7,666 cf

Pond CB3: N-CB-3 Peak Elev=324.18' Inflow=2.80 cfs 9,683 cf
12.0" Round Culvert n=0.012 L=296.0' S=0.0051 '/' Outflow=2.80 cfs 9,683 cf

Pond CB4: N-CB-4 Peak Elev=322.52' Inflow=11.94 cfs 41,434 cf
24.0" Round Culvert n=0.012 L=186.0' S=0.0054 '/' Outflow=11.94 cfs 41,434 cf

Pond CB5: N-CB-5 Peak Elev=323.21' Inflow=3.81 cfs 13,246 cf
18.0" Round Culvert n=0.012 L=202.0' S=0.0050 '/' Outflow=3.81 cfs 13,246 cf

Pond CB6: N-CB-6 Peak Elev=324.04' Inflow=0.66 cfs 2,281 cf
12.0" Round Culvert n=0.012 L=32.0' S=0.0062 '/' Outflow=0.66 cfs 2,281 cf

Pond CB611: EXISTING CB 611 Inflow=0.25 cfs 954 cf
Primary=0.25 cfs 954 cf

Pond CB7: N-CB-7 Peak Elev=321.69' Inflow=1.12 cfs 4,228 cf
12.0" Round Culvert n=0.012 L=11.0' S=0.0045 '/' Outflow=1.12 cfs 4,228 cf

Pond CB8: N-CB-8 Peak Elev=321.69' Inflow=0.26 cfs 996 cf
12.0" Round Culvert n=0.012 L=40.0' S=0.0175 '/' Outflow=0.26 cfs 996 cf

Pond DW: DRY WELL SYSTEM Peak Elev=321.69' Storage=4,170 cf Inflow=2.39 cfs 8,835 cf
Outflow=0.14 cfs 8,835 cf

Pond P1: SEDIMENT FOREBAY Peak Elev=321.87' Storage=6,365 cf Inflow=20.14 cfs 70,589 cf
Discarded=0.28 cfs 6,897 cf Primary=12.59 cfs 63,692 cf Outflow=12.87 cfs 70,589 cf

Pond P2: EXISTING RETENTION BASIN Peak Elev=320.37' Storage=71,638 cf Inflow=26.61 cfs 126,201 cf
Outflow=1.68 cfs 126,205 cf

Pond RD: ROOF DRAIN Peak Elev=323.57' Inflow=0.42 cfs 1,457 cf
6.0" Round Culvert n=0.012 L=57.0' S=0.0088 '/' Outflow=0.42 cfs 1,457 cf

Link POI 1: WESTERN PROPERTY BOUNDARY Inflow=0.10 cfs 637 cf
Primary=0.10 cfs 637 cf

Link POI 2: EXISTING ON-SITE RETENTION BASIN Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POI 3: MANCHESTERROAD Inflow=0.25 cfs 954 cf
Primary=0.25 cfs 954 cf

Total Runoff Area = 374,164 sf Runoff Volume = 143,523 cf Average Runoff Depth = 4.60"
39.12% Pervious = 146,369 sf 60.88% Impervious = 227,795 sf

Summary for Subcatchment 1S: PDA 1

Runoff = 5.16 cfs @ 12.07 hrs, Volume= 17,814 cf, Depth= 7.08"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	30,191	98	EXISTING BUILDING
	30,191		100.00% Impervious Area

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

Summary for Subcatchment 2S: PDA 2

Runoff = 1.92 cfs @ 12.07 hrs, Volume= 6,626 cf, Depth= 7.08"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	11,229	98	EXISTING BUILDING
	11,229		100.00% Impervious Area

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

Summary for Subcatchment 3S: PDA 3

Runoff = 7.83 cfs @ 12.07 hrs, Volume= 27,264 cf, Depth= 6.39"
Routed to Pond CB : EXISTING CB SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	22,392	98	EXISTING PAVEMENT
*	3,765	98	EXISTING CONCRETE
*	17,894	98	PROPOSED PAVEMENT
*	1,223	98	PROPOSED CONCRETE
*	214	98	PROPOSED SIDEWALK
	5,740	39	>75% Grass cover, Good, HSG A
	51,228		Weighted Average
	5,740		11.20% Pervious Area
	45,488		88.80% Impervious Area

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

Summary for Subcatchment 4S: PDA 4

Runoff = 1.37 cfs @ 12.45 hrs, Volume= 10,805 cf, Depth= 1.33"
Routed to Pond P2 : EXISTING RETENTION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	3,663	98	EXISTING PAVEMENT
*	529	98	EXISTING CONCRETE
*	5,252	98	EXISTING GRAVEL
	63,236	39	>75% Grass cover, Good, HSG A
	24,955	30	Woods, Good, HSG A
	97,635		Weighted Average
	88,191		90.33% Pervious Area
	9,444		9.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	50	0.0040	0.59		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.78"
3.6	106	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	37	0.0030	0.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.5	100	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.9	84	0.0010	0.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	26	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	98	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.5	501	Total			

Summary for Subcatchment 5S: PDA 5

Runoff = 0.25 cfs @ 12.08 hrs, Volume= 954 cf, Depth= 3.30"
Routed to Pond CB611 : EXISTING CB 611

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	1,352	98	EXISTING PAVEMENT
	2,119	39	>75% Grass cover, Good, HSG A
	3,471		Weighted Average
	2,119		61.05% Pervious Area
	1,352		38.95% Impervious Area

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

Summary for Subcatchment 6S: PDA 6

Runoff = 1.12 cfs @ 12.09 hrs, Volume= 4,228 cf, Depth= 4.58"
Routed to Pond CB7 : N-CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	5,218	98	EXISTING PAVEMENT
*	1,389	98	PROPOSED PAVEMENT
	4,463	39	>75% Grass cover, Good, HSG A
	11,070		Weighted Average
	4,463		40.32% Pervious Area
	6,607		59.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	50	0.0260	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.78"
0.9	42	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.3	92	Total			

Summary for Subcatchment 7S: PDA 7

Runoff = 1.02 cfs @ 12.07 hrs, Volume= 3,611 cf, Depth= 5.30"
Routed to Pond CB1 : N-CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	2,970	98	EXISTING PAVEMENT
*	2,856	98	PROPOSED PAVEMENT
	2,342	39	>75% Grass cover, Good, HSG A
	8,168		Weighted Average
	2,342		28.67% Pervious Area
	5,826		71.33% Impervious Area

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

Summary for Subcatchment 8S: PDA 8

Runoff = 0.10 cfs @ 12.12 hrs, Volume= 637 cf, Depth= 0.69"
Routed to Link POI 1 : WESTERN PROPERTY BOUNDARY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

Area (sf)	CN	Description
7,562	39	>75% Grass cover, Good, HSG A
3,489	30	Woods, Good, HSG A
11,051		Weighted Average
11,051		100.00% Pervious Area

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

Summary for Subcatchment 9S: PDA 9

Runoff = 1.55 cfs @ 12.07 hrs, Volume= 5,385 cf, Depth= 6.29"
Routed to Pond CB2 : N-CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	8,963	98	PROPOSED PAVEMENT
	1,308	39	>75% Grass cover, Good, HSG A
	10,271		Weighted Average
	1,308		12.73% Pervious Area
	8,963		87.27% Impervious Area

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

Summary for Subcatchment 10S: PDA 10

Runoff = 5.32 cfs @ 12.07 hrs, Volume= 18,506 cf, Depth= 6.52"
Routed to Pond CB4 : N-CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	15,453	98	EXISTING PAVEMENT
*	4,625	98	EXISTING CONCRETE
*	10,611	98	PROPOSED PAVEMENT
*	290	98	PROPOSED CONCRETE
	3,066	39	>75% Grass cover, Good, HSG A
	34,045		Weighted Average
	3,066		9.01% Pervious Area
	30,979		90.99% Impervious Area

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

Summary for Subcatchment 11S: PDA 11

Runoff = 2.80 cfs @ 12.07 hrs, Volume= 9,683 cf, Depth= 7.08"
Routed to Pond CB3 : N-CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	16,410	98	PROPOSED PAVEMENT
	16,410		100.00% Impervious Area

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

Summary for Subcatchment 12S: PDA 12

Runoff = 8.20 cfs @ 12.07 hrs, Volume= 29,155 cf, Depth= 4.92"
Routed to Pond P1 : SEDIMENT FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	10,672	98	EXISTING PAVEMENT
*	870	98	EXISTING CONCRETE
*	1,375	98	EXISTING GRAVEL
*	33,840	98	PROPOSED PAVEMENT
	19,790	39	>75% Grass cover, Good, HSG A
	4,621	30	Woods, Good, HSG A
	71,168		Weighted Average
	24,411		34.30% Pervious Area
	46,757		65.70% Impervious Area

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

Summary for Subcatchment 13S: PDA 13

Runoff = 0.42 cfs @ 12.07 hrs, Volume= 1,457 cf, Depth= 7.08"
Routed to Pond RD : ROOF DRAIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	2,470	98	PROPOSED BUILDING
	2,470		100.00% Impervious Area

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

Summary for Subcatchment 14S: PDA 14

Runoff = 1.19 cfs @ 12.07 hrs, Volume= 4,122 cf, Depth= 6.44"
Routed to Pond CB5 : N-CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	6,595	98	PROPOSED PAVEMENT
*	292	98	PROPOSED CONCRETE
	794	39	>75% Grass cover, Good, HSG A
	7,681		Weighted Average
	794		10.34% Pervious Area
	6,887		89.66% Impervious Area

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

Summary for Subcatchment 15S: PDA 15

Runoff = 0.66 cfs @ 12.07 hrs, Volume= 2,281 cf, Depth= 7.08"
Routed to Pond CB6 : N-CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	3,496	98	PROPOSED PAVEMENT
*	223	98	PROPOSED CONCRETE
*	146	98	PROPOSED SIDEWALK
	3,865		Weighted Average
	3,865		100.00% Impervious Area

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

Summary for Subcatchment 16S: PDA 16

Runoff = 0.26 cfs @ 12.08 hrs, Volume= 996 cf, Depth= 2.84"
Routed to Pond CB8 : N-CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.32"

	Area (sf)	CN	Description
*	155	98	EXISTING PAVEMENT
*	997	98	PROPOSED PAVEMENT
*	175	98	PROPOSED SIDEWALK
	2,884	39	>75% Grass cover, Good, HSG A
	4,211		Weighted Average
	2,884		68.49% Pervious Area
	1,327		31.51% Impervious Area

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

Summary for Pond CB: EXISTING CB SYSTEM

Inflow Area = 92,648 sf, 93.80% Impervious, Inflow Depth = 6.70" for 100-yr event
Inflow = 14.91 cfs @ 12.07 hrs, Volume= 51,704 cf
Primary = 14.91 cfs @ 12.07 hrs, Volume= 51,704 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB1: N-CB-1

Inflow Area = 8,168 sf, 71.33% Impervious, Inflow Depth = 5.30" for 100-yr event
Inflow = 1.02 cfs @ 12.07 hrs, Volume= 3,611 cf
Outflow = 1.02 cfs @ 12.07 hrs, Volume= 3,611 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.07 hrs, Volume= 3,611 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 321.69' @ 14.00 hrs
Flood Elev= 324.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.50'	**12.0" Round Culvert** L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 320.50' / 320.30' S= 0.0053 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.02 cfs @ 12.07 hrs HW=321.10' TW=316.42' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 1.02 cfs @ 2.94 fps)

Summary for Pond CB2: N-CB-2

Inflow Area = 14,136 sf, 90.75% Impervious, Inflow Depth = 6.51" for 100-yr event
Inflow = 2.21 cfs @ 12.07 hrs, Volume= 7,666 cf
Outflow = 2.21 cfs @ 12.07 hrs, Volume= 7,666 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.21 cfs @ 12.07 hrs, Volume= 7,666 cf
Routed to Pond CB5 : N-CB-5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.96' @ 12.07 hrs
Flood Elev= 326.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**12.0" Round Culvert** L= 99.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 322.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.20 cfs @ 12.07 hrs HW=323.96' TW=323.20' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 2.20 cfs @ 3.64 fps)

Summary for Pond CB3: N-CB-3

Inflow Area = 16,410 sf,100.00% Impervious, Inflow Depth = 7.08" for 100-yr event
Inflow = 2.80 cfs @ 12.07 hrs, Volume= 9,683 cf
Outflow = 2.80 cfs @ 12.07 hrs, Volume= 9,683 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.80 cfs @ 12.07 hrs, Volume= 9,683 cf
Routed to Pond CB4 : N-CB-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 324.18' @ 12.08 hrs
Flood Elev= 326.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**12.0" Round Culvert** L= 296.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 321.50' S= 0.0051 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.76 cfs @ 12.07 hrs HW=324.17' TW=322.47' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.76 cfs @ 3.78 fps)

Summary for Pond CB4: N-CB-4

Inflow Area = 74,742 sf, 93.09% Impervious, Inflow Depth = 6.65" for 100-yr event
Inflow = 11.94 cfs @ 12.07 hrs, Volume= 41,434 cf
Outflow = 11.94 cfs @ 12.07 hrs, Volume= 41,434 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.94 cfs @ 12.07 hrs, Volume= 41,434 cf
Routed to Pond P1 : SEDIMENT FOREBAY

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 322.52' @ 12.10 hrs
Flood Elev= 325.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.50'	**24.0" Round Culvert** L= 186.0' Ke= 0.500 Inlet / Outlet Invert= 320.50' / 319.50' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=11.40 cfs @ 12.07 hrs HW=322.47' TW=321.47' (Dynamic Tailwater)
1=Culvert (Outlet Controls 11.40 cfs @ 4.59 fps)

Summary for Pond CB5: N-CB-5

Inflow Area = 24,287 sf, 91.35% Impervious, Inflow Depth = 6.54" for 100-yr event
Inflow = 3.81 cfs @ 12.07 hrs, Volume= 13,246 cf
Outflow = 3.81 cfs @ 12.07 hrs, Volume= 13,246 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.81 cfs @ 12.07 hrs, Volume= 13,246 cf
Routed to Pond CB4 : N-CB-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.21' @ 12.08 hrs
Flood Elev= 326.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	322.00'	**18.0" Round Culvert** L= 202.0' Ke= 0.500 Inlet / Outlet Invert= 322.00' / 321.00' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=3.68 cfs @ 12.07 hrs HW=323.20' TW=322.47' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.68 cfs @ 3.33 fps)

Summary for Pond CB6: N-CB-6

Inflow Area = 3,865 sf,100.00% Impervious, Inflow Depth = 7.08" for 100-yr event
Inflow = 0.66 cfs @ 12.07 hrs, Volume= 2,281 cf
Outflow = 0.66 cfs @ 12.07 hrs, Volume= 2,281 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.66 cfs @ 12.07 hrs, Volume= 2,281 cf
Routed to Pond CB2 : N-CB-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 324.04' @ 12.08 hrs
Flood Elev= 326.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.30'	**12.0" Round Culvert** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 323.30' / 323.10' S= 0.0062 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.63 cfs @ 12.07 hrs HW=324.03' TW=323.96' (Dynamic Tailwater)
↳**1=Culvert** (Outlet Controls 0.63 cfs @ 1.43 fps)

Summary for Pond CB611: EXISTING CB 611

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 3.30" for 100-yr event
Inflow = 0.25 cfs @ 12.08 hrs, Volume= 954 cf
Primary = 0.25 cfs @ 12.08 hrs, Volume= 954 cf, Atten= 0%, Lag= 0.0 min
Routed to Link POI 3 : MANCHESTER ROAD

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond CB7: N-CB-7

Inflow Area = 11,070 sf, 59.68% Impervious, Inflow Depth = 4.58" for 100-yr event
Inflow = 1.12 cfs @ 12.09 hrs, Volume= 4,228 cf
Outflow = 1.12 cfs @ 12.09 hrs, Volume= 4,228 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.12 cfs @ 12.09 hrs, Volume= 4,228 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 321.69' @ 14.00 hrs
Flood Elev= 324.15'

Device	Routing	Invert	Outlet Devices
#1	Primary	320.15'	**12.0" Round Culvert** L= 11.0' Ke= 0.500 Inlet / Outlet Invert= 320.15' / 320.10' S= 0.0045 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.12 cfs @ 12.09 hrs HW=320.83' TW=316.81' (Dynamic Tailwater)
↳**1=Culvert** (Barrel Controls 1.12 cfs @ 2.81 fps)

Summary for Pond CB8: N-CB-8

Inflow Area = 4,211 sf, 31.51% Impervious, Inflow Depth = 2.84" for 100-yr event
Inflow = 0.26 cfs @ 12.08 hrs, Volume= 996 cf
Outflow = 0.26 cfs @ 12.08 hrs, Volume= 996 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.26 cfs @ 12.08 hrs, Volume= 996 cf
Routed to Pond DW : DRY WELL SYSTEM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 321.69' @ 14.00 hrs
Flood Elev= 325.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	321.00'	**12.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 321.00' / 320.30' S= 0.0175 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.26 cfs @ 12.08 hrs HW=321.25' TW=316.54' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.26 cfs @ 1.70 fps)

Summary for Pond DW: DRY WELL SYSTEM

Inflow Area = 23,449 sf, 58.68% Impervious, Inflow Depth = 4.52" for 100-yr event
Inflow = 2.39 cfs @ 12.08 hrs, Volume= 8,835 cf
Outflow = 0.14 cfs @ 13.99 hrs, Volume= 8,835 cf, Atten= 94%, Lag= 114.5 min
Discarded = 0.14 cfs @ 13.99 hrs, Volume= 8,835 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 321.69' @ 13.99 hrs Surf.Area= 908 sf Storage= 4,170 cf
Flood Elev= 322.30' Surf.Area= 908 sf Storage= 4,177 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 303.1 min (1,059.8 - 756.7)

Volume	Invert	Avail.Storage	Storage Description
#1	321.70'	2 cf	**2.00'W x 2.00'L x 0.60'H DW COLLAR** Impervious
#2	311.90'	493 cf	**8.00'D x 9.80'H DRY WELL** Inside #3 601 cf Overall - 5.0" Wall Thickness = 493 cf
#3	310.90'	3,682 cf	**34.00'D x 10.80'H STONE STORAGE** 9,806 cf Overall - 601 cf Embedded = 9,205 cf x 40.0% Voids
		4,177 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	310.90'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=0.14 cfs @ 13.99 hrs HW=321.69' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Summary for Pond P1: SEDIMENT FOREBAY

Inflow Area = 145,910 sf, 79.73% Impervious, Inflow Depth = 5.81" for 100-yr event
Inflow = 20.14 cfs @ 12.07 hrs, Volume= 70,589 cf
Outflow = 12.87 cfs @ 12.16 hrs, Volume= 70,589 cf, Atten= 36%, Lag= 5.1 min
Discarded = 0.28 cfs @ 12.16 hrs, Volume= 6,897 cf
Primary = 12.59 cfs @ 12.16 hrs, Volume= 63,692 cf
Routed to Pond P2 : EXISTING RETENTION BASIN

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 321.87' @ 12.16 hrs Surf.Area= 3,974 sf Storage= 6,365 cf
Flood Elev= 323.00' Surf.Area= 5,487 sf Storage= 11,677 cf

Plug-Flow detention time= 16.9 min calculated for 70,579 cf (100% of inflow)
Center-of-Mass det. time= 17.0 min (763.5 - 746.6)

Volume	Invert	Avail.Storage	Storage Description
#1	318.00'	11,677 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.00	14	0	0	14
320.00	1,611	1,183	1,183	1,619
321.00	2,861	2,206	3,390	2,880
322.00	4,149	3,485	6,875	4,184
323.00	5,487	4,802	11,677	5,545

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.00'	**3.000 in/hr Exfiltration over Wetted area**
#2	Primary	318.90'	**18.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 318.90' / 318.70' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Discarded OutFlow Max=0.28 cfs @ 12.16 hrs HW=321.87' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=12.59 cfs @ 12.16 hrs HW=321.87' TW=319.02' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 12.59 cfs @ 7.12 fps)

Summary for Pond P2: EXISTING RETENTION BASIN

Inflow Area = 336,193 sf, 63.26% Impervious, Inflow Depth = 4.50" for 100-yr event
Inflow = 26.61 cfs @ 12.08 hrs, Volume= 126,201 cf
Outflow = 1.68 cfs @ 14.55 hrs, Volume= 126,205 cf, Atten= 94%, Lag= 147.7 min
Discarded = 1.68 cfs @ 14.55 hrs, Volume= 126,205 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 320.37' @ 14.55 hrs Surf.Area= 23,829 sf Storage= 71,638 cf
Flood Elev= 323.00' Surf.Area= 35,653 sf Storage= 149,415 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 504.2 min (1,261.4 - 757.2)

Volume	Invert	Avail.Storage	Storage Description
#1	315.00'	86,245 cf	**FOREBAY (Conic)** Listed below (Recalc)
#2	315.00'	63,170 cf	**RETENTION BASIN (Conic)** Listed below (Recalc)
		149,415 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	1,827	0	0	1,827
316.00	3,401	2,574	2,574	3,411
317.00	4,296	3,840	6,413	4,333
318.00	6,953	5,571	11,985	7,003
319.00	9,664	8,271	20,256	9,733
320.00	13,341	11,453	31,709	13,429
321.00	16,596	14,939	46,648	16,713
322.00	19,695	18,123	64,772	19,849
323.00	23,301	21,473	86,245	23,492

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	3,348	0	0	3,348
316.00	4,675	3,993	3,993	4,694
317.00	5,784	5,220	9,213	5,832
318.00	6,919	6,343	15,556	7,001
319.00	7,946	7,427	22,982	8,073
320.00	8,947	8,442	31,424	9,126
321.00	9,999	9,468	40,892	10,233
322.00	11,113	10,551	51,443	11,405
323.00	12,352	11,727	63,170	12,702

Device	Routing	Invert	Outlet Devices
#1	Discarded	315.00'	**3.000 in/hr Exfiltration over Wetted area**

Discarded OutFlow Max=1.68 cfs @ 14.55 hrs HW=320.37' (Free Discharge)
1=Exfiltration (Exfiltration Controls 1.68 cfs)

Summary for Pond RD: ROOF DRAIN

Inflow Area = 2,470 sf,100.00% Impervious, Inflow Depth = 7.08" for 100-yr event
Inflow = 0.42 cfs @ 12.07 hrs, Volume= 1,457 cf
Outflow = 0.42 cfs @ 12.07 hrs, Volume= 1,457 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.42 cfs @ 12.07 hrs, Volume= 1,457 cf
Routed to Pond CB5 : N-CB-5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 323.57' @ 12.08 hrs
Flood Elev= 323.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	323.00'	**6.0" Round Culvert** L= 57.0' Ke= 0.500 Inlet / Outlet Invert= 323.00' / 322.50' S= 0.0088 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf

Primary OutFlow Max=0.41 cfs @ 12.07 hrs HW=323.56' TW=323.20' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.41 cfs @ 2.30 fps)

Summary for Link POI 1: WESTERN PROPERTY BOUNDARY

Inflow Area = 11,051 sf, 0.00% Impervious, Inflow Depth = 0.69" for 100-yr event
Inflow = 0.10 cfs @ 12.12 hrs, Volume= 637 cf
Primary = 0.10 cfs @ 12.12 hrs, Volume= 637 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 2: EXISTING ON-SITE RETENTION BASIN

Inflow Area = 336,193 sf, 63.26% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link POI 3: MANCHESTER ROAD

Inflow Area = 3,471 sf, 38.95% Impervious, Inflow Depth = 3.30" for 100-yr event
Inflow = 0.25 cfs @ 12.08 hrs, Volume= 954 cf
Primary = 0.25 cfs @ 12.08 hrs, Volume= 954 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs