EXHIBIT 1
Received 6/13/16

Drainage Report:

Estates at Bull Meadow
Definitive Subdivision
North Grafton, Massachusetts

Submitted to:

Town of Grafton
Planning Board

June 10, 2016

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Estates at Bull Meadow
North Grafton, Massachusetts
STORMWATER MANAGEMENT DESIGN
June 10, 2016

INTRODUCTION

The proposed project site is a 33.4 acre parcel located east of 11 Appaloosa Drive in North Grafton, Massachusetts. The property is bounded by residential properties on Appaloosa Drive and Bridle Ridge Drive to the west, wetlands to the north, Mass DOT owned property to the south, and wetlands and residential property on Adams Road to the east. The existing site is currently undeveloped woodland. Refer to **Figure 1** for the Locus Plan.

The proposed project is a residential subdivision consisting of fifteen (15) single family residential units and two (2) roadways. Paddock Ridge Drive will connect Appaloosa Drive to Bridle Ridge Drive and is approximately 1,676 feet in length, and Carriage House Lane will be a cul-de-sac roadway off of Paddock Ridge Drive and is approximately 489 feet in length to the center of cul-de-sac.

The hydrologic study area is comprised of approximately 16.24 acres. Based on the USDA Natural Resources Conservation Service soil survey the majority of the site is comprised of Hinckley Loamy Sand and Canton Fine Sandy Loam, which are Hydrologic Soil Group (HSG) "A" Soils. Paxton and Woodbridge Fine Sandy Loams, which are Hydrologic Soil Group (HSG) "C" Soils are also present on site however they make up less than 5% of the hydrologic study area. Refer to **Appendix A** for the NRCS soil survey.

EXISTING CONDITIONS

Under existing conditions, the study area is comprised of approximately 15.99 acres of pervious area (grass and woodland area), and 0.25 acres of impervious area (driveway, rooftop and wetlands) that slopes in a southwest to northeast direction from approximate elevation 510 feet to 434 feet. The existing site is made up of two watershed areas that sheet flow from southwest to northeast to offsite bordering vegetated wetlands (BVW). Area 1 is the northernmost drainage area and is comprised of 10.13 acres of grass, driveway, rooftop, wetlands and woodland area that sheet flows overland to the Northern Wetland System (Reach 1R). Area 2 is located southeast of Area 1 and is comprised of 6.11 acres of woodland that sheet flows to the Southern Wetland System (Reach 2R). The Northern and Southern Wetland Systems converge off site and shall be considered the Point of Analysis 1 (Reach 3R) for this hydraulic study. Refer to **Figure 2** – Existing Watershed Plan.

PROPOSED CONDITIONS – Analysis 1

Under proposed conditions, the site is comprised of approximately 2.90 acres of impervious area (pavement and roof top), and 13.34 acres of pervious area (grass, trees and shrubs). The proposed site is comprised of 24 watershed areas where the same drainage pattern as existing will be maintained. Refer to **Figure 3** – Proposed Watershed Plan.

Area 1A is the central drainage area that is comprised of 5.35 acres of pavement, woodland and grass. Runoff from Rooftops within Area 1A are collected in roof leader systems and conveyed to drywell systems where it is recharged. Area 1A is comprised of the majority of the developed portion of the subdivision where runoff is collected in the proposed drainage infrastructure and is discharged to proposed infiltration basin 1 (Pond 1P).

Area 2A is located immediately northwest of Area 1A and is comprised of 3.53 acres of wetlands, woodland and grass. Runoff from this area flows overland to an existing wetland (Pond 3P). Runoff in this wetland is further conveyed through a 5’ x 10’ open bottom culvert under the proposed wetland crossing to the northern wetland system (Reach 1R) and is ultimately conveyed to the Point of Analysis 1 (Reach 3R).

Area 2B is located east of area 2A and is comprised of 0.46 acres of pavement, sidewalk and landscaped area. Runoff from this area is collected in catch basins and conveyed to infiltration basin 2 (Pond 2P) or flows overland to the basin. The runoff discharged from the basin flows overland to the northern wetland system (Reach 1R) and is ultimately conveyed to the Point of Analysis 1 (Reach 3R).

Area 2C is located east of area 2B and is comprised of 1.00 acres of grass. Runoff from this area flows overland to the northern wetland system (Reach 1R) and is ultimately conveyed to the Point of Analysis 1 (Reach 3R).

Area 3A is located immediately south of Area 1A and is comprised of 2.03 acres of existing roof top and driveway, woodland and lawn area. Runoff from this area flows overland to a proposed swale (Swale S1) and proposed raingarden on Lot 6 (Pond R6). Runoff from this area flows overland to the southern wetland system (Reach 2R) and is ultimately conveyed to the Point of Analysis 1 (Reach 3R).

Area 3B is located immediately east of Area 3A and is comprised of 0.19 acres of lawn area. Runoff from this area flows overland to a proposed raingarden on Lot 7 (Pond R7). Runoff from this area flows overland to the southern wetland system (Reach 2R) and is ultimately conveyed to the Point of Analysis 1 (Reach 3R).

Area 3C is located immediately east of Area 3B and is comprised of 0.21 acres of lawn area. Runoff from this area flows overland to a proposed raingarden on Lot 8 (Pond R8). Runoff from this area flows overland to the southern wetland system (Reach 2R) and is ultimately conveyed to the Point of Analysis 1 (Reach 3R).

Area 3D is located immediately east of Area 1A and is comprised of 1.49 acres of lawn area. Runoff from this area flows overland to a proposed raingarden on Lot 11 (Pond R11). Runoff from this area flows overland to the southern wetland system (Reach 2R) and is ultimately conveyed to the Point of Analysis 1 (Reach 3R).

Area 3E is located immediately east of Area 3D and is comprised of 0.86 acres of lawn area. Runoff from this area flows overland to the southern wetland system (Reach 2R) and is ultimately conveyed to the Point of Analysis 1 (Reach 3R).

Lot 01 is comprised of 0.08 acres of rooftop and driveway on Lot 1. Runoff from this area will be collected via a roof leader system and drain inlet and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 02 is comprised of 0.21 acres of rooftop and driveway on Lot 2. Runoff from this area will be collected via a roof leader system and drain inlet and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 03 is comprised of 0.05 acres of rooftop on Lot 3. Runoff from this area will be collected via a roof leader system and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 04 is comprised of 0.05 acres of rooftop on Lot 4. Runoff from this area will be collected via a roof leader system and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 05 is comprised of 0.07 acres of rooftop and driveway on Lot 5. Runoff from this area will be collected via a roof leader system and drain inlet and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 06 is comprised of 0.05 acres of rooftop on Lot 6. Runoff from this area will be collected via a roof leader system and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 07 is comprised of 0.05 acres of rooftop on Lot 7. Runoff from this area will be collected via a roof leader system and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 08 is comprised of 0.05 acres of rooftop on Lot 8. Runoff from this area will be collected via a roof leader system and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 09 is comprised of 0.05 acres of rooftop on Lot 9. Runoff from this area will be collected via a roof leader system and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 10 is comprised of 0.08 acres of rooftop and driveway on Lot 10. Runoff from this area will be collected via a roof leader system and drain inlet and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 11 is comprised of 0.08 acres of rooftop and driveway on Lot 11. Runoff from this area will be collected via a roof leader system and drain inlet and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 12 is comprised of 0.08 acres of rooftop and driveway on Lot 12. Runoff from this area will be collected via a roof leader system and drain inlet and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 13 is comprised of 0.08 acres of rooftop and driveway on Lot 13. Runoff from this area will be collected via a roof leader system and drain inlet and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 14 is comprised of 0.08 acres of rooftop and driveway on Lot 14. Runoff from this area will be collected via a roof leader system and drain inlet and conveyed to a drywell system designed to infiltrate the 100 year runoff volume.

Lot 15 is comprised of 0.08 acres of rooftop and driveway on Lot 15. Runoff from this area will be collected via a roof leader system and drain inlet and conveyed to infiltration basin 2 (Pond 2P). The runoff discharged from the basin flows overland to the northern wetland system (Reach 1R) and is ultimately conveyed to the Point of Analysis 1 (Reach 3R).

PROPOSED CONDITIONS – Analysis 2

The stormwater management design utilizes both proposed and existing stormwater Best Management Practices (BMP's) to meet the MassDEP Stormwater Management Guidelines. The majority of the proposed subdivision has been designed to discharge to the proposed BMP's, as detailed in the **Analysis 1** section above, however a portion of the proposed roadway that extends from the existing cul-de-sac on Appaloosa Drive through the existing access easement and up to the high point STA 13+81.02 on Paddock Ridge Drive could not be directed to the proposed peak flow attenuating BMP's. Therefore the runoff generated on that section is being directed to Existing Detention Basin 2 located in the drainage easement located on 11 Appaloosa Drive.

The proposed site discharging to Existing Detention Basin 2 is comprised on one watershed area, Area 4, where the same drainage pattern as existing will be maintained. Area 4 is located immediately west of Area 2B and is comprised of 0.43 acres of pavement, sidewalk and landscaped area (See **Figure 3**). Runoff from this area is collected in catch basins and conveyed to Existing Detention Basin 2 (Pond 2). The runoff discharged from the basin flows overland to the northern wetland system (Reach 1R) as detailed in Analysis 1 above.

STORMWATER MANAGEMENT

The proposed drainage design was based on the revised Massachusetts Department of Environmental Protection (DEP) Stormwater Management Standards (Stormwater

Policy). The standards have been revised to promote increased stormwater recharge, the treatment of more runoff from polluting land uses, Low Impact Development (LID) techniques, pollution prevention, the removal of illicit discharges to stormwater management systems, and improved operation and maintenance of stormwater BMP's. The following summarizes the proposed project's compliance with the revised Stormwater Management Standards.

Standard #1 Untreated Stormwater: No new stormwater conveyances have been proposed to discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. LID techniques, such as grassed channels, rain gardens and dry wells are proposed in addition to infiltration basins within the development to provide stormwater quality control prior to discharging to adjacent wetlands.

Standard #2 Post-Development Peak Discharge Rates: As a result of the increase in net impervious area from existing to proposed conditions, stormwater BMP's have been developed to attenuate the peak discharge rates for the 2, 10 and 100 year, 24-hour storm events. Refer to table 1 for the pre and post-development peak discharge rates.

Standard #3 Recharge to Groundwater: The project site is located within Hydrologic Soil Group (HSG) "A" and "C" classified soil. Per MA DEP standards, recharge is required to eliminate or minimize the loss of annual recharge to groundwater through the use of environmentally sensitive site design, BMP's and good operation and maintenance. The required recharge volume for the proposed project is 0.133 AC-FT. For the 2-year storm event, the infiltration basins, rain gardens and dry wells will provide approximately 0.393 AC-FT of recharge. Refer to the HydroCAD model in **Appendix B**. In addition, the project will provide approximately 0.61 AC-FT of volume (water quality volume) below the outlet to the infiltration basins. Because the basins are located within an "A" soil, the water quality volumes will draw down within 30 hours. Refer to **Appendix A** for the recharge calculations and drawdown analysis.

Standard #4 80 Percent TSS Removal: Based on the proposed stormwater management system design, BMP's the proposed subdivision will remove 85% of the Total Suspended Solids (TSS) from the stormwater runoff discharging from the site. This will be achieved through the use of deep sump catch basins and infiltration basins that are sized to capture in excess of the required water quality volume. The MA DEP Stormwater Management Standards require a water quality volume of 0.5 inches of runoff times the proposed impervious area. As noted above, the proposed infiltration basins will treat the required water quality volume, which will be provided below the outlets in the basins. Refer to **Appendix A** for the Water Quality Volume calculations and the TSS Removal Worksheet.

Standard #5 Higher Potential Pollutant Loads: The proposed project is not classified by the DEP as a source for higher pollutant loads.

Standard #6 Protection of Critical Areas: The project site is not considered a critical area as defined by the MA DEP.

Standard #7 Redevelopment Project: The project is not considered a redevelopment site.

Standard #8 Erosion/Sediment Control: Erosion and sediment controls are incorporated into the project design to prevent erosion, control sediment movement, and stabilize exposed soils during construction. During construction, control practices will be utilized such as the placement of hay bale barriers, silt fencing, and the implementation of soil stabilization practices. These control measures will be periodically checked and maintained as necessary throughout the entire construction duration. As the project is disturbing more than one acre, a Stormwater Pollution Prevention Plan (SWPPP) is required. A SWPPP will be developed and submitted to the Town of Grafton and the US EPA prior to the start of land disturbing activities.

Standard #9 Operation/Maintenance Plan: A long term operation and maintenance plan has been developed to ensure the stormwater management system will function as designed. See **Appendix A** for the Operation and Maintenance Plan.

Standard #10 Illicit Discharges to Stormwater Management System: The Stormwater Management System associated with the development of the Estates at Bull Meadow Subdivision has been designed such that prior to storm water runoff discharging from the site, it is treated through a series of best management practices. To the Engineer's knowledge, there are no known or designed non-storm water discharges that are or will be connected to the storm water collection system that would convey pollutants directly to groundwater or surface waters.

The proposed design meets **all** applicable DEP Stormwater Management Standards. Refer to **Appendix A** for the MADEP Stormwater Checklist.

DRAINAGE COLLECTION SYSTEM DESIGN

The proposed drain pipe network is composed of deep sump catch basins and manholes that will collect runoff from the parking and landscaped areas within the proposed development and convey it to the proposed infiltration basins. Additionally, a 2'x3' and 5'x10' culvert are proposed to convey existing drainage courses across the proposed subdivision roadway. The pipe layout is depicted on the Grading and Drainage Plans and Roadway and Utility Profiles.

Pipe sizes were determined using the Rational Method to determine contributing flows to catch basins, as well as the Manning's Equation to calculate pipe flows (refer to **Appendix A** for pipe sizing calculations.)

The following criteria were used to design the pipe network:

- Manholes are provided at all changes in direction or changes in pipe size.
- Pipe sizes are based on flows for the 25-year storm frequency.

- Storm drain pipes shall be RCP.
- Culverts were sized to convey the 100-year storm event.

STORMWATER QUANTITY – Analysis 1

Due to the proposed increase in impervious area, the project will require BMP's for infiltration and detention in order to comply with Standard # 2 of the DEP Stormwater Management Policy. The stormwater facilities proposed include rain gardens, a vegetated drainage channel, dry wells and infiltration basins. The proposed BMP's will infiltrate the stormwater runoff well in excess of the required water quality volume and required recharge volumes, in addition to attenuating the peak runoff rates for the 2-year, 10-year and 100-year, 24-hour storm events.

Hydrologic analyses were performed utilizing the computer program, HydroCAD©. In order to determine the peak rate of discharge for existing and proposed conditions, runoff hydrographs were generated for the 2-year, 10-year and 100-year, 24-hour storm events using the SCS TR-20 Method and Type III rainfall distribution. Precipitation amounts utilized in the analysis are as defined by NRCC Cornell Data (refer to **Appendix B** for the existing and proposed HydroCAD models). Under proposed conditions, the post development runoff hydrographs were flood routed through the proposed stormwater management facilities.

Table 1 compares peak runoff rates for the 2-year, 10-year, and 100-year storm events for existing and proposed conditions.

Table 1 Comparison of Peak Runoff Rates

Storm Event	Existing		Proposed	
	Flow (cfs)	Volume (af)	Flow (cfs)	Volume (af)
2-Year	0.00	0.000	0.00	0.000
10-Year	0.90	0.061	0.05	0.029
100-Year	7.34	1.280	6.54	0.944

As shown in Table 1, peak runoff rates and volumes under proposed conditions are less than existing conditions for the 2-, 10-, 25- and 100-year storm events. Therefore, the proposed stormwater design complies with Standard #2 of the MA DEP Stormwater Management Policy.

STORMWATER QUANTITY – Analysis 2

The Drainage Analysis and Design from the North Grafton Estates II project, dated March 21st, 2002 was analyzed and it was determined that there was excess capacity in Detention Basin 2 to accommodate the runoff from this section of the proposed

subdivision roadway. **Table 2** compares peak runoff rates for the 2-year, 10-year, and 100-year, 24-hour storm events for existing and proposed conditions as modeled in 2002. As shown in Table 2, Existing Detention Basin 2 was designed with excess capacity for the 2-, 10- and 100-year storm events.

Table 2 Comparison of Peak Runoff Rates

Storm Event	Existing Flow (cfs)	Proposed Flow (cfs)	Excess Capacity (cfs)
2-Year	5.07	3.00	**2.07**
10-Year	19.47	15.46	**4.01**
100-Year	39.55	28.37	**11.18**

The same methodology as in Analysis 1 above was used to model the runoff impacts from the development of Area 4. A HydroCAD analysis was created modeling the Existing Detention Basin 2 with the same input parameters as it was modeled in 2002. With an empty basin for the 100-year storm event, the runoff only staged 0.24 feet. As a second check, the basin volume was adjusted to only show the available storage above the original design 100-year flood elevation of 438.90 ft. This analysis accounts for a full detention basin and shows the resulting impact from Proposed Area 4 (refer to **Appendix B** for the Existing Basin 2 HydroCAD analysis). Refer to Table 3 for the increase in peak runoff rates resulting from Proposed Area 4. The results show that the proposed Area 4 runoff will have no negative impact on the performance of Existing Detention Basin 2.

Table 3 Peak Runoff Rates from Area 4

Storm Event	Existing Flow (cfs)
2-Year	0.46
10-Year	1.08
100-Year	2.80

Culvert Design

The proposed stormwater management design includes the use of 2 culverts to convey stormwater that would be impounded by the proposed subdivision roadway. The first culvert is a 2’x3’ box culvert located at STA 15+27.5 that is required to convey the runoff from the existing subdivision west of the proposed project. In order to quantify the runoff to be conveyed by this culvert, the drainage analysis and design from the North Grafton Estates II project, dated March 21st, 2002 was analyzed. It was determined from the analysis that the 100-Year 24-hour peak flow rate to this culvert was 20.93 CFS. Utilizing 20.93 CFS as a base flow, a box culvert was analyzed with the computer model HydroCAD and it was determined that a 2’x3’ box culvert would only stage 0.93’ for the 100-Year 24-hour storm event, providing a factor of safety greater than 2 (refer to **Appendix B** for the 2’x3’ culvert design).

The second culvert is a 5'x10' open bottom culvert located at STA 13+82.9 that is being installed at the elevated wetland crossing to maintain a natural connection to the BVW. In addition to being utilized as a hydraulic connection, the open bottom culvert is being used to maintain the natural wetland groundcover so as not to inhibit wildlife crossing. The size of the culvert was selected solely to support the wildlife crossing and is significantly oversized hydraulically. Additionally, although it is not a stream crossing, the proposed culvert will provide an openness ratio of 1.16 which significantly exceeds the U.S. Army Corps of Engineers openness ratio requirement of 0.25 (refer to the proposed HydroCAD analysis in **Appendix B** for the 5'x10' culvert performance).

STORMWATER QUALITY

All stormwater runoff will be treated to address water quality concerns through the use of DEP approved BMP's. The following BMP's will be provided on-site and when combined will achieve in approximately 85% TSS removal: deep sump hooded catch basins, a sediment forebay and above and below grade infiltration basins. (See **Appendix A** for TSS Removal Worksheets)

Deep Sump Catch Basins

The catch basins on the proposed site will be deep sump/hooded catch basins, which will serve to trap sediment and floatables before entering the drainage system. The sump will be four-feet deep. A hood will be provided with a vacuum-break to avoid siphoning of floatables out of the catch basin. Inlets in the catch basin should be cleaned a minimum of four times per year and inspected monthly. All sediments and hydrocarbons should be properly handled and disposed, in accordance with local, state, and federal guidelines and regulations.

Sediment Forebay

A sediment forebay will precede the above grade detention basin. It has been sized to capture in excess of 0.1" of runoff over the impervious area (175 cf required, 214 cf provided). This will provide both velocity dissipation and additional TSS removal. The forebay will be cleaned four times per year and inspected monthly. All sediments and hydrocarbons will be properly handled and disposed of off-site.

Above Grade Infiltration Basin

Once constructed, the infiltration basin will be inspected after several storm events to confirm drainage system functions, bank stability, and vegetation growth. Any problems will be addressed immediately. The basin will be inspected for proper operation at least once per year. Inspections will be conducted during wet weather to determine if the basin is functioning properly. At least twice during the growing season, the upper-stage, side slopes, embankment, and emergency spillway will be mowed. Accumulated trash and

debris will be removed. Sediment will be removed from the basin as necessary, at least once every 10 years.

Rain Gardens

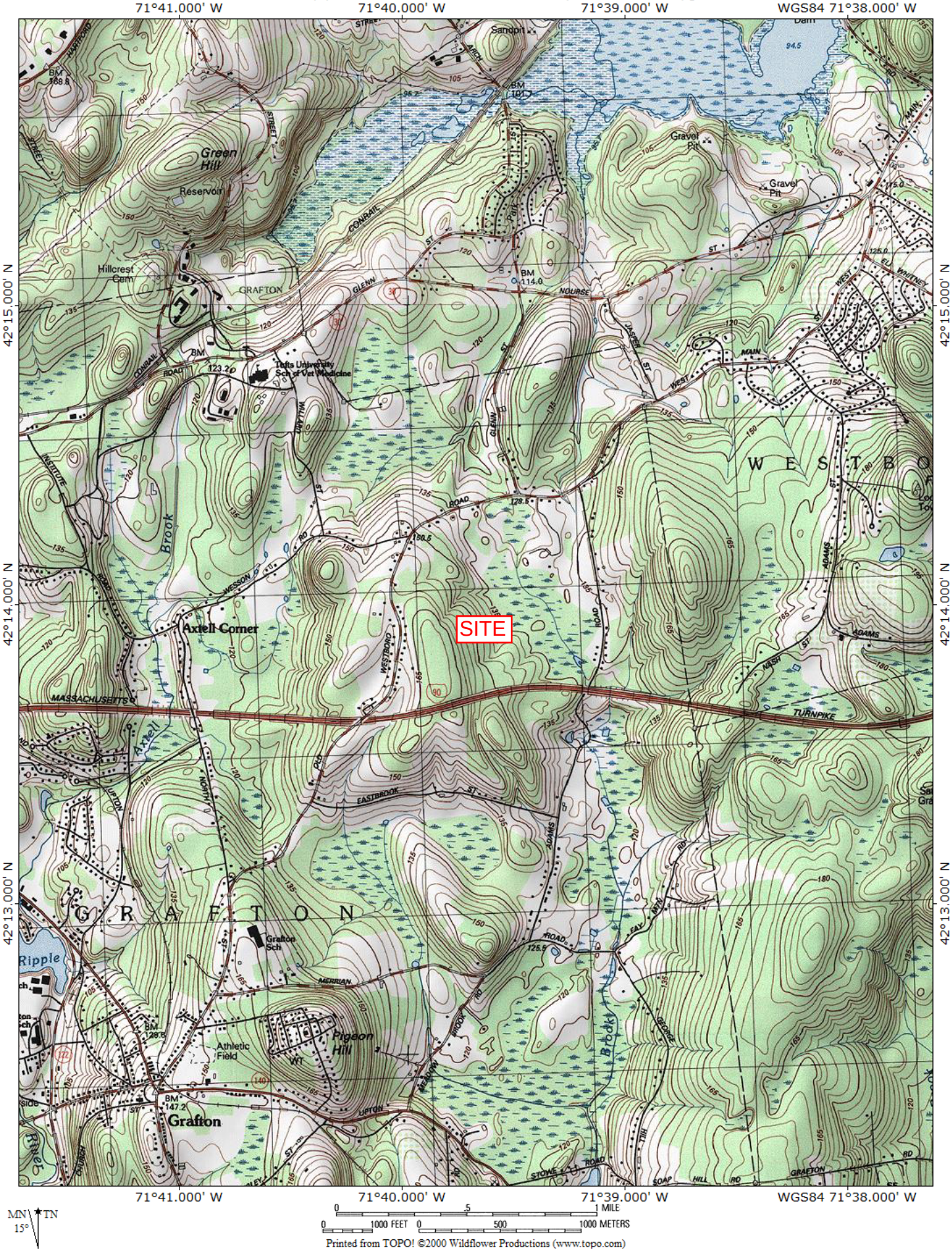
Rain gardens are stormwater treatment techniques located in shallow depressions that use porous media such as sandy soil and gravel topped with a thick layer of mulch and vegetation to filter and infiltrate stormwater runoff. They remove pollutants through filtration, microbial activity and uptake by vegetation. Native plant species should be selected for use in the bioretention basin, reducing fertilizer, pesticide, water, and overall maintenance requirements. Rain gardens should be inspected monthly for signs of erosion or trash accumulation. The Rain gardens should be mulched annually and mowed as necessary. The vegetation should be pruned once a year and any dead vegetation should be removed and replaced annually.

CONCLUSION

The stormwater management plan for the project addresses both water quantity and quality issues, and conforms to the standards outlined in the revised DEP Stormwater Management Policy.

Figures

TOPO! map printed on 06/09/16 from "Northeast.tpo" and "Untitled.tpg"



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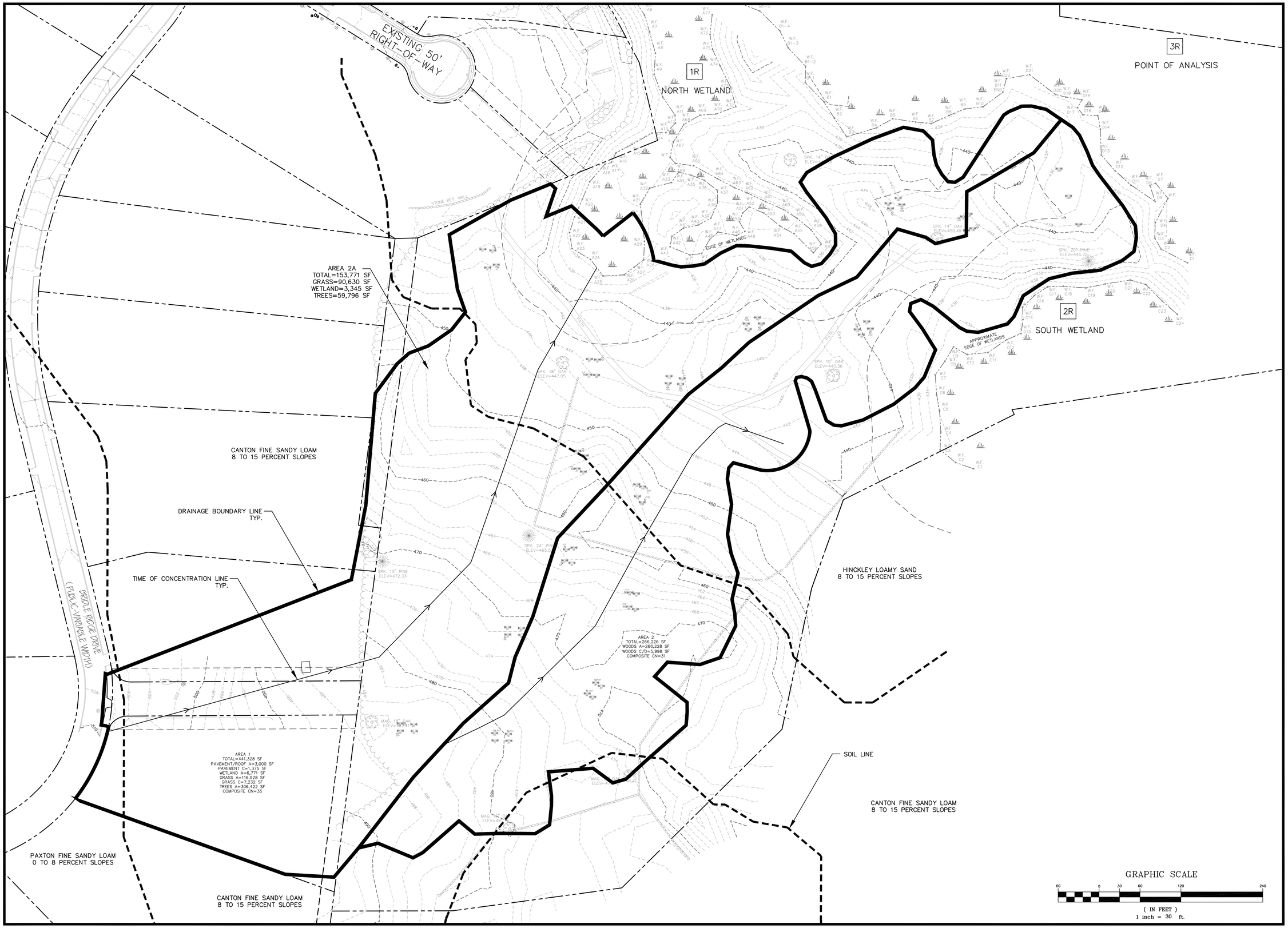
SITE LOCUS MAP

FIGURE 1



NOT FOR CONSTRUCTION

THESE PLANS WERE PREPARED FOR THE PURPOSE OF OBTAINING STATE AND LOCAL PERMITS AND ARE NOT INTENDED TO BE USED AS CONSTRUCTION DOCUMENTS.

No.	Date	Revision

Drawn By: BRM | Designed By: BRM | Checked By:

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Project Name

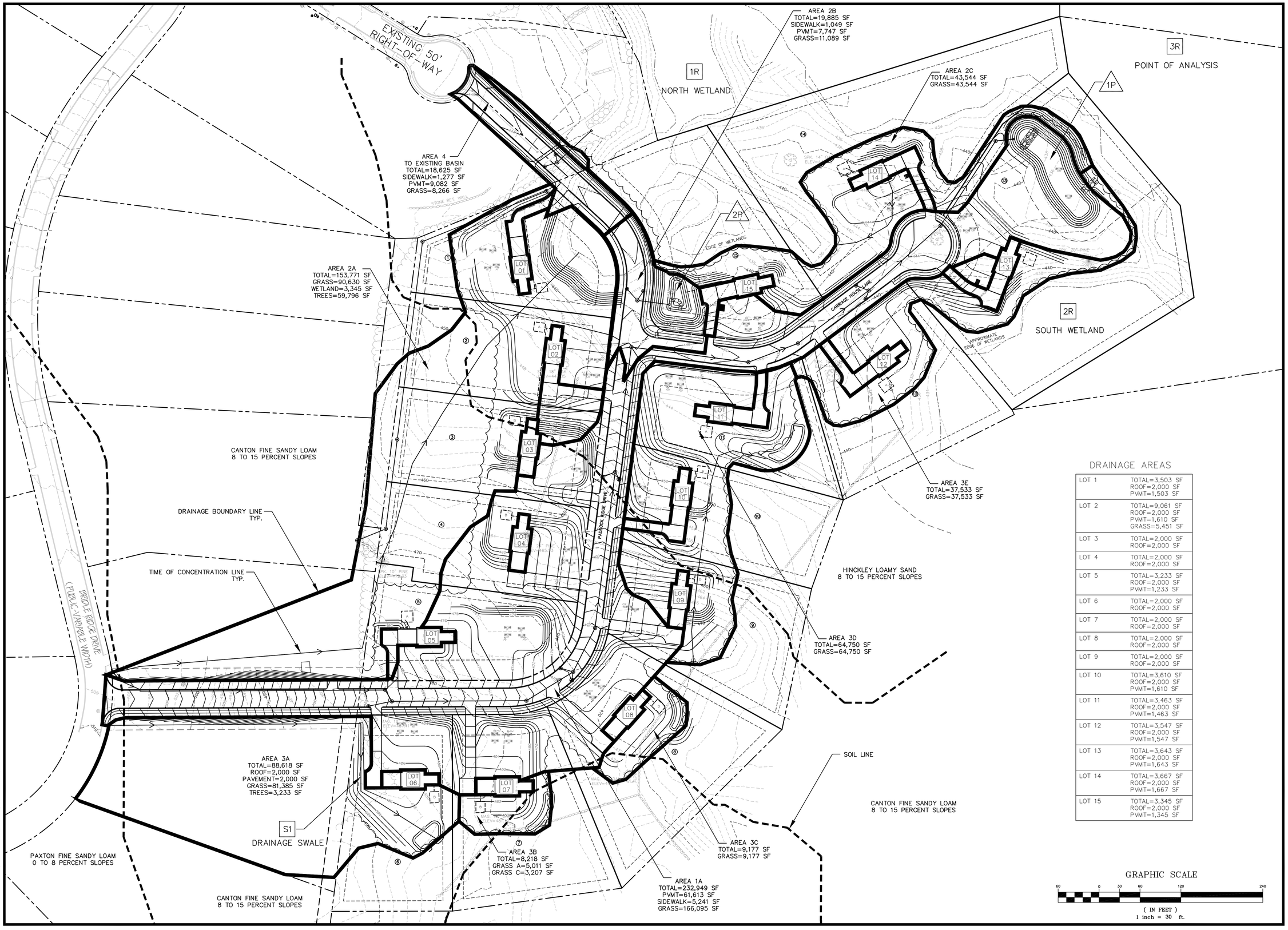
Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title

Existing Conditions
Watershed Plan

Job No: 066
File Name: 066E-Watershed
Date: June 10, 2016
Scale: 1"=60'

Sheet No. 2



DRAINAGE AREAS

LOT 1	TOTAL=3,503 SF ROOF=2,000 SF PVMT=1,503 SF
LOT 2	TOTAL=9,061 SF ROOF=2,000 SF PVMT=1,610 SF GRASS=5,451 SF
LOT 3	TOTAL=2,000 SF ROOF=2,000 SF
LOT 4	TOTAL=2,000 SF ROOF=2,000 SF
LOT 5	TOTAL=3,233 SF ROOF=2,000 SF PVMT=1,233 SF
LOT 6	TOTAL=2,000 SF ROOF=2,000 SF
LOT 7	TOTAL=2,000 SF ROOF=2,000 SF
LOT 8	TOTAL=2,000 SF ROOF=2,000 SF
LOT 9	TOTAL=2,000 SF ROOF=2,000 SF
LOT 10	TOTAL=3,610 SF ROOF=2,000 SF PVMT=1,610 SF
LOT 11	TOTAL=3,463 SF ROOF=2,000 SF PVMT=1,463 SF
LOT 12	TOTAL=3,547 SF ROOF=2,000 SF PVMT=1,547 SF
LOT 13	TOTAL=3,643 SF ROOF=2,000 SF PVMT=1,643 SF
LOT 14	TOTAL=3,667 SF ROOF=2,000 SF PVMT=1,667 SF
LOT 15	TOTAL=3,345 SF ROOF=2,000 SF PVMT=1,345 SF

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 30 ft.

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No.	Date	Revision

Drawn By: BRM
Designed By: BRM
Checked By:

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Project Name

Estates at Bull Meadow
Definitive Plan
N. Grafton, MA 01536

Sheet Title

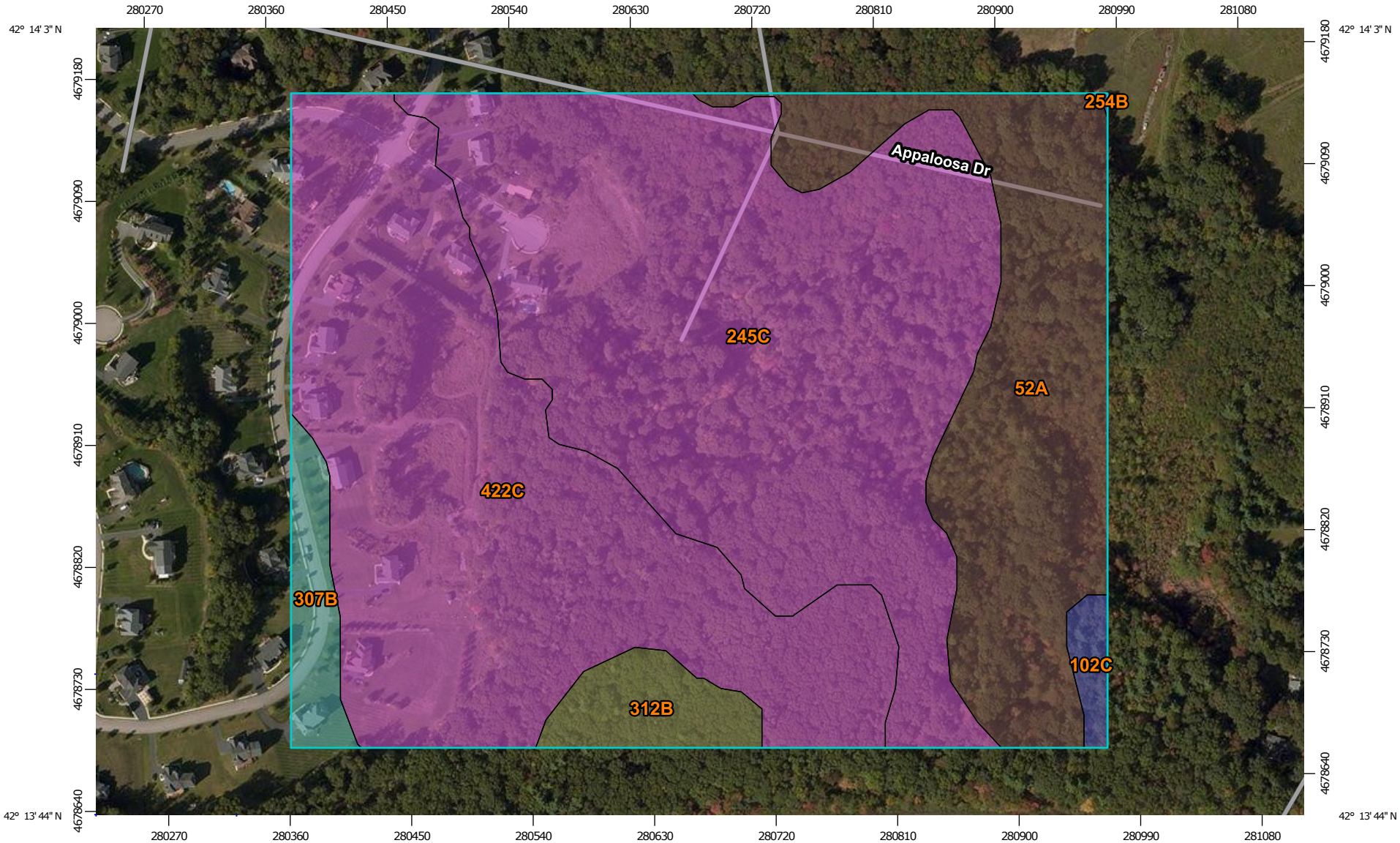
Proposed Conditions Watershed Plan

Job No: 066
Sheet No. 3
File Name: 066P-WATERSHED
Date: June 10, 2016
Scale: 1"=60'

Appendix A

NRCS Soil Survey

Hydrologic Soil Group—Worcester County, Massachusetts, Southern Part
(Bull Meadow LLC. - Grafton MA)



Map Scale: 1:4,090 if printed on A landscape (11" x 8.5") 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 1:25,000.

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: http://websoilsurvey.nrcs.usda.gov
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: Worcester County, Massachusetts, Southern Part
Survey Area Data: Version 8, Sep 28, 2015

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

Date(s) aerial images were photographed: Sep 12, 2014—Sep 28, 2014

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

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Worcester County, Massachusetts, Southern Part (MA615)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
52A	Freetown muck, 0 to 1 percent slopes	B/D	13.4	18.5%
102C	Chatfield-Hollis-Rock outcrop complex, 3 to 15 percent slopes	B	0.7	0.9%
245C	Hinckley loamy sand, 8 to 15 percent slopes	A	29.2	40.3%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	0.0	0.0%
307B	Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony	C	1.9	2.6%
312B	Woodbridge fine sandy loam, 0 to 8 percent slopes, extremely stony	C/D	2.2	3.0%
422C	Canton fine sandy loam, 8 to 15 percent slopes, extremely stony	A	25.1	34.7%
Totals for Area of Interest			**72.5**	**100.0%**

Description

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.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Recharge Calculations

McCarty Engineering, INC. Project: Estates at Bull Meadow
Stormwater Recharge

Date: 6/10/16
Comp: BRM
City: North Grafton Check : PJM
State: MA

Recharge Required

Hydrologic Soil Goup	Volume to Recharge (in)
A	0.6

Required Recharge Volume

Soil group	Impervious Area (ac)	Required Volume (ac-ft)
A	2.651	0.133
	Total	0.133

Recharge Provided

***Total Recharge Provided in Infiltration Basins, Dry Wells and Rain Gardens during the 2-year storm= 0.393 AC-FT**

**All recharge is taking place through the bottom of the infiltration basins. Refer to the Proposed Conditions HydroCAD Model for the Recharge Volume for all storm events.*

Drawdown Analysis

McCarty Engineering, INC.	Project:	Estates at Bull Meadow	Proj. No:	66
Drawdown Analysis			Date:	6/10/16
	City:	North Grafton	Comp:	BRM
	State:	MA	Check :	PJM

Infiltration Basin 1

Storage Volume Below the Outlet = **24,480 CF**
Hydraulic Conductivity for an A Soil = **2.41 in/hr (Rawls Rate)**

Drawdown Time = Storage Volume/(Saturated Hydraulic Conductivity x Bottom Area)

Drawdown Time = 24,480/(2.41in/hr(1ft/12in)(3992 sf))

Dt = 30.5 Hours

McCarty Engineering, INC.	Project:	Estates at Bull Meadow	Proj. No:	
Drawdown Analysis			Date:	6/10/16
	City:	North Grafton	Comp:	BRM
	State:	MA	Check :	PJM

Infiltration Basin 2

Storage Volume Below the Outlet = **1954 CF**
Hydraulic Conductivity for an A Soil = **2.41 in/hr (Rawls Rate)**

Drawdown Time = Storage Volume/(Saturated Hydraulic Conductivity x Bottom Area)

Drawdown Time = 1954/(2.41in/hr(1ft/12in)(360 sf))

Dt = 27 Hours

Water Quality Volume Calculations

Water Quality Volume Calculation Basin 1

Stage-Area-Storage for Pond 1P: Infiltration Basin 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
434.00	3,992	0
434.05	4,045	201
434.10	4,099	405
434.15	4,152	611
434.20	4,206	820
434.25	4,259	1,031
434.30	4,312	1,246
434.35	4,366	1,463
434.40	4,419	1,682
434.45	4,473	1,905
434.50	4,526	2,130
434.55	4,579	2,357
434.60	4,633	2,587
434.65	4,686	2,820
434.70	4,740	3,056
434.75	4,793	3,294
434.80	4,846	3,535
434.85	4,900	3,779
434.90	4,953	4,025
434.95	5,007	4,274
435.00	5,060	4,526
435.05	5,116	4,780
435.10	5,173	5,038
435.15	5,229	5,298
435.20	5,285	5,560
435.25	5,341	5,8
435.30	5,398	6,0
435.35	5,454	6,366
435.40	5,510	6,640
435.45	5,566	6,917
435.50	5,623	7,197
435.55	5,679	7,479
435.60	5,735	7,765
435.65	5,791	8,053
435.70	5,847	8,344
435.75	5,904	8,637
435.80	5,960	8,934
435.85	6,016	9,233
435.90	6,072	9,536
435.95	6,129	9,841
436.00	6,185	10,149
436.05	6,244	10,459
436.10	6,303	10,773
436.15	6,362	11,090
436.20	6,421	11,409
436.25	6,480	11,732
436.30	6,539	12,057
436.35	6,598	12,386
436.40	6,657	12,717
436.45	6,716	13,051
436.50	6,775	13,389
436.55	6,834	13,729
436.60	6,893	14,072
436.65	6,952	14,418
436.70	7,011	14,767
436.75	7,070	15,119
436.80	7,129	15,474
436.85	7,188	15,832
436.90	7,247	16,193
436.95	7,306	16,557
437.00	7,365	16,924
437.05	7,427	17,293
437.10	7,489	17,666
437.15	7,551	18,042
437.20	7,613	18,421
437.25	7,675	18,804
437.30	7,737	19,189
437.35	7,799	19,577
437.40	7,861	19,969
437.45	7,923	20,363
437.50	7,985	20,761
437.55	8,047	21,162
437.60	8,109	21,566
437.65	8,171	21,973
437.70	8,233	22,383
437.75	8,295	22,796
437.80	8,357	23,212
437.85	8,419	23,632
437.90	8,481	24,054
437.95	8,543	24,480
438.00	8,605	24,909
438.05	8,670	25,340
438.10	8,734	25,775
438.15	8,799	26,214
438.20	8,863	26,655
438.25	8,928	27,100
438.30	8,992	27,548
438.35	9,057	27,999
438.40	9,121	28,454
438.45	9,186	28,911
438.50	9,251	29,372
438.55	9,315	29,837
438.60	9,380	30,304
438.65	9,444	30,774
438.70	9,509	31,248
438.75	9,573	31,725
438.80	9,638	32,206
438.85	9,702	32,689
438.90	9,767	33,176
438.95	9,831	33,666
439.00	**9,896**	**34,159**

Outlet Invert =

WQv Provided

WQv Required=0.5in x Area Imp. ac x 1ft/12in x 43,560 sf/ac
WQv Required=0.5in x 1.74 ac x 1ft/12in x 43,560 sf/ac
WQv Required=3,158 cf

24,480 > 3,158 cf OK

Water Quality Volume Calculation Basin 2

Stage-Area-Storage for Pond 2P: Infiltration Basin 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
435.00	360	0
435.05	376	18
435.10	391	38
435.15	406	57
435.20	422	78
435.25	438	100
435.30	453	122
435.35	469	145
435.40	484	169
435.45	499	193
435.50	515	219
435.55	531	245
435.60	546	272
435.65	561	299
435.70	577	328
435.75	593	357
435.80	608	387
435.85	624	418
435.90	639	450
435.95	654	482
436.00	670	515
436.05	689	549
436.10	708	584
436.15	727	620
436.20	746	657
436.25	765	694
436.30	784	733
436.35	803	773
436.40	822	813
436.45	841	855
436.50	860	898
436.55	879	941
436.60	898	985
436.65	917	1,031
436.70	936	1,077
436.75	955	1,124
436.80	974	1,173
436.85	993	1,222
436.90	1,012	1,272
436.95	1,031	1,323
437.00	1,050	1,375
437.05	1,072	1,428
437.10	1,093	1,482
437.15	1,114	1,537
437.20	1,136	1,594
437.25	1,158	1,651
437.30	1,179	1,709
437.35	1,201	1,769
437.40	1,222	1,829
437.45	1,243	1,891
437.50	1,265	1,954
437.55	1,287	2,018
437.60	1,308	2,082
437.65	1,329	2,148
437.70	1,351	2,215
437.75	1,373	2,283
437.80	1,394	2,353
437.85	1,416	2,423
437.90	1,437	2,494
437.95	1,458	2,567
438.00	1,480	2,640
438.05	1,536	2,715
438.10	1,593	2,794
438.15	1,649	2,875
438.20	1,706	2,959
438.25	1,762	3,045
438.30	1,818	3,135
438.35	1,875	3,227
438.40	1,931	3,322
438.45	1,988	3,420
438.50	**2,044**	**3,521**

Outlet Invert =

WQv Required=0.5in x Area Imp. ac x 1ft/12in x 43,560 sf/ac
WQv Required=0.5in x 0.20 ac x 1ft/12in x 43,560 sf/ac
WQv Required=363 cf

1,954 > 363 cf OK

WQv Provided

TSS Removal Worksheets

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Infiltration Basin 1

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	**0.25**	**1.00**	**0.25**	**0.75**
Infiltration Basin	**0.80**	**0.75**	**0.60**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**

Total TSS Removal = **85%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: **Estates at Bull Meadow**
Prepared By: **BRM**
Date: **6/10/2016**

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

Mass. Dept. of Environmental Protection

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Infiltration Basin 2

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	**0.25**	**1.00**	**0.25**	**0.75**
Infiltration Basin	**0.80**	**0.75**	**0.60**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**

Total TSS Removal = **85%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: **Estates at Bull Meadow**
Prepared By: **BRM**
Date: **6/10/2016**

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

Mass. Dept. of Environmental Protection

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Existing Infiltration Basin 2

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	**0.25**	**1.00**	**0.25**	**0.75**
Infiltration Basin	**0.80**	**0.75**	**0.60**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**

Total TSS Removal = **85%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: **Estates at Bull Meadow**
Prepared By: **BRM**
Date: **6/10/2016**

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

Mass. Dept. of Environmental Protection

Operation and Maintenance Plan

Estates at Bull Meadow
Definitive Subdivision
North Grafton, Massachusetts
Operation and Maintenance Plan

The proponent is responsible for the maintenance and operation of the proposed stormwater collection system including deep sump catch basins, sediment forebays, above grade infiltration basins and rain gardens. The following long term Operation and Maintenance Plan for the project is proposed in accordance with DEP Stormwater Management Standard No. 9 to ensure that the stormwater collection and treatment system operates in accordance with the MADEP Stormwater Management Policy.

Schedule for Inspection and Maintenance after Construction:

Deep Sump Catch Basins

- Inlets should be cleaned a minimum of four times per year and inspected monthly.
- All sediments and hydrocarbons should be properly handled and disposed, in accordance with local, state, and federal guidelines and regulations.
- Structures should be inspected and maintained according to the manufacturer's recommendation.

Sediment Forebay

- The forebay will be cleaned four times per year and inspected monthly.
- All sediments and hydrocarbons will be properly handled and disposed of off-site, in accordance with local, state, and federal guidelines and regulations.

At Grade Infiltration Basin

- Once constructed, the basin will be inspected at a minimum after several storm events to confirm drainage system functions, bank stability, and vegetation growth. Problems will be addressed immediately.
- During the first six months of operation, the basin will be inspected immediately after significant storm events and cleaned to remove sediment buildup.
- The outlet structure will be inspected and repaired where sediment appears to have clogged the invert.
- A stake shall be placed at the bottom of the pond with marks at 1" increments to measure the sediment accumulation. Sediment will be removed from ponds at a minimum when accumulation is at 4", but as often as necessary, and at least once every 10 years.

- At least twice during the growing season, the side slopes will be mowed, and accumulated trash and debris removed. Accumulated sediment in forebay will also be removed at this time

Rain Gardens

- Once constructed, the rain garden will be inspected at a minimum after several storm events for the first year and annually thereafter to confirm system functions as designed. Problems will be addressed immediately.

- Rain gardens shall be inspected monthly for trash removal.

- Banks of the raingarden shall ne mowed monthly at a minimum.

- At least once a year, rain gardens shall be mulched, fertilized and pruned and all dead vegetation removed and disposed of.

A site maintenance log will be kept. This log will record the dates when maintenance tasks were completed, the person who completed the task, and any observations of malfunctions in components of the stormwater management system. A sample maintenance log form is attached.

Estates at Bull Meadow
Definitive Subdivision
North Grafton, Massachusetts
Operation and Maintenance Schedule

BMP	**Frequency**	**Date Performed**	**Comments**	**Cleaning/ Repair Needed? Yes/No**	**Date of Cleaning/ Repair**	**Performed By**
Catch Basins	-Monthly Inspections -Quarterly cleaning					
Sediment Forebay	-Monthly Inspections -Quarterly cleaning					
Above Grade Infiltration Basin	-Annual Inspections and after each major storm event. -Banks mowed twice a year. -Cleaning as needed (Min once every 10 years)					
Rain Gardens	-Inspection after each major storm event for the first year -Monthly Cleaning -Monthly Mowing -Annual mulching, fertilizing and pruning -Annual removal of dead vegetation					

Site Maintenance Supervisor:_____ Date:_____

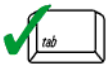
MADEP Stormwater Checklist

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

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[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature

6/10/16

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☒ New development

☐ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☐ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☐ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☐ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☒ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☒ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☒ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☒ Soil Analysis provided.

☒ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☒ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☐ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☒ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☒ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☐ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☐ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☐ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

Pipe Sizing (Culvert) Calculations

McCarty Engineering, Inc.
Culvert Flows

Project: Estates at Bull Meadow
City: North Grafton
State: MA

Proj. No: 66
Date: 6/10/16
Revised:
Comp: BRM
Check : PJM

*Shaded columns indicate input values

	Paved		Unpaved						
Culvert ID	AREA (sq. ft)	C FACTOR	AREA (sq. ft)	C FACTOR	COMPOSITE C	TOTAL AREA (sq. ft)	TOTAL AREA (acres)	Q	Double Grate
1	8420	0.9	5299	0.3	0.67	13719	0.31	1.3	NO
2	9228	0.9	3219	0.3	0.74	12447	0.29	1.3	NO
3	4417	0.9	2405	0.3	0.69	6821	0.16	0.7	NO
4	2875	0.9	8517	0.3	0.45	11391	0.26	0.7	NO
5	9176	0.9	24725	0.3	0.46	33901	0.78	2.2	YES
6	7981	0.9	51067	0.3	0.38	59048	1.36	3.2	YES
7	9959	0.9	24819	0.3	0.47	34778	0.80	2.3	YES
8	4035	0.9	3719	0.3	0.61	7754	0.18	0.7	NO
9	6894	0.9	3388	0.3	0.70	10282	0.24	1.0	NO
10	5912	0.9	4789	0.3	0.63	10702	0.25	1.0	NO
11	6093	0.9	2300	0.3	0.74	8392	0.19	0.9	NO
12	2704	0.9	2645	0.3	0.60	5349	0.12	0.5	NO
13	5640	0.9	2493	0.3	0.72	8133	0.19	0.8	NO
14	4720	0.9	3799	0.3	0.63	8519	0.20	0.8	NO

Pipe Design Worksheet

Project # /Name: Estates at Bull Meadow
Calculated By: BRM **Date:** 6/10/2016 **Revised:**
Checked By: PJM **Date:** 6/10/2016

n= 0.013 **RCP Pipe**

Culvert	Q	Qsum	Length	Slope	Dia.	Full-Flow Velocity[1]	Full-Flow Capacity[2]	
(ID)	(cfs)	(cfs)	(ft.)	(ft./ft.)	(in.)	(fps)	(cfs)	
Detention Basin								
CB 9 to DMH 11	1.00		30	0.01	12	4.55	3.57	O.K
CB 10 to DMH 11	1.00		14.6	0.01	12	4.55	3.57	O.K
DMH 11 to DMH 10		2.00	192.4	0.04	12	9.10	7.14	O.K
DMH 10 to DMH 9	2.00		75.4	0.04	12	9.10	7.14	O.K
CB 8 to DMH 9	0.70		14.2	0.01	12	4.55	3.57	O.K
CB 7 to DMH 9	2.30		7.1	0.01	12	4.55	3.57	O.K
DMH 9 to DMH 8		5.00	66.9	0.025	18	9.42	16.65	O.K
DMH 8 to DMH 7	5.00		225.8	0.025	18	9.42	16.65	O.K
CB 6 to DMH 7	3.20		14.6	0.01	12	4.55	3.57	O.K
CB 5 to DMH 7	2.20		7.1	0.01	12	4.55	3.57	O.K
DMH 7 to DMH 6		10.40	179.5	0.025	18	9.42	16.65	O.K
CB 4 to DMH 6	0.70		12.6	0.01	12	4.55	3.57	O.K
CB 3 to DMH 6	2.20		15.8	0.01	12	4.55	3.57	O.K
DMH 6 to DMH 5		13.30	168.2	0.01	24	7.22	22.68	O.K
DMH 5 to DMH 4	13.30		72.7	0.01	24	7.22	22.68	O.K
DMH 4 to DMH 3	13.30		124.4	0.01	24	7.22	22.68	O.K
CB 2 to DMH 2	1.30		14.1	0.01	12	4.55	3.57	O.K
CB 1 to DMH 2	1.30		3.5	0.01	12	4.55	3.57	O.K
DMH 3 to DMH 2		15.90	136.9	0.01	24	7.22	22.68	O.K
DMH 2 to DMH 1	15.90		143.3	0.01	24	7.22	22.68	O.K
DMH 1 to FES 1	15.90		22.5	0.01	24	7.22	22.68	O.K
CB 12 to DMH 12	0.50		13.8	0.01	12	4.55	3.57	O.K
CB 11 to DMH 12	0.80		5.7	0.01	12	4.55	3.57	O.K
DMH 12 to FES 3		1.30	34.5	0.01	12	4.55	3.57	O.K
CB 14 to DMH 13	0.80		14.4	0.01	12	4.55	3.57	O.K
CB 13 to DMH 13	0.80		6.7	0.01	12	4.55	3.57	O.K
DMH 13 to FES 2		1.60	62	0.01	12	4.55	3.57	O.K
DMH 14 to DMH 15**	15.42		40.2	0.07	18	15.77	27.87	O.K
DMH 15 to DMH 16**	15.42		127.2	0.092	18	18.08	31.95	O.K
DMH 16 to DMH 17**	15.42		287.5	0.046	18	12.78	22.59	O.K

[1] $V=1.49/n \times R^{2/3} \times S^{1/2}$
[2] Q=VA

DMH 17 to DMH 18**	15.42		190.9	0.01	21	6.61	15.89	O.K
DMH 18 to HW 2**	15.42		35.2	0.01	21	6.61	15.89	O.K
2'x3' Culvert	See Drainage Analysis							
5'x10' Culvert	See Drainage Analysis							

** Flows form the 100-year storm event were utilized from HydroCAD to size the headwall outlets.*

***Flows from the 100-year storm event from the "North Grafton Estates II" Stormwater Management Analysis, Dated March 21, 2002 were used as design flows.*

[1] $V=1.49/n \times R^{2/3} \times S^{1/2}$

[2] $Q=VA$

NRCC Cornell Rainfall Data

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	Massachusetts
Location	
Longitude	71.661 degrees West
Latitude	42.234 degrees North
Elevation	Unknown/Unavailable
Date/Time	Tue, 17 May 2016 11:31:33 -0400

Data Utilized in Hydraulic Analysis

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.54	0.70	0.88	1.11	**1yr**	0.76	1.06	1.29	1.63	2.07	2.65	2.89	**1yr**	2.35	2.78	3.20	3.89	4.50	**1yr**
2yr	0.35	0.54	0.67	0.88	1.11	1.40	**2yr**	0.96	1.28	1.62	2.04	2.57	3.23	3.50	**2yr**	2.86	3.37	3.87	4.59	5.23	**2yr**
5yr	0.41	0.64	0.80	1.08	1.38	1.75	**5yr**	1.19	1.59	2.04	2.58	3.24	4.08	4.45	**5yr**	3.61	4.28	4.91	5.77	6.47	**5yr**
10yr	0.46	0.73	0.92	1.25	1.62	2.09	**10yr**	1.40	1.88	2.44	3.09	3.88	4.87	5.34	**10yr**	4.31	5.14	5.87	6.86	7.61	**10yr**
25yr	0.55	0.87	1.11	1.52	2.02	2.62	**25yr**	1.74	2.33	3.07	3.90	4.92	6.16	6.80	**25yr**	5.45	6.54	7.46	8.64	9.44	**25yr**
50yr	0.61	0.98	1.26	1.77	2.39	3.13	**50yr**	2.06	2.76	3.69	4.69	5.89	7.36	8.17	**50yr**	6.51	7.86	8.94	10.28	11.11	**50yr**
100yr	0.70	1.14	1.47	2.07	2.82	3.72	**100yr**	2.44	3.25	4.39	5.60	7.05	8.79	9.82	**100yr**	7.78	9.44	10.72	12.24	13.07	**100yr**
200yr	0.80	1.30	1.69	2.42	3.34	4.44	**200yr**	2.88	3.84	5.25	6.70	8.44	10.51	11.81	**200yr**	9.30	11.35	12.86	14.59	15.40	**200yr**
500yr	0.96	1.57	2.05	2.98	4.17	5.59	**500yr**	3.60	4.79	6.64	8.50	10.71	13.32	15.08	**500yr**	11.79	14.50	16.36	18.39	19.12	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.21	0.33	0.40	0.54	0.67	0.95	**1yr**	0.58	0.93	1.09	1.43	1.87	2.42	2.64	**1yr**	2.14	2.54	2.77	3.52	4.17	**1yr**
2yr	0.34	0.53	0.65	0.88	1.08	1.26	**2yr**	0.93	1.24	1.44	1.90	2.43	3.15	3.39	**2yr**	2.78	3.26	3.76	4.45	5.07	**2yr**
5yr	0.38	0.59	0.73	1.00	1.28	1.51	**5yr**	1.10	1.48	1.72	2.24	2.85	3.76	4.13	**5yr**	3.33	3.97	4.56	5.31	6.02	**5yr**
10yr	0.42	0.65	0.80	1.12	1.45	1.72	**10yr**	1.25	1.68	1.94	2.54	3.22	4.30	4.78	**10yr**	3.81	4.59	5.28	6.06	6.83	**10yr**
25yr	0.49	0.74	0.92	1.31	1.73	2.05	**25yr**	1.49	2.00	2.30	3.01	3.79	5.14	5.79	**25yr**	4.55	5.57	6.42	7.18	8.06	**25yr**
50yr	0.54	0.82	1.02	1.47	1.97	2.33	**50yr**	1.70	2.28	2.62	3.42	4.29	5.87	6.72	**50yr**	5.20	6.47	7.47	8.17	9.17	**50yr**
100yr	0.60	0.91	1.14	1.64	2.25	2.65	**100yr**	1.94	2.59	2.98	3.88	4.87	6.72	7.82	**100yr**	5.95	7.52	8.70	9.31	10.42	**100yr**
200yr	0.66	1.00	1.27	1.83	2.56	3.03	**200yr**	2.21	2.96	3.39	4.43	5.52	7.68	9.09	**200yr**	6.80	8.74	10.14	10.59	11.86	**200yr**
500yr	0.77	1.14	1.47	2.13	3.03	3.62	**500yr**	2.62	3.54	4.02	5.28	6.55	9.19	11.13	**500yr**	8.14	10.71	12.45	12.52	14.10	**500yr**

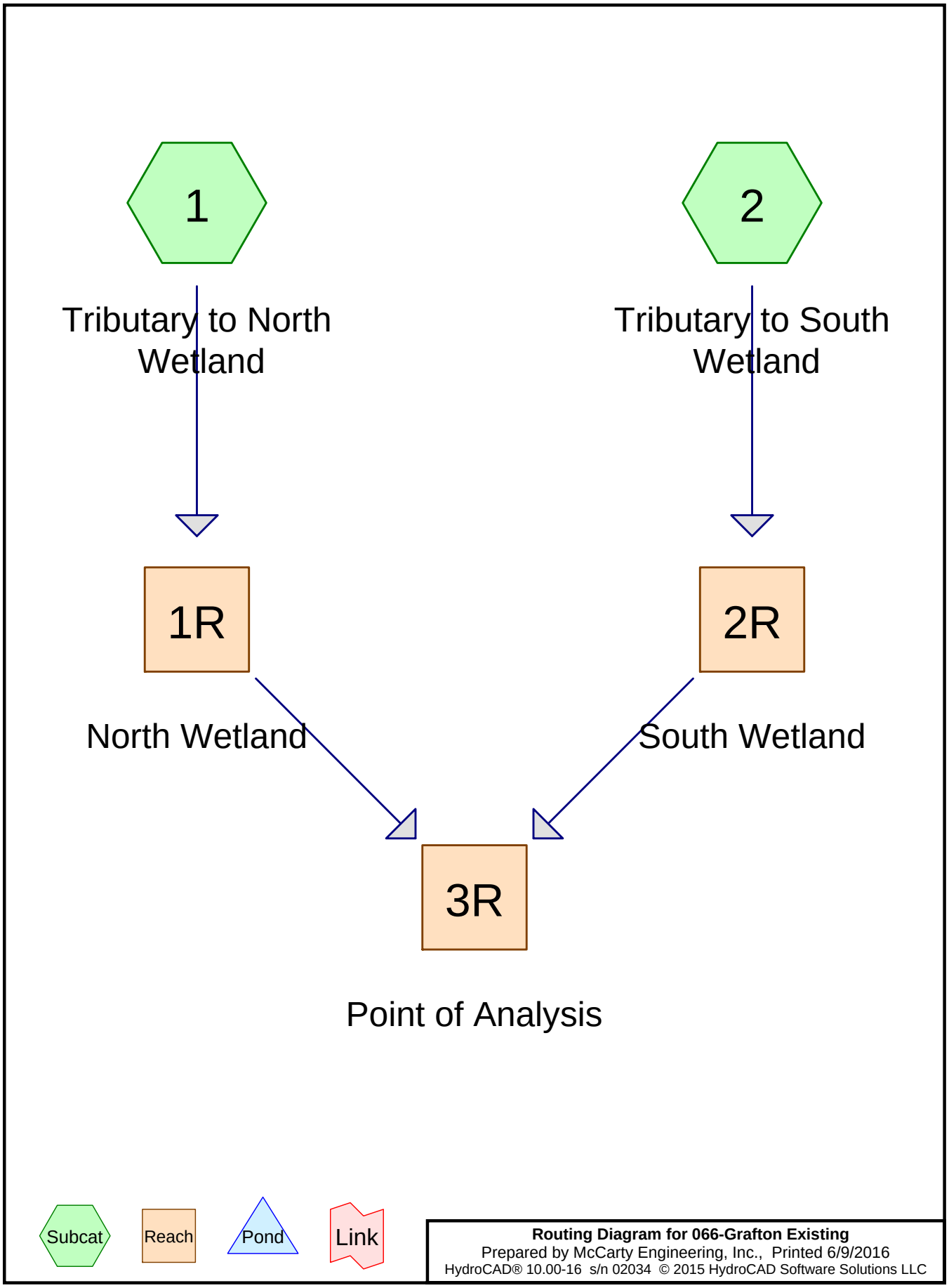
Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.32	0.49	0.59	0.80	0.98	1.19	**1yr**	0.85	1.16	1.37	1.75	2.29	2.92	3.18	**1yr**	2.59	3.06	3.49	4.23	4.82	**1yr**
2yr	0.36	0.56	0.69	0.93	1.15	1.35	**2yr**	0.99	1.32	1.55	2.02	2.58	3.37	3.64	**2yr**	2.98	3.50	4.01	4.77	5.40	**2yr**
5yr	0.44	0.68	0.85	1.17	1.48	1.77	**5yr**	1.28	1.73	2.02	2.59	3.26	4.40	4.80	**5yr**	3.89	4.62	5.28	6.23	6.96	**5yr**
10yr	0.52	0.80	1.00	1.39	1.80	2.16	**10yr**	1.55	2.12	2.48	3.13	3.91	5.40	5.96	**10yr**	4.78	5.73	6.50	7.64	8.46	**10yr**
25yr	0.66	1.00	1.24	1.78	2.34	2.83	**25yr**	2.02	2.77	3.23	4.01	4.97	7.11	7.91	**25yr**	6.29	7.61	8.56	10.03	10.94	**25yr**
50yr	0.78	1.18	1.48	2.12	2.85	3.47	**50yr**	2.46	3.40	3.96	4.84	5.94	8.75	9.80	**50yr**	7.74	9.42	10.54	12.33	13.31	**50yr**
100yr	0.93	1.41	1.76	2.54	3.49	4.26	**100yr**	3.01	4.17	4.86	5.85	7.12	10.76	12.15	**100yr**	9.52	11.69	12.98	15.17	16.18	**100yr**
200yr	1.11	1.67	2.11	3.06	4.27	5.24	**200yr**	3.68	5.12	5.97	7.06	8.53	13.23	15.06	**200yr**	11.71	14.48	15.98	18.68	19.63	**200yr**
500yr	1.41	2.10	2.70	3.93	5.58	6.88	**500yr**	4.82	6.73	7.83	9.07	10.82	17.41	20.00	**500yr**	15.40	19.24	21.02	24.59	25.39	**500yr**

Powered by ACIS
Northeast Regional Climate Center

Appendix B

Existing Conditions HydroCAD Model



Routing Diagram for 066-Grafton Existing
Prepared by McCarty Engineering, Inc., Printed 6/9/2016
HydroCAD® 10.00-16 s/n 02034 © 2015 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.675	39	>75% Grass cover, Good, HSG A (1)
0.166	74	>75% Grass cover, Good, HSG C (1)
0.023	98	Paved parking, HSG A (1)
0.032	98	Paved parking, HSG C (1)
0.046	98	Roofs, HSG A (1)
0.155	98	Wetland (1)
13.008	30	Woods, Good, HSG A (1, 2)
0.138	77	Woods, Good, HSG D (2)
16.243	**33**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
15.752	HSG A	1, 2
0.000	HSG B	
0.198	HSG C	1
0.138	HSG D	2
0.155	Other	1
16.243		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.675	0.000	0.166	0.000	0.000	2.841	>75% Grass cover, Good	1
0.023	0.000	0.032	0.000	0.000	0.055	Paved parking	1
0.046	0.000	0.000	0.000	0.000	0.046	Roofs	1
0.000	0.000	0.000	0.000	0.155	0.155	Wetland	1
13.008	0.000	0.000	0.138	0.000	13.146	Woods, Good	1, 2
15.752	**0.000**	**0.198**	**0.138**	**0.155**	**16.243**	**TOTAL AREA**	

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Tributary to North Runoff Area=441,328 sf 2.53% Impervious Runoff Depth=0.00"
Flow Length=1,038' Tc=13.7 min CN=35 Runoff=0.00 cfs 0.000 af

Subcatchment 2: Tributary to South Runoff Area=266,226 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=732' Tc=12.9 min CN=31 Runoff=0.00 cfs 0.000 af

Reach 1R: North Wetland Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 2R: South Wetland Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 3R: Point of Analysis Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 16.243 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
98.42% Pervious = 15.987 ac 1.58% Impervious = 0.256 ac

Summary for Subcatchment 1: Tributary to North Wetland

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

	Area (sf)	CN	Description
	1,000	98	Paved parking, HSG A
	2,000	98	Roofs, HSG A
	1,375	98	Paved parking, HSG C
	116,528	39	>75% Grass cover, Good, HSG A
	7,232	74	>75% Grass cover, Good, HSG C
*	6,771	98	Wetland
	306,422	30	Woods, Good, HSG A
	441,328	35	Weighted Average
	430,182		97.47% Pervious Area
	11,146		2.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
3.0	338	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	650	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	1,038	Total			

Summary for Subcatchment 2: Tributary to South Wetland

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
260,228	30	Woods, Good, HSG A
5,998	77	Woods, Good, HSG D
266,226	31	Weighted Average
266,226		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
8.6	682	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.9	732	Total			

Summary for Reach 1R: North Wetland

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

Inflow Area =	10.131 ac,	2.53% Impervious,	Inflow Depth =	0.00"	for 2-Year event
Inflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	
Outflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af,	Atten= 0%, Lag= 0.0 min

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

Summary for Reach 2R: South Wetland

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

Inflow Area =	6.112 ac,	0.00% Impervious,	Inflow Depth =	0.00"	for 2-Year event
Inflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	
Outflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af,	Atten= 0%, Lag= 0.0 min

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

Summary for Reach 3R: Point of Analysis

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

Inflow Area =	16.243 ac,	1.58% Impervious,	Inflow Depth =	0.00"	for 2-Year event
Inflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	
Outflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af,	Atten= 0%, Lag= 0.0 min

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

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Tributary to North Runoff Area=441,328 sf 2.53% Impervious Runoff Depth=0.07"
Flow Length=1,038' Tc=13.7 min CN=35 Runoff=0.09 cfs 0.057 af

Subcatchment 2: Tributary to South Runoff Area=266,226 sf 0.00% Impervious Runoff Depth=0.01"
Flow Length=732' Tc=12.9 min CN=31 Runoff=0.01 cfs 0.004 af

Reach 1R: North Wetland Inflow=0.09 cfs 0.057 af
Outflow=0.09 cfs 0.057 af

Reach 2R: South Wetland Inflow=0.01 cfs 0.004 af
Outflow=0.01 cfs 0.004 af

Reach 3R: Point of Analysis Inflow=0.09 cfs 0.061 af
Outflow=0.09 cfs 0.061 af

Total Runoff Area = 16.243 ac Runoff Volume = 0.061 af Average Runoff Depth = 0.05"
98.42% Pervious = 15.987 ac 1.58% Impervious = 0.256 ac

Summary for Subcatchment 1: Tributary to North Wetland

Runoff = 0.09 cfs @ 15.45 hrs, Volume= 0.057 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

	Area (sf)	CN	Description
	1,000	98	Paved parking, HSG A
	2,000	98	Roofs, HSG A
	1,375	98	Paved parking, HSG C
	116,528	39	>75% Grass cover, Good, HSG A
	7,232	74	>75% Grass cover, Good, HSG C
*	6,771	98	Wetland
	306,422	30	Woods, Good, HSG A
	441,328	35	Weighted Average
	430,182		97.47% Pervious Area
	11,146		2.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
3.0	338	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	650	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	1,038	Total			

Summary for Subcatchment 2: Tributary to South Wetland

Runoff = 0.01 cfs @ 23.32 hrs, Volume= 0.004 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
260,228	30	Woods, Good, HSG A
5,998	77	Woods, Good, HSG D
266,226	31	Weighted Average
266,226		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
8.6	682	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.9	732	Total			

Summary for Reach 1R: North Wetland

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

Inflow Area =	10.131 ac,	2.53% Impervious,	Inflow Depth =	0.07"	for 10-Year event
Inflow =	0.09 cfs @	15.45 hrs,	Volume=	0.057 af	
Outflow =	0.09 cfs @	15.45 hrs,	Volume=	0.057 af,	Atten= 0%, Lag= 0.0 min

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

Summary for Reach 2R: South Wetland

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

Inflow Area =	6.112 ac,	0.00% Impervious,	Inflow Depth =	0.01"	for 10-Year event
Inflow =	0.01 cfs @	23.32 hrs, Volume=	0.004 af		
Outflow =	0.01 cfs @	23.32 hrs, Volume=	0.004 af, Atten= 0%, Lag= 0.0 min		

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

Summary for Reach 3R: Point of Analysis

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

Inflow Area =	16.243 ac,	1.58% Impervious,	Inflow Depth =	0.05"	for 10-Year event
Inflow =	0.09 cfs @	15.45 hrs, Volume=	0.061 af		
Outflow =	0.09 cfs @	15.45 hrs, Volume=	0.061 af, Atten= 0%, Lag= 0.0 min		

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

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Tributary to North Runoff Area=441,328 sf 2.53% Impervious Runoff Depth=0.28"
Flow Length=1,038' Tc=13.7 min CN=35 Runoff=0.61 cfs 0.240 af

Subcatchment 2: Tributary to South Runoff Area=266,226 sf 0.00% Impervious Runoff Depth=0.12"
Flow Length=732' Tc=12.9 min CN=31 Runoff=0.10 cfs 0.062 af

Reach 1R: North Wetland Inflow=0.61 cfs 0.240 af
Outflow=0.61 cfs 0.240 af

Reach 2R: South Wetland Inflow=0.10 cfs 0.062 af
Outflow=0.10 cfs 0.062 af

Reach 3R: Point of Analysis Inflow=0.61 cfs 0.302 af
Outflow=0.61 cfs 0.302 af

Total Runoff Area = 16.243 ac Runoff Volume = 0.302 af Average Runoff Depth = 0.22"
98.42% Pervious = 15.987 ac 1.58% Impervious = 0.256 ac

Summary for Subcatchment 1: Tributary to North Wetland

Runoff = 0.61 cfs @ 12.56 hrs, Volume= 0.240 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

	Area (sf)	CN	Description
	1,000	98	Paved parking, HSG A
	2,000	98	Roofs, HSG A
	1,375	98	Paved parking, HSG C
	116,528	39	>75% Grass cover, Good, HSG A
	7,232	74	>75% Grass cover, Good, HSG C
*	6,771	98	Wetland
	306,422	30	Woods, Good, HSG A
	441,328	35	Weighted Average
	430,182		97.47% Pervious Area
	11,146		2.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
3.0	338	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	650	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	1,038	Total			

Summary for Subcatchment 2: Tributary to South Wetland

Runoff = 0.10 cfs @ 15.09 hrs, Volume= 0.062 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
260,228	30	Woods, Good, HSG A
5,998	77	Woods, Good, HSG D
266,226	31	Weighted Average
266,226		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
8.6	682	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.9	732	Total			

Summary for Reach 1R: North Wetland

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

Inflow Area =	10.131 ac,	2.53% Impervious,	Inflow Depth =	0.28"	for 25-Year event
Inflow =	0.61 cfs @	12.56 hrs,	Volume=	0.240 af	
Outflow =	0.61 cfs @	12.56 hrs,	Volume=	0.240 af,	Atten= 0%, Lag= 0.0 min

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

Summary for Reach 2R: South Wetland

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

Inflow Area =	6.112 ac,	0.00% Impervious,	Inflow Depth =	0.12"	for 25-Year event
Inflow =	0.10 cfs @	15.09 hrs, Volume=	0.062 af		
Outflow =	0.10 cfs @	15.09 hrs, Volume=	0.062 af,	Atten= 0%,	Lag= 0.0 min

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

Summary for Reach 3R: Point of Analysis

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

Inflow Area =	16.243 ac,	1.58% Impervious,	Inflow Depth =	0.22"	for 25-Year event
Inflow =	0.61 cfs @	12.56 hrs,	Volume=	0.302 af	
Outflow =	0.61 cfs @	12.56 hrs,	Volume=	0.302 af,	Atten= 0%, Lag= 0.0 min

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

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Tributary to North Runoff Area=441,328 sf 2.53% Impervious Runoff Depth=1.09"
Flow Length=1,038' Tc=13.7 min CN=35 Runoff=5.80 cfs 0.920 af

Subcatchment 2: Tributary to South Runoff Area=266,226 sf 0.00% Impervious Runoff Depth=0.71"
Flow Length=732' Tc=12.9 min CN=31 Runoff=1.70 cfs 0.360 af

Reach 1R: North Wetland Inflow=5.80 cfs 0.920 af
Outflow=5.80 cfs 0.920 af

Reach 2R: South Wetland Inflow=1.70 cfs 0.360 af
Outflow=1.70 cfs 0.360 af

Reach 3R: Point of Analysis Inflow=7.34 cfs 1.280 af
Outflow=7.34 cfs 1.280 af

Total Runoff Area = 16.243 ac Runoff Volume = 1.280 af Average Runoff Depth = 0.95"
98.42% Pervious = 15.987 ac 1.58% Impervious = 0.256 ac

Summary for Subcatchment 1: Tributary to North Wetland

Runoff = 5.80 cfs @ 12.31 hrs, Volume= 0.920 af, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

	Area (sf)	CN	Description
	1,000	98	Paved parking, HSG A
	2,000	98	Roofs, HSG A
	1,375	98	Paved parking, HSG C
	116,528	39	>75% Grass cover, Good, HSG A
	7,232	74	>75% Grass cover, Good, HSG C
*	6,771	98	Wetland
	306,422	30	Woods, Good, HSG A
	441,328	35	Weighted Average
	430,182		97.47% Pervious Area
	11,146		2.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
3.0	338	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	650	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.7	1,038	Total			

Summary for Subcatchment 2: Tributary to South Wetland

Runoff = 1.70 cfs @ 12.43 hrs, Volume= 0.360 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
260,228	30	Woods, Good, HSG A
5,998	77	Woods, Good, HSG D
266,226	31	Weighted Average
266,226		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
8.6	682	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.9	732	Total			

Summary for Reach 1R: North Wetland

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

Inflow Area =	10.131 ac,	2.53% Impervious,	Inflow Depth =	1.09"	for 100-Year event
Inflow =	5.80 cfs @	12.31 hrs,	Volume=	0.920 af	
Outflow =	5.80 cfs @	12.31 hrs,	Volume=	0.920 af,	Atten= 0%, Lag= 0.0 min

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

Summary for Reach 2R: South Wetland

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

Inflow Area =	6.112 ac,	0.00% Impervious,	Inflow Depth =	0.71"	for 100-Year event
Inflow =	1.70 cfs @	12.43 hrs,	Volume=	0.360 af	
Outflow =	1.70 cfs @	12.43 hrs,	Volume=	0.360 af,	Atten= 0%, Lag= 0.0 min

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

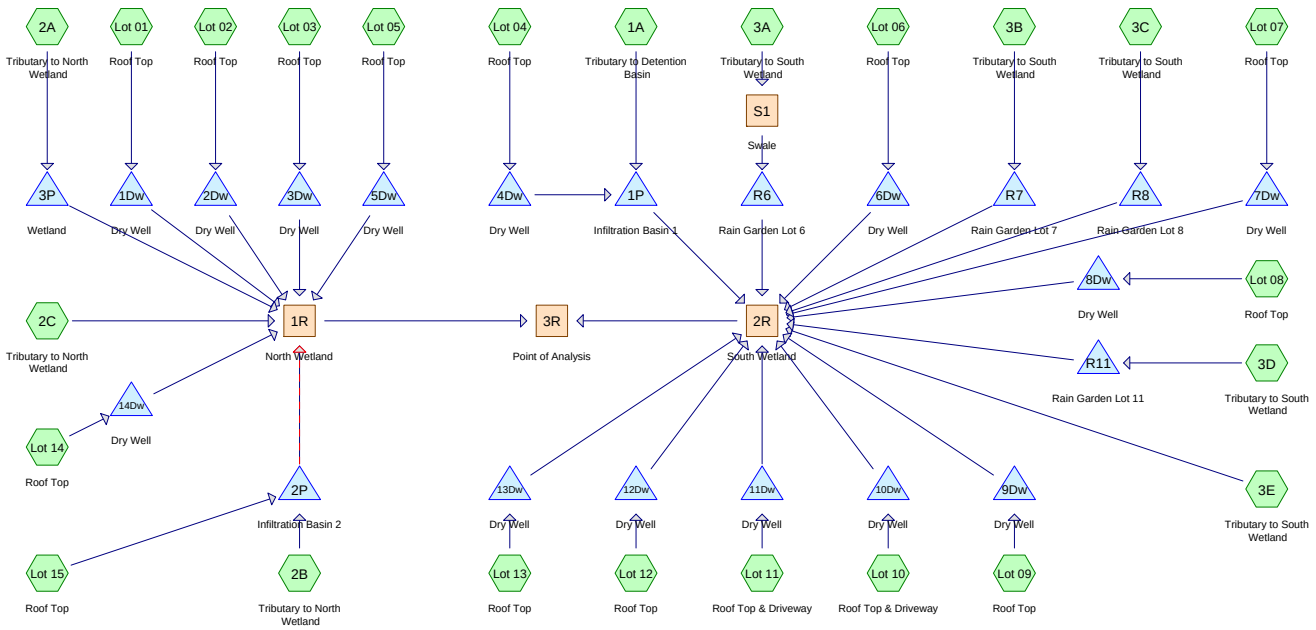
Summary for Reach 3R: Point of Analysis

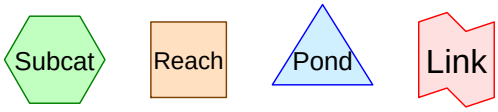
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	16.243 ac,	1.58% Impervious,	Inflow Depth =	0.95"	for 100-Year event
Inflow =	7.34 cfs @	12.37 hrs,	Volume=	1.280 af	
Outflow =	7.34 cfs @	12.37 hrs,	Volume=	1.280 af,	Atten= 0%, Lag= 0.0 min

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

Proposed Conditions HydroCAD Model





Routing Diagram for 066-Grafton Proposed Subdivision
Prepared by McCarty Engineering, Inc., Printed 6/9/2016
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
11.815	39	>75% Grass cover, Good, HSG A (1A, 2A, 2B, 2C, 3A, 3B, 3C, 3D, 3E, Lot 02)
0.074	74	>75% Grass cover, Good, HSG C (3B)
0.144	98	Paved Sidewalk, HSG A (1A, 2B)
0.336	98	Paved parking, HSG A (3A, Lot 01, Lot 02, Lot 05, Lot 10, Lot 11, Lot 12, Lot 13, Lot 14, Lot 15)
0.023	98	Paved parking, HSG C (3A)
1.592	98	Paved roads w/curbs & sewers, HSG A (1A, 2B)
0.735	98	Roofs (3A, Lot 01, Lot 02, Lot 03, Lot 04, Lot 05, Lot 06, Lot 07, Lot 08, Lot 09, Lot 10, Lot 11, Lot 12, Lot 13, Lot 14, Lot 15)
0.077	98	Wetland (2A)
1.447	30	Woods, Good, HSG A (2A, 3A)
16.242	**49**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
15.334	HSG A	1A, 2A, 2B, 2C, 3A, 3B, 3C, 3D, 3E, Lot 01, Lot 02, Lot 05, Lot 10, Lot 11, Lot 12, Lot 13, Lot 14, Lot 15
0.000	HSG B	
0.097	HSG C	3A, 3B
0.000	HSG D	
0.811	Other	2A, 3A, Lot 01, Lot 02, Lot 03, Lot 04, Lot 05, Lot 06, Lot 07, Lot 08, Lot 09, Lot 10, Lot 11, Lot 12, Lot 13, Lot 14, Lot 15
16.242		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
11.815	0.000	0.074	0.000	0.000	11.889	>75% Grass cover, Good	1A, 2A, 2B, 2C, 3A, 3B, 3C, 3D, 3E, Lot 02
0.144	0.000	0.000	0.000	0.000	0.144	Paved Sidewalk	1A, 2B
0.336	0.000	0.023	0.000	0.000	0.359	Paved parking	3A, Lot 01, Lot 02, Lot 05, Lot 10, Lot 11, Lot 12, Lot 13, Lot 14, Lot 15
1.592	0.000	0.000	0.000	0.000	1.592	Paved roads w/curbs & sewers	1A, 2B
0.000	0.000	0.000	0.000	0.735	0.735	Roofs	3A, Lot 01, Lot 02, Lot 03, Lot 04, Lot 05, Lot

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.077	0.077	Wetland	2A
1.447	0.000	0.000	0.000	0.000	1.447	Woods, Good	2A, 3A
15.334	**0.000**	**0.097**	**0.000**	**0.811**	**16.242**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1A	0.00	0.00	296.0	0.0400	0.013	12.0	0.0	0.0
2	1A	0.00	0.00	487.0	0.0250	0.013	18.0	0.0	0.0
3	1A	0.00	0.00	698.0	0.0100	0.013	24.0	0.0	0.0
4	3P	435.00	434.40	60.0	0.0100	0.035	120.0	60.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Tributary to Detention Runoff Area=232,949 sf 28.70% Impervious Runoff Depth=0.29"
Flow Length=1,896' Tc=11.6 min CN=56 Runoff=0.67 cfs 0.129 af

Subcatchment 2A: Tributary to North Runoff Area=153,771 sf 2.18% Impervious Runoff Depth=0.00"
Flow Length=1,053' Tc=19.7 min CN=37 Runoff=0.00 cfs 0.000 af

Subcatchment 2B: Tributary to North Runoff Area=19,885 sf 44.23% Impervious Runoff Depth=0.62"
Tc=5.0 min CN=65 Runoff=0.27 cfs 0.023 af

Subcatchment 2C: Tributary to North Runoff Area=43,544 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=155' Tc=5.3 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 3A: Tributary to South Runoff Area=88,618 sf 4.51% Impervious Runoff Depth=0.01"
Flow Length=502' Tc=11.3 min CN=41 Runoff=0.00 cfs 0.001 af

Subcatchment 3B: Tributary to South Runoff Area=8,218 sf 0.00% Impervious Runoff Depth=0.21"
Tc=5.0 min CN=53 Runoff=0.01 cfs 0.003 af

Subcatchment 3C: Tributary to South Runoff Area=9,177 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 3D: Tributary to South Runoff Area=64,750 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=385' Tc=7.2 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 3E: Tributary to South Runoff Area=37,533 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment Lot 01: Roof Top Runoff Area=3,503 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.020 af

Subcatchment Lot 02: Roof Top Runoff Area=9,061 sf 39.84% Impervious Runoff Depth=0.53"
Tc=5.0 min CN=63 Runoff=0.10 cfs 0.009 af

Subcatchment Lot 03: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.15 cfs 0.011 af

Subcatchment Lot 04: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.15 cfs 0.011 af

Subcatchment Lot 05: Roof Top Runoff Area=3,233 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment Lot 06: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.15 cfs 0.011 af

Subcatchment Lot 07: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.15 cfs 0.011 af

Subcatchment Lot 08: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.15 cfs 0.011 af

Subcatchment Lot 09: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.15 cfs 0.011 af

Subcatchment Lot 10: Roof Top & Runoff Area=3,610 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment Lot 11: Roof Top & Runoff Area=3,463 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.020 af

Subcatchment Lot 12: Roof Top Runoff Area=3,547 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.020 af

Subcatchment Lot 13: Roof Top Runoff Area=3,643 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment Lot 14: Roof Top Runoff Area=3,667 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment Lot 15: Roof Top Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=98 Runoff=0.25 cfs 0.019 af

Reach 1R: North Wetland Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 2R: South Wetland Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 3R: Point of Analysis Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach S1: Swale Avg. Flow Depth=0.01' Max Vel=0.04 fps Inflow=0.00 cfs 0.001 af
n=0.150 L=100.0' S=0.0050 '/' Capacity=17.52 cfs Outflow=0.00 cfs 0.001 af

Pond 1Dw: Dry Well Peak Elev=481.27' Storage=350 cf Inflow=0.26 cfs 0.020 af
Discarded=0.02 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.020 af

Pond 1P: Infiltration Basin 1 Peak Elev=434.18' Storage=747 cf Inflow=0.67 cfs 0.129 af
Discarded=0.25 cfs 0.129 af Primary=0.00 cfs 0.000 af Outflow=0.25 cfs 0.129 af

Pond 2Dw: Dry Well Peak Elev=479.77' Storage=90 cf Inflow=0.10 cfs 0.009 af
Discarded=0.02 cfs 0.009 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.009 af

Pond 2P: Infiltration Basin 2 Peak Elev=436.10' Storage=586 cf Inflow=0.51 cfs 0.043 af
Discarded=0.07 cfs 0.043 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.043 af

Pond 3Dw: Dry Well Peak Elev=481.31' Storage=178 cf Inflow=0.15 cfs 0.011 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af

Pond 3P: Wetland Peak Elev=434.00' Storage=0 cf Inflow=0.00 cfs 0.000 af
120.0" x 60.0" Box Culvert n=0.035 L=60.0' S=0.0100 '/' Outflow=0.00 cfs 0.000 af

Pond 4Dw: Dry Well Peak Elev=481.31' Storage=178 cf Inflow=0.15 cfs 0.011 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af

Pond 5Dw: Dry Well Peak Elev=481.14' Storage=315 cf Inflow=0.24 cfs 0.019 af
Discarded=0.02 cfs 0.019 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.019 af

Pond 6Dw: Dry Well Peak Elev=481.31' Storage=178 cf Inflow=0.15 cfs 0.011 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af

Pond 7Dw: Dry Well Peak Elev=481.31' Storage=178 cf Inflow=0.15 cfs 0.011 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af

Pond 8Dw: Dry Well Peak Elev=481.31' Storage=178 cf Inflow=0.15 cfs 0.011 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af

Pond 9Dw: Dry Well Peak Elev=481.31' Storage=178 cf Inflow=0.15 cfs 0.011 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af

Pond 10Dw: Dry Well Peak Elev=481.32' Storage=364 cf Inflow=0.27 cfs 0.021 af
Discarded=0.02 cfs 0.021 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.021 af

Pond 11Dw: Dry Well Peak Elev=481.25' Storage=345 cf Inflow=0.26 cfs 0.020 af
Discarded=0.02 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.020 af

Pond 12Dw: Dry Well Peak Elev=481.29' Storage=356 cf Inflow=0.26 cfs 0.020 af
Discarded=0.02 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.020 af

Pond 13Dw: Dry Well Peak Elev=481.34' Storage=369 cf Inflow=0.27 cfs 0.021 af
Discarded=0.02 cfs 0.021 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.021 af

Pond 14Dw: Dry Well Peak Elev=481.30' Storage=372 cf Inflow=0.27 cfs 0.021 af
Discarded=0.02 cfs 0.021 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.021 af

Pond R11: Rain Garden Lot 11 Peak Elev=440.00' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond R6: Rain Garden Lot 6 Peak Elev=484.00' Storage=0 cf Inflow=0.00 cfs 0.001 af
Discarded=0.00 cfs 0.001 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.001 af

Pond R7: Rain Garden Lot 7 Peak Elev=475.01' Storage=2 cf Inflow=0.01 cfs 0.003 af
Discarded=0.01 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.003 af

Pond R8: Rain Garden Lot 8 Peak Elev=468.00' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 16.242 ac Runoff Volume = 0.396 af Average Runoff Depth = 0.29"
82.10% Pervious = 13.336 ac 17.90% Impervious = 2.907 ac

Summary for Subcatchment 1A: Tributary to Detention Basin

Runoff = 0.67 cfs @ 12.39 hrs, Volume= 0.129 af, Depth= 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

	Area (sf)	CN	Description
	61,613	98	Paved roads w/curbs & sewers, HSG A
*	5,241	98	Paved Sidewalk, HSG A
	166,095	39	>75% Grass cover, Good, HSG A
	232,949	56	Weighted Average
	166,095		71.30% Pervious Area
	66,854		28.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.1	365	0.0800	5.74		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	296	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.9	487	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
1.6	698	0.0100	7.20	22.62	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Concrete pipe, bends & connections
11.6	1,896	Total			

Summary for Subcatchment 2A: Tributary to North Wetland

[45] Hint: Runoff=Zero

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

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

	Area (sf)	CN	Description
	90,630	39	>75% Grass cover, Good, HSG A
*	3,345	98	Wetland
	59,796	30	Woods, Good, HSG A
	153,771	37	Weighted Average
	150,426		97.82% Pervious Area
	3,345		2.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
2.9	327	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.3	367	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	153	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.5	105	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	51	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.7	1,053	Total			

Summary for Subcatchment 2B: Tributary to North Wetland

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

	Area (sf)	CN	Description
	7,747	98	Paved roads w/curbs & sewers, HSG A
	4,945	39	>75% Grass cover, Good, HSG A
*	1,049	98	Paved Sidewalk, HSG A
	6,144	39	>75% Grass cover, Good, HSG A
	19,885	65	Weighted Average
	11,089		55.77% Pervious Area
	8,796		44.23% Impervious Area

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

Summary for Subcatchment 2C: Tributary to North Wetland

Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
43,544	39	>75% Grass cover, Good, HSG A
43,544		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0600	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.3	55	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	50	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	155	Total			

Summary for Subcatchment 3A: Tributary to South Wetland

Runoff = 0.00 cfs @ 22.51 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
81,385	39	>75% Grass cover, Good, HSG A
3,233	30	Woods, Good, HSG A
2,000	98	Roofs
1,000	98	Paved parking, HSG A
1,000	98	Paved parking, HSG C
88,618	41	Weighted Average
84,618		95.49% Pervious Area
4,000		4.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0600	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
3.1	319	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	133	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	502	Total			

Summary for Subcatchment 3B: Tributary to South Wetland

Runoff = 0.01 cfs @ 12.36 hrs, Volume= 0.003 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
5,011	39	>75% Grass cover, Good, HSG A
3,207	74	>75% Grass cover, Good, HSG C
8,218	53	Weighted Average
8,218		100.00% Pervious Area

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

Summary for Subcatchment 3C: Tributary to South Wetland

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
9,177	39	>75% Grass cover, Good, HSG A
9,177		100.00% Pervious Area

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

Summary for Subcatchment 3D: Tributary to South Wetland

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
64,750	39	>75% Grass cover, Good, HSG A
64,750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.4	190	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	145	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	385	Total			

Summary for Subcatchment 3E: Tributary to South Wetland

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
37,533	39	>75% Grass cover, Good, HSG A
37,533		100.00% Pervious Area

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

Summary for Subcatchment Lot 01: Roof Top

Runoff = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
1,503	98	Paved parking, HSG A
3,503	98	Weighted Average
3,503		100.00% Impervious Area

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

Summary for Subcatchment Lot 02: Roof Top

Runoff = 0.10 cfs @ 12.10 hrs, Volume= 0.009 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
1,610	98	Paved parking, HSG A
5,451	39	>75% Grass cover, Good, HSG A
9,061	63	Weighted Average
5,451		60.16% Pervious Area
3,610		39.84% Impervious Area

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

Summary for Subcatchment Lot 03: Roof Top

Runoff = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 04: Roof Top

Runoff = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 05: Roof Top

Runoff = 0.24 cfs @ 12.07 hrs, Volume= 0.019 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
1,233	98	Paved parking, HSG A
3,233	98	Weighted Average
3,233		100.00% Impervious Area

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

Summary for Subcatchment Lot 06: Roof Top

Runoff = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 07: Roof Top

Runoff = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 08: Roof Top

Runoff = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 09: Roof Top

Runoff = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 10: Roof Top & Driveway

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
1,610	98	Paved parking, HSG A
3,610	98	Weighted Average
3,610		100.00% Impervious Area

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

Summary for Subcatchment Lot 11: Roof Top & Driveway

Runoff = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
1,463	98	Paved parking, HSG A
3,463	98	Weighted Average
3,463		100.00% Impervious Area

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

Summary for Subcatchment Lot 12: Roof Top

Runoff = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
1,547	98	Paved parking, HSG A
3,547	98	Weighted Average
3,547		100.00% Impervious Area

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

Summary for Subcatchment Lot 13: Roof Top

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
1,643	98	Paved parking, HSG A
3,643	98	Weighted Average
3,643		100.00% Impervious Area

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

Summary for Subcatchment Lot 14: Roof Top

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
1,667	98	Paved parking, HSG A
3,667	98	Weighted Average
3,667		100.00% Impervious Area

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

Summary for Subcatchment Lot 15: Roof Top

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.019 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.23"

Area (sf)	CN	Description
2,000	98	Roofs
1,345	98	Paved parking, HSG A
3,345	98	Weighted Average
3,345		100.00% Impervious Area

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

Summary for Reach 1R: North Wetland

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

Inflow Area = 5.556 ac, 13.02% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: South Wetland

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

Inflow Area = 10.687 ac, 20.43% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: Point of Analysis

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

Inflow Area = 16.242 ac, 17.90% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach S1: Swale

Inflow Area = 2.034 ac, 4.51% Impervious, Inflow Depth = 0.01" for 2-Year event
Inflow = 0.00 cfs @ 22.51 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 23.83 hrs, Volume= 0.001 af, Atten= 1%, Lag= 79.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.04 fps, Min. Travel Time= 39.4 min
Avg. Velocity = 0.04 fps, Avg. Travel Time= 39.4 min

Peak Storage= 7 cf @ 23.17 hrs
Average Depth at Peak Storage= 0.01'
Bank-Full Depth= 1.50' Flow Area= 25.5 sf, Capacity= 17.52 cfs

8.00' x 1.50' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 6.0 '/' Top Width= 26.00'
Length= 100.0' Slope= 0.0050 '/'
Inlet Invert= 486.00', Outlet Invert= 485.50'

‡

Summary for Pond 1Dw: Dry Well

Inflow Area = 0.080 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event
Inflow = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af
Outflow = 0.02 cfs @ 13.02 hrs, Volume= 0.020 af, Atten= 92%, Lag= 57.2 min
Discarded = 0.02 cfs @ 13.02 hrs, Volume= 0.020 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 481.27' @ 13.02 hrs Surf.Area= 276 sf Storage= 350 cf

Plug-Flow detention time= 144.9 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 144.9 min (900.2 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.02 hrs HW=481.27' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 1P: Infiltration Basin 1

Inflow Area = 5.394 ac, 29.31% Impervious, Inflow Depth = 0.29" for 2-Year event
Inflow = 0.67 cfs @ 12.39 hrs, Volume= 0.129 af
Outflow = 0.25 cfs @ 13.10 hrs, Volume= 0.129 af, Atten= 62%, Lag= 42.8 min
Discarded = 0.25 cfs @ 13.10 hrs, Volume= 0.129 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 434.18' @ 13.10 hrs Surf.Area= 4,187 sf Storage= 747 cf

Plug-Flow detention time= 27.0 min calculated for 0.129 af (100% of inflow)
Center-of-Mass det. time= 27.0 min (977.7 - 950.6)

Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	34,159 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
434.00	3,992	0	0
435.00	5,060	4,526	4,526
436.00	6,185	5,623	10,149
437.00	7,365	6,775	16,924
438.00	8,605	7,985	24,909
439.00	9,896	9,251	34,159

Device	Routing	Invert	Outlet Devices
#1	Primary	437.95'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	434.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 432.00'

Discarded OutFlow Max=0.25 cfs @ 13.10 hrs HW=434.18' (Free Discharge)
└**2=Exfiltration** (Controls 0.25 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=434.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2Dw: Dry Well

Inflow Area = 0.208 ac, 39.84% Impervious, Inflow Depth = 0.53" for 2-Year event
Inflow = 0.10 cfs @ 12.10 hrs, Volume= 0.009 af
Outflow = 0.02 cfs @ 12.80 hrs, Volume= 0.009 af, Atten= 79%, Lag= 41.8 min
Discarded = 0.02 cfs @ 12.80 hrs, Volume= 0.009 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 479.77' @ 12.80 hrs Surf.Area= 340 sf Storage= 90 cf

Plug-Flow detention time= 39.1 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 39.0 min (941.6 - 902.6)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	422 cf	**ADS_StormTech SC-740** x 9 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	479.50'	1,448 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,870 cf Overall - 422 cf Embedded = 1,448 cf
		1,870 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
479.50	340	0	0
485.00	340	1,870	1,870

Device	Routing	Invert	Outlet Devices
#1	Discarded	479.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 12.80 hrs HW=479.77' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=479.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 2P: Infiltration Basin 2

Inflow Area = 0.533 ac, 52.26% Impervious, Inflow Depth = 0.96" for 2-Year event
Inflow = 0.51 cfs @ 12.08 hrs, Volume= 0.043 af
Outflow = 0.07 cfs @ 12.89 hrs, Volume= 0.043 af, Atten= 86%, Lag= 48.5 min
Discarded = 0.07 cfs @ 12.89 hrs, Volume= 0.043 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 436.10' @ 12.89 hrs Surf.Area= 709 sf Storage= 586 cf

Plug-Flow detention time= 89.3 min calculated for 0.043 af (100% of inflow)
Center-of-Mass det. time= 89.3 min (920.5 - 831.2)

Volume	Invert	Avail.Storage	Storage Description
#1	435.00'	3,521 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
435.00	360	0	0
436.00	670	515	515
437.00	1,050	860	1,375
438.00	1,480	1,265	2,640
438.50	2,044	881	3,521

Device	Routing	Invert	Outlet Devices
#1	Primary	437.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	435.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 434.00'

Discarded OutFlow Max=0.07 cfs @ 12.89 hrs HW=436.10' (Free Discharge)
└**2=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=435.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event
Inflow = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af
Outflow = 0.01 cfs @ 12.81 hrs, Volume= 0.011 af, Atten= 90%, Lag= 44.5 min
Discarded = 0.01 cfs @ 12.81 hrs, Volume= 0.011 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 481.31' @ 12.81 hrs Surf.Area= 220 sf Storage= 178 cf

Plug-Flow detention time= 93.1 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 93.0 min (848.3 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.01 cfs @ 12.81 hrs HW=481.31' (Free Discharge)
└─**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 3P: Wetland

Inflow Area = 3.530 ac, 2.18% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 434.00' @ 0.00 hrs Surf.Area= 3,853 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	58,516 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
434.00	3,853	0	0
436.00	6,072	9,925	9,925
438.00	7,616	13,688	23,613
440.00	8,714	16,330	39,943
442.00	9,859	18,573	58,516

Device	Routing	Invert	Outlet Devices
#1	Primary	435.00'	**120.0" W x 60.0" H Box Culvert** L= 60.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 435.00' / 434.40' S= 0.0100 '/' Cc= 0.900 n= 0.035 Earth, dense weeds, Flow Area= 50.00 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=434.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 4Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event
Inflow = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af
Outflow = 0.01 cfs @ 12.81 hrs, Volume= 0.011 af, Atten= 90%, Lag= 44.5 min
Discarded = 0.01 cfs @ 12.81 hrs, Volume= 0.011 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 481.31' @ 12.81 hrs Surf.Area= 220 sf Storage= 178 cf

Plug-Flow detention time= 93.1 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 93.0 min (848.3 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.01 cfs @ 12.81 hrs HW=481.31' (Free Discharge)
└─**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 5Dw: Dry Well

Inflow Area = 0.074 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event
Inflow = 0.24 cfs @ 12.07 hrs, Volume= 0.019 af
Outflow = 0.02 cfs @ 12.98 hrs, Volume= 0.019 af, Atten= 92%, Lag= 54.3 min
Discarded = 0.02 cfs @ 12.98 hrs, Volume= 0.019 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 481.14' @ 12.98 hrs Surf.Area= 276 sf Storage= 315 cf

Plug-Flow detention time= 130.9 min calculated for 0.019 af (100% of inflow)
Center-of-Mass det. time= 130.9 min (886.1 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 12.98 hrs HW=481.14' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 6Dw: Dry Well

Inflow Area =	0.046 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event				
Inflow =	0.15 cfs @	12.07 hrs,	Volume=	0.011 af	
Outflow =	0.01 cfs @	12.81 hrs,	Volume=	0.011 af,	Atten= 90%, Lag= 44.5 min
Discarded =	0.01 cfs @	12.81 hrs,	Volume=	0.011 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 481.31' @ 12.81 hrs Surf.Area= 220 sf Storage= 178 cf

Plug-Flow detention time= 93.1 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 93.0 min (848.3 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.01 cfs @ 12.81 hrs HW=481.31' (Free Discharge)
└─**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 7Dw: Dry Well

Inflow Area =	0.046 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event				
Inflow =	0.15 cfs @	12.07 hrs,	Volume=	0.011 af	
Outflow =	0.01 cfs @	12.81 hrs,	Volume=	0.011 af,	Atten= 90%, Lag= 44.5 min
Discarded =	0.01 cfs @	12.81 hrs,	Volume=	0.011 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 481.31' @ 12.81 hrs Surf.Area= 220 sf Storage= 178 cf

Plug-Flow detention time= 93.1 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 93.0 min (848.3 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.01 cfs @ 12.81 hrs HW=481.31' (Free Discharge)
└─**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 8Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event
Inflow = 0.15 cfs @ 12.07 hrs, Volume= 0.011 af
Outflow = 0.01 cfs @ 12.81 hrs, Volume= 0.011 af, Atten= 90%, Lag= 44.5 min
Discarded = 0.01 cfs @ 12.81 hrs, Volume= 0.011 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 481.31' @ 12.81 hrs Surf.Area= 220 sf Storage= 178 cf

Plug-Flow detention time= 93.1 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 93.0 min (848.3 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.01 cfs @ 12.81 hrs HW=481.31' (Free Discharge)
└─**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 9Dw: Dry Well

Inflow Area =	0.046 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event				
Inflow =	0.15 cfs @	12.07 hrs,	Volume=	0.011 af	
Outflow =	0.01 cfs @	12.81 hrs,	Volume=	0.011 af,	Atten= 90%, Lag= 44.5 min
Discarded =	0.01 cfs @	12.81 hrs,	Volume=	0.011 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 481.31' @ 12.81 hrs Surf.Area= 220 sf Storage= 178 cf

Plug-Flow detention time= 93.1 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 93.0 min (848.3 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.01 cfs @ 12.81 hrs HW=481.31' (Free Discharge)
└─**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 10Dw: Dry Well

Inflow Area =	0.083 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event				
Inflow =	0.27 cfs @	12.07 hrs,	Volume=	0.021 af	
Outflow =	0.02 cfs @	13.04 hrs,	Volume=	0.021 af,	Atten= 92%, Lag= 58.3 min
Discarded =	0.02 cfs @	13.04 hrs,	Volume=	0.021 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 481.32' @ 13.04 hrs Surf.Area= 276 sf Storage= 364 cf

Plug-Flow detention time= 150.5 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 150.5 min (905.8 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.04 hrs HW=481.32' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 11Dw: Dry Well

Inflow Area = 0.079 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event
Inflow = 0.26 cfs @ 12.07 hrs, Volume= 0.020 af
Outflow = 0.02 cfs @ 13.02 hrs, Volume= 0.020 af, Atten= 92%, Lag= 56.8 min
Discarded = 0.02 cfs @ 13.02 hrs, Volume= 0.020 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 481.25' @ 13.02 hrs Surf.Area= 276 sf Storage= 345 cf

Plug-Flow detention time= 142.8 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 142.8 min (898.1 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.02 hrs HW=481.25' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 12Dw: Dry Well

Inflow Area =	0.081 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event				
Inflow =	0.26 cfs @	12.07 hrs,	Volume=	0.020 af	
Outflow =	0.02 cfs @	13.03 hrs,	Volume=	0.020 af,	Atten= 92%, Lag= 57.7 min
Discarded =	0.02 cfs @	13.03 hrs,	Volume=	0.020 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 481.29' @ 13.03 hrs Surf.Area= 276 sf Storage= 356 cf

Plug-Flow detention time= 147.2 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 147.2 min (902.5 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.03 hrs HW=481.29' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 13Dw: Dry Well

Inflow Area =	0.084 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event				
Inflow =	0.27 cfs @	12.07 hrs,	Volume=	0.021 af	
Outflow =	0.02 cfs @	13.05 hrs,	Volume=	0.021 af,	Atten= 92%, Lag= 58.7 min
Discarded =	0.02 cfs @	13.05 hrs,	Volume=	0.021 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 481.34' @ 13.05 hrs Surf.Area= 276 sf Storage= 369 cf

Plug-Flow detention time= 152.3 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 152.3 min (907.5 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.05 hrs HW=481.34' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 14Dw: Dry Well

Inflow Area = 0.084 ac,100.00% Impervious, Inflow Depth = 3.00" for 2-Year event
Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af
Outflow = 0.02 cfs @ 13.05 hrs, Volume= 0.021 af, Atten= 92%, Lag= 58.7 min
Discarded = 0.02 cfs @ 13.05 hrs, Volume= 0.021 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 481.30' @ 13.05 hrs Surf.Area= 276 sf Storage= 372 cf

Plug-Flow detention time= 153.1 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 153.1 min (908.4 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	479.95'	1,015 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,394 cf Overall - 379 cf Embedded = 1,015 cf
		1,394 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
479.95	276	0	0
485.00	276	1,394	1,394

Device	Routing	Invert	Outlet Devices
#1	Discarded	479.95'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.05 hrs HW=481.30' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=479.95' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond R11: Rain Garden Lot 11

Inflow Area =	1.486 ac,	0.00% Impervious,	Inflow Depth =	0.00"	for 2-Year event
Inflow =	0.00 cfs @	24.01 hrs,	Volume=	0.000 af	
Outflow =	0.00 cfs @	24.03 hrs,	Volume=	0.000 af,	Atten= 1%, Lag= 0.8 min
Discarded =	0.00 cfs @	24.03 hrs,	Volume=	0.000 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 440.00' @ 24.03 hrs Surf.Area= 920 sf Storage= 0 cf

Plug-Flow detention time= 3.0 min calculated for 0.000 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (1,382.6 - 1,379.6)

Volume	Invert	Avail.Storage	Storage Description
#1	440.00'	1,220 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
440.00	920	0	0
441.00	1,520	1,220	1,220

Device	Routing	Invert	Outlet Devices
#1	Discarded	440.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 436.00'
#2	Primary	440.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.05 cfs @ 24.03 hrs HW=440.00' (Free Discharge)
└─**1=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=440.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond R6: Rain Garden Lot 6

Inflow Area = 2.034 ac, 4.51% Impervious, Inflow Depth = 0.01" for 2-Year event
Inflow = 0.00 cfs @ 23.83 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 23.88 hrs, Volume= 0.001 af, Atten= 0%, Lag= 2.9 min
Discarded = 0.00 cfs @ 23.88 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.00' @ 23.88 hrs Surf.Area= 780 sf Storage= 0 cf

Plug-Flow detention time= 3.0 min calculated for 0.001 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (1,335.5 - 1,332.6)

Volume	Invert	Avail.Storage	Storage Description
#1	484.00'	965 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
484.00	780	0	0
485.00	1,150	965	965

Device	Routing	Invert	Outlet Devices
#1	Discarded	484.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 481.00'
#2	Primary	484.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.04 cfs @ 23.88 hrs HW=484.00' (Free Discharge)
└**1=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=484.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond R7: Rain Garden Lot 7

Inflow Area =	0.189 ac,	0.00% Impervious,	Inflow Depth =	0.21"	for 2-Year event
Inflow =	0.01 cfs @	12.36 hrs,	Volume=	0.003 af	
Outflow =	0.01 cfs @	12.41 hrs,	Volume=	0.003 af,	Atten= 3%, Lag= 3.1 min
Discarded =	0.01 cfs @	12.41 hrs,	Volume=	0.003 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 475.01' @ 12.41 hrs Surf.Area= 383 sf Storage= 2 cf

Plug-Flow detention time= 3.0 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (973.7 - 970.8)

Volume	Invert	Avail.Storage	Storage Description
#1	475.00'	590 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
475.00	380	0	0
476.00	800	590	590

Device	Routing	Invert	Outlet Devices
#1	Discarded	475.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 470.00'
#2	Primary	475.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.02 cfs @ 12.41 hrs HW=475.01' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=475.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond R8: Rain Garden Lot 8

Inflow Area =	0.211 ac,	0.00% Impervious,	Inflow Depth =	0.00"	for 2-Year event
Inflow =	0.00 cfs @	24.01 hrs,	Volume=	0.000 af	
Outflow =	0.00 cfs @	24.02 hrs,	Volume=	0.000 af,	Atten= 1%, Lag= 0.6 min
Discarded =	0.00 cfs @	24.02 hrs,	Volume=	0.000 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 468.00' @ 24.02 hrs Surf.Area= 350 sf Storage= 0 cf

Plug-Flow detention time= 3.0 min calculated for 0.000 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (1,380.5 - 1,377.5)

Volume	Invert	Avail.Storage	Storage Description
#1	468.00'	550 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
468.00	350	0	0
469.00	750	550	550

Device	Routing	Invert	Outlet Devices
#1	Discarded	468.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 464.00'
#2	Primary	468.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.02 cfs @ 24.02 hrs HW=468.00' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=468.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Tributary to Detention Runoff Area=232,949 sf 28.70% Impervious Runoff Depth=0.98"
Flow Length=1,896' Tc=11.6 min CN=56 Runoff=4.05 cfs 0.435 af

Subcatchment 2A: Tributary to North Runoff Area=153,771 sf 2.18% Impervious Runoff Depth=0.12"
Flow Length=1,053' Tc=19.7 min CN=37 Runoff=0.05 cfs 0.034 af

Subcatchment 2B: Tributary to North Runoff Area=19,885 sf 44.23% Impervious Runoff Depth=1.57"
Tc=5.0 min CN=65 Runoff=0.82 cfs 0.060 af

Subcatchment 2C: Tributary to North Runoff Area=43,544 sf 0.00% Impervious Runoff Depth=0.17"
Flow Length=155' Tc=5.3 min CN=39 Runoff=0.03 cfs 0.015 af

Subcatchment 3A: Tributary to South Runoff Area=88,618 sf 4.51% Impervious Runoff Depth=0.24"
Flow Length=502' Tc=11.3 min CN=41 Runoff=0.12 cfs 0.041 af

Subcatchment 3B: Tributary to South Runoff Area=8,218 sf 0.00% Impervious Runoff Depth=0.80"
Tc=5.0 min CN=53 Runoff=0.13 cfs 0.013 af

Subcatchment 3C: Tributary to South Runoff Area=9,177 sf 0.00% Impervious Runoff Depth=0.17"
Tc=5.0 min CN=39 Runoff=0.01 cfs 0.003 af

Subcatchment 3D: Tributary to South Runoff Area=64,750 sf 0.00% Impervious Runoff Depth=0.17"
Flow Length=385' Tc=7.2 min CN=39 Runoff=0.04 cfs 0.022 af

Subcatchment 3E: Tributary to South Runoff Area=37,533 sf 0.00% Impervious Runoff Depth=0.17"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.013 af

Subcatchment Lot 01: Roof Top Runoff Area=3,503 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.40 cfs 0.031 af

Subcatchment Lot 02: Roof Top Runoff Area=9,061 sf 39.84% Impervious Runoff Depth=1.43"
Tc=5.0 min CN=63 Runoff=0.33 cfs 0.025 af

Subcatchment Lot 03: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment Lot 04: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment Lot 05: Roof Top Runoff Area=3,233 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.37 cfs 0.029 af

Subcatchment Lot 06: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment Lot 07: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment Lot 08: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment Lot 09: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment Lot 10: Roof Top & Runoff Area=3,610 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af

Subcatchment Lot 11: Roof Top & Runoff Area=3,463 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.39 cfs 0.031 af

Subcatchment Lot 12: Roof Top Runoff Area=3,547 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.40 cfs 0.031 af

Subcatchment Lot 13: Roof Top Runoff Area=3,643 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af

Subcatchment Lot 14: Roof Top Runoff Area=3,667 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.42 cfs 0.033 af

Subcatchment Lot 15: Roof Top Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=98 Runoff=0.38 cfs 0.030 af

Reach 1R: North Wetland Inflow=0.03 cfs 0.015 af
Outflow=0.03 cfs 0.015 af

Reach 2R: South Wetland Inflow=0.02 cfs 0.013 af
Outflow=0.02 cfs 0.013 af

Reach 3R: Point of Analysis Inflow=0.05 cfs 0.027 af
Outflow=0.05 cfs 0.027 af

Reach S1: Swale Avg. Flow Depth=0.08' Max Vel=0.13 fps Inflow=0.12 cfs 0.041 af
n=0.150 L=100.0' S=0.0050 '/' Capacity=17.52 cfs Outflow=0.09 cfs 0.041 af

Pond 1Dw: Dry Well Peak Elev=482.21' Storage=611 cf Inflow=0.40 cfs 0.031 af
Discarded=0.02 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.031 af

Pond 1P: Infiltration Basin 1 Peak Elev=435.49' Storage=7,152 cf Inflow=4.05 cfs 0.435 af
Discarded=0.51 cfs 0.435 af Primary=0.00 cfs 0.000 af Outflow=0.51 cfs 0.435 af

Pond 2Dw: Dry Well Peak Elev=480.85' Storage=457 cf Inflow=0.33 cfs 0.025 af
Discarded=0.03 cfs 0.025 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.025 af

Pond 2P: Infiltration Basin 2 Peak Elev=437.13' Storage=1,518 cf Inflow=1.20 cfs 0.089 af
Discarded=0.13 cfs 0.089 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.089 af

Pond 3Dw: Dry Well Peak Elev=481.92' Storage=312 cf Inflow=0.23 cfs 0.018 af
Discarded=0.02 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.018 af

Pond 3P: Wetland Peak Elev=434.37' Storage=1,486 cf Inflow=0.05 cfs 0.034 af
120.0" x 60.0" Box Culvert n=0.035 L=60.0' S=0.0100 '/' Outflow=0.00 cfs 0.000 af

Pond 4Dw: Dry Well Peak Elev=481.92' Storage=312 cf Inflow=0.23 cfs 0.018 af
Discarded=0.02 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.018 af

Pond 5Dw: Dry Well Peak Elev=481.99' Storage=549 cf Inflow=0.37 cfs 0.029 af
Discarded=0.02 cfs 0.029 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.029 af

Pond 6Dw: Dry Well Peak Elev=481.92' Storage=312 cf Inflow=0.23 cfs 0.018 af
Discarded=0.02 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.018 af

Pond 7Dw: Dry Well Peak Elev=481.92' Storage=312 cf Inflow=0.23 cfs 0.018 af
Discarded=0.02 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.018 af

Pond 8Dw: Dry Well Peak Elev=481.92' Storage=312 cf Inflow=0.23 cfs 0.018 af
Discarded=0.02 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.018 af

Pond 9Dw: Dry Well Peak Elev=481.92' Storage=312 cf Inflow=0.23 cfs 0.018 af
Discarded=0.02 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.018 af

Pond 10Dw: Dry Well Peak Elev=482.30' Storage=636 cf Inflow=0.41 cfs 0.032 af
Discarded=0.02 cfs 0.032 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.032 af

Pond 11Dw: Dry Well Peak Elev=482.18' Storage=602 cf Inflow=0.39 cfs 0.031 af
Discarded=0.02 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.031 af

Pond 12Dw: Dry Well Peak Elev=482.25' Storage=621 cf Inflow=0.40 cfs 0.031 af
Discarded=0.02 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.031 af

Pond 13Dw: Dry Well Peak Elev=482.33' Storage=643 cf Inflow=0.41 cfs 0.032 af
Discarded=0.02 cfs 0.032 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.032 af

Pond 14Dw: Dry Well Peak Elev=482.30' Storage=648 cf Inflow=0.42 cfs 0.033 af
Discarded=0.02 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.033 af

Pond R11: Rain Garden Lot 11 Peak Elev=440.01' Storage=7 cf Inflow=0.04 cfs 0.022 af
Discarded=0.04 cfs 0.022 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.022 af

Pond R6: Rain Garden Lot 6 Peak Elev=484.28' Storage=235 cf Inflow=0.09 cfs 0.041 af
Discarded=0.05 cfs 0.041 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.041 af

Pond R7: Rain Garden Lot 7 Peak Elev=475.27' Storage=118 cf Inflow=0.13 cfs 0.013 af
Discarded=0.03 cfs 0.013 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.013 af

Pond R8: Rain Garden Lot 8 Peak Elev=468.00' Storage=1 cf Inflow=0.01 cfs 0.003 af
Discarded=0.01 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.003 af

Total Runoff Area = 16.242 ac Runoff Volume = 1.013 af Average Runoff Depth = 0.75"
82.10% Pervious = 13.336 ac 17.90% Impervious = 2.907 ac

Summary for Subcatchment 1A: Tributary to Detention Basin

Runoff = 4.05 cfs @ 12.19 hrs, Volume= 0.435 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

	Area (sf)	CN	Description
	61,613	98	Paved roads w/curbs & sewers, HSG A
*	5,241	98	Paved Sidewalk, HSG A
	166,095	39	>75% Grass cover, Good, HSG A
	232,949	56	Weighted Average
	166,095		71.30% Pervious Area
	66,854		28.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.1	365	0.0800	5.74		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	296	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.9	487	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
1.6	698	0.0100	7.20	22.62	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Concrete pipe, bends & connections
11.6	1,896	Total			

Summary for Subcatchment 2A: Tributary to North Wetland

Runoff = 0.05 cfs @ 14.95 hrs, Volume= 0.034 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

	Area (sf)	CN	Description
	90,630	39	>75% Grass cover, Good, HSG A
*	3,345	98	Wetland
	59,796	30	Woods, Good, HSG A
	153,771	37	Weighted Average
	150,426		97.82% Pervious Area
	3,345		2.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
2.9	327	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.3	367	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	153	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.5	105	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	51	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.7	1,053	Total			

Summary for Subcatchment 2B: Tributary to North Wetland

Runoff = 0.82 cfs @ 12.08 hrs, Volume= 0.060 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

	Area (sf)	CN	Description
	7,747	98	Paved roads w/curbs & sewers, HSG A
	4,945	39	>75% Grass cover, Good, HSG A
*	1,049	98	Paved Sidewalk, HSG A
	6,144	39	>75% Grass cover, Good, HSG A
	19,885	65	Weighted Average
	11,089		55.77% Pervious Area
	8,796		44.23% Impervious Area

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

Summary for Subcatchment 2C: Tributary to North Wetland

Runoff = 0.03 cfs @ 12.49 hrs, Volume= 0.015 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
43,544	39	>75% Grass cover, Good, HSG A
43,544		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0600	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.3	55	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	50	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	155	Total			

Summary for Subcatchment 3A: Tributary to South Wetland

Runoff = 0.12 cfs @ 12.51 hrs, Volume= 0.041 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
81,385	39	>75% Grass cover, Good, HSG A
3,233	30	Woods, Good, HSG A
2,000	98	Roofs
1,000	98	Paved parking, HSG A
1,000	98	Paved parking, HSG C
88,618	41	Weighted Average
84,618		95.49% Pervious Area
4,000		4.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0600	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
3.1	319	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	133	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	502	Total			

Summary for Subcatchment 3B: Tributary to South Wetland

Runoff = 0.13 cfs @ 12.10 hrs, Volume= 0.013 af, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
5,011	39	>75% Grass cover, Good, HSG A
3,207	74	>75% Grass cover, Good, HSG C
8,218	53	Weighted Average
8,218		100.00% Pervious Area

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

Summary for Subcatchment 3C: Tributary to South Wetland

Runoff = 0.01 cfs @ 12.49 hrs, Volume= 0.003 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
9,177	39	>75% Grass cover, Good, HSG A
9,177		100.00% Pervious Area

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

Summary for Subcatchment 3D: Tributary to South Wetland

Runoff = 0.04 cfs @ 12.52 hrs, Volume= 0.022 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
64,750	39	>75% Grass cover, Good, HSG A
64,750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.4	190	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	145	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	385	Total			

Summary for Subcatchment 3E: Tributary to South Wetland

Runoff = 0.02 cfs @ 12.49 hrs, Volume= 0.013 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
37,533	39	>75% Grass cover, Good, HSG A
37,533		100.00% Pervious Area

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

Summary for Subcatchment Lot 01: Roof Top

Runoff = 0.40 cfs @ 12.07 hrs, Volume= 0.031 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
1,503	98	Paved parking, HSG A
3,503	98	Weighted Average
3,503		100.00% Impervious Area

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

Summary for Subcatchment Lot 02: Roof Top

Runoff = 0.33 cfs @ 12.08 hrs, Volume= 0.025 af, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
1,610	98	Paved parking, HSG A
5,451	39	>75% Grass cover, Good, HSG A
9,061	63	Weighted Average
5,451		60.16% Pervious Area
3,610		39.84% Impervious Area

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

Summary for Subcatchment Lot 03: Roof Top

Runoff = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 04: Roof Top

Runoff = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 05: Roof Top

Runoff = 0.37 cfs @ 12.07 hrs, Volume= 0.029 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
1,233	98	Paved parking, HSG A
3,233	98	Weighted Average
3,233		100.00% Impervious Area

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

Summary for Subcatchment Lot 06: Roof Top

Runoff = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 07: Roof Top

Runoff = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 08: Roof Top

Runoff = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 09: Roof Top

Runoff = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 10: Roof Top & Driveway

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 0.032 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
1,610	98	Paved parking, HSG A
3,610	98	Weighted Average
3,610		100.00% Impervious Area

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

Summary for Subcatchment Lot 11: Roof Top & Driveway

Runoff = 0.39 cfs @ 12.07 hrs, Volume= 0.031 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
1,463	98	Paved parking, HSG A
3,463	98	Weighted Average
3,463		100.00% Impervious Area

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

Summary for Subcatchment Lot 12: Roof Top

Runoff = 0.40 cfs @ 12.07 hrs, Volume= 0.031 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
1,547	98	Paved parking, HSG A
3,547	98	Weighted Average
3,547		100.00% Impervious Area

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

Summary for Subcatchment Lot 13: Roof Top

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 0.032 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
1,643	98	Paved parking, HSG A
3,643	98	Weighted Average
3,643		100.00% Impervious Area

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

Summary for Subcatchment Lot 14: Roof Top

Runoff = 0.42 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
1,667	98	Paved parking, HSG A
3,667	98	Weighted Average
3,667		100.00% Impervious Area

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

Summary for Subcatchment Lot 15: Roof Top

Runoff = 0.38 cfs @ 12.07 hrs, Volume= 0.030 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.87"

Area (sf)	CN	Description
2,000	98	Roofs
1,345	98	Paved parking, HSG A
3,345	98	Weighted Average
3,345		100.00% Impervious Area

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

Summary for Reach 1R: North Wetland

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

Inflow Area =	5.556 ac,	13.02% Impervious,	Inflow Depth =	0.03"	for 10-Year event
Inflow =	0.03 cfs @	12.49 hrs,	Volume=	0.015 af	
Outflow =	0.03 cfs @	12.49 hrs,	Volume=	0.015 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: South Wetland

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

Inflow Area =	10.687 ac,	20.43% Impervious,	Inflow Depth =	0.01"	for 10-Year event
Inflow =	0.02 cfs @	12.49 hrs, Volume=	0.013 af		
Outflow =	0.02 cfs @	12.49 hrs, Volume=	0.013 af,	Atten= 0%,	Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: Point of Analysis

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

Inflow Area =	16.242 ac, 17.90% Impervious, Inflow Depth = 0.02" for 10-Year event				
Inflow =	0.05 cfs @	12.49 hrs, Volume=	0.027 af		
Outflow =	0.05 cfs @	12.49 hrs, Volume=	0.027 af, Atten= 0%, Lag= 0.0 min		

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach S1: Swale

Inflow Area = 2.034 ac, 4.51% Impervious, Inflow Depth = 0.24" for 10-Year event
Inflow = 0.12 cfs @ 12.51 hrs, Volume= 0.041 af
Outflow = 0.09 cfs @ 12.90 hrs, Volume= 0.041 af, Atten= 23%, Lag= 23.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.13 fps, Min. Travel Time= 12.8 min
Avg. Velocity = 0.08 fps, Avg. Travel Time= 21.4 min

Peak Storage= 72 cf @ 12.69 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 1.50' Flow Area= 25.5 sf, Capacity= 17.52 cfs

8.00' x 1.50' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 6.0 '/' Top Width= 26.00'
Length= 100.0' Slope= 0.0050 '/'
Inlet Invert= 486.00', Outlet Invert= 485.50'

‡

Summary for Pond 1Dw: Dry Well

Inflow Area = 0.080 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.40 cfs @ 12.07 hrs, Volume= 0.031 af
Outflow = 0.02 cfs @ 13.59 hrs, Volume= 0.031 af, Atten= 94%, Lag= 91.1 min
Discarded = 0.02 cfs @ 13.59 hrs, Volume= 0.031 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 482.21' @ 13.59 hrs Surf.Area= 276 sf Storage= 611 cf

Plug-Flow detention time= 236.8 min calculated for 0.031 af (100% of inflow)
Center-of-Mass det. time= 236.8 min (984.3 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.59 hrs HW=482.21' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 1P: Infiltration Basin 1

Inflow Area =	5.394 ac, 29.31% Impervious, Inflow Depth = 0.97" for 10-Year event				
Inflow =	4.05 cfs @	12.19 hrs,	Volume=	0.435 af	
Outflow =	0.51 cfs @	14.43 hrs,	Volume=	0.435 af,	Atten= 88%, Lag= 134.6 min
Discarded =	0.51 cfs @	14.43 hrs,	Volume=	0.435 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 435.49' @ 14.43 hrs Surf.Area= 5,614 sf Storage= 7,152 cf

Plug-Flow detention time= 178.9 min calculated for 0.435 af (100% of inflow)
Center-of-Mass det. time= 178.9 min (1,075.4 - 896.5)

Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	34,159 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
434.00	3,992	0	0
435.00	5,060	4,526	4,526
436.00	6,185	5,623	10,149
437.00	7,365	6,775	16,924
438.00	8,605	7,985	24,909
439.00	9,896	9,251	34,159

Device	Routing	Invert	Outlet Devices
#1	Primary	437.95'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	434.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 432.00'

Discarded OutFlow Max=0.51 cfs @ 14.43 hrs HW=435.49' (Free Discharge)
└**2=Exfiltration** (Controls 0.51 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=434.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2Dw: Dry Well

Inflow Area = 0.208 ac, 39.84% Impervious, Inflow Depth = 1.43" for 10-Year event
Inflow = 0.33 cfs @ 12.08 hrs, Volume= 0.025 af
Outflow = 0.03 cfs @ 14.22 hrs, Volume= 0.025 af, Atten= 92%, Lag= 127.9 min
Discarded = 0.03 cfs @ 14.22 hrs, Volume= 0.025 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 480.85' @ 14.22 hrs Surf.Area= 340 sf Storage= 457 cf

Plug-Flow detention time= 197.9 min calculated for 0.025 af (100% of inflow)
Center-of-Mass det. time= 197.9 min (1,065.2 - 867.3)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	422 cf	**ADS_StormTech SC-740** x 9 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	479.50'	1,448 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,870 cf Overall - 422 cf Embedded = 1,448 cf
		1,870 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
479.50	340	0	0
485.00	340	1,870	1,870

Device	Routing	Invert	Outlet Devices
#1	Discarded	479.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 14.22 hrs HW=480.85' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=479.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 2P: Infiltration Basin 2

Inflow Area =	0.533 ac, 52.26% Impervious, Inflow Depth = 2.01" for 10-Year event				
Inflow =	1.20 cfs @	12.08 hrs,	Volume=	0.089 af	
Outflow =	0.13 cfs @	12.98 hrs,	Volume=	0.089 af,	Atten= 89%, Lag= 54.0 min
Discarded =	0.13 cfs @	12.98 hrs,	Volume=	0.089 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 437.13' @ 12.98 hrs Surf.Area= 1,107 sf Storage= 1,518 cf

Plug-Flow detention time= 143.1 min calculated for 0.089 af (100% of inflow)
Center-of-Mass det. time= 143.0 min (966.8 - 823.7)

Volume	Invert	Avail.Storage	Storage Description
#1	435.00'	3,521 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
435.00	360	0	0
436.00	670	515	515
437.00	1,050	860	1,375
438.00	1,480	1,265	2,640
438.50	2,044	881	3,521

Device	Routing	Invert	Outlet Devices
#1	Primary	437.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	435.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 434.00'

Discarded OutFlow Max=0.13 cfs @ 12.98 hrs HW=437.13' (Free Discharge)
└**2=Exfiltration** (Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=435.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af
Outflow = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af, Atten= 93%, Lag= 63.8 min
Discarded = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 481.92' @ 13.13 hrs Surf.Area= 220 sf Storage= 312 cf

Plug-Flow detention time= 161.5 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 161.4 min (909.0 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.13 hrs HW=481.92' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 3P: Wetland

Inflow Area = 3.530 ac, 2.18% Impervious, Inflow Depth = 0.12" for 10-Year event
Inflow = 0.05 cfs @ 14.95 hrs, Volume= 0.034 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 434.37' @ 25.14 hrs Surf.Area= 4,259 sf Storage= 1,486 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	58,516 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
434.00	3,853	0	0
436.00	6,072	9,925	9,925
438.00	7,616	13,688	23,613
440.00	8,714	16,330	39,943
442.00	9,859	18,573	58,516

Device	Routing	Invert	Outlet Devices
#1	Primary	435.00'	**120.0" W x 60.0" H Box Culvert** L= 60.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 435.00' / 434.40' S= 0.0100 '/' Cc= 0.900 n= 0.035 Earth, dense weeds, Flow Area= 50.00 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=434.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 4Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af
Outflow = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af, Atten= 93%, Lag= 63.8 min
Discarded = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 481.92' @ 13.13 hrs Surf.Area= 220 sf Storage= 312 cf

Plug-Flow detention time= 161.5 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 161.4 min (909.0 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.13 hrs HW=481.92' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 5Dw: Dry Well

Inflow Area = 0.074 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.37 cfs @ 12.07 hrs, Volume= 0.029 af
Outflow = 0.02 cfs @ 13.48 hrs, Volume= 0.029 af, Atten= 94%, Lag= 84.3 min
Discarded = 0.02 cfs @ 13.48 hrs, Volume= 0.029 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 481.99' @ 13.48 hrs Surf.Area= 276 sf Storage= 549 cf

Plug-Flow detention time= 216.4 min calculated for 0.029 af (100% of inflow)
Center-of-Mass det. time= 216.4 min (963.9 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.48 hrs HW=481.99' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 6Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af
Outflow = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af, Atten= 93%, Lag= 63.8 min
Discarded = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 481.92' @ 13.13 hrs Surf.Area= 220 sf Storage= 312 cf

Plug-Flow detention time= 161.5 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 161.4 min (909.0 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.13 hrs HW=481.92' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 7Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af
Outflow = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af, Atten= 93%, Lag= 63.8 min
Discarded = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 481.92' @ 13.13 hrs Surf.Area= 220 sf Storage= 312 cf

Plug-Flow detention time= 161.5 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 161.4 min (909.0 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.13 hrs HW=481.92' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 8Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af
Outflow = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af, Atten= 93%, Lag= 63.8 min
Discarded = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 481.92' @ 13.13 hrs Surf.Area= 220 sf Storage= 312 cf

Plug-Flow detention time= 161.5 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 161.4 min (909.0 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.13 hrs HW=481.92' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 9Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.23 cfs @ 12.07 hrs, Volume= 0.018 af
Outflow = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af, Atten= 93%, Lag= 63.8 min
Discarded = 0.02 cfs @ 13.13 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 481.92' @ 13.13 hrs Surf.Area= 220 sf Storage= 312 cf

Plug-Flow detention time= 161.5 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 161.4 min (909.0 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.13 hrs HW=481.92' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 10Dw: Dry Well

Inflow Area = 0.083 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.41 cfs @ 12.07 hrs, Volume= 0.032 af
Outflow = 0.02 cfs @ 13.63 hrs, Volume= 0.032 af, Atten= 94%, Lag= 93.5 min
Discarded = 0.02 cfs @ 13.63 hrs, Volume= 0.032 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 482.30' @ 13.63 hrs Surf.Area= 276 sf Storage= 636 cf

Plug-Flow detention time= 244.7 min calculated for 0.032 af (100% of inflow)
Center-of-Mass det. time= 244.7 min (992.2 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.63 hrs HW=482.30' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 11Dw: Dry Well

Inflow Area =	0.079 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event				
Inflow =	0.39 cfs @	12.07 hrs,	Volume=	0.031 af	
Outflow =	0.02 cfs @	13.57 hrs,	Volume=	0.031 af,	Atten= 94%, Lag= 90.2 min
Discarded =	0.02 cfs @	13.57 hrs,	Volume=	0.031 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 482.18' @ 13.57 hrs Surf.Area= 276 sf Storage= 602 cf

Plug-Flow detention time= 233.8 min calculated for 0.031 af (100% of inflow)
Center-of-Mass det. time= 233.8 min (981.3 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.57 hrs HW=482.18' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 12Dw: Dry Well

Inflow Area = 0.081 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.40 cfs @ 12.07 hrs, Volume= 0.031 af
Outflow = 0.02 cfs @ 13.61 hrs, Volume= 0.031 af, Atten= 94%, Lag= 92.1 min
Discarded = 0.02 cfs @ 13.61 hrs, Volume= 0.031 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 482.25' @ 13.61 hrs Surf.Area= 276 sf Storage= 621 cf

Plug-Flow detention time= 240.1 min calculated for 0.031 af (100% of inflow)
Center-of-Mass det. time= 240.0 min (987.6 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.61 hrs HW=482.25' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 13Dw: Dry Well

Inflow Area = 0.084 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.41 cfs @ 12.07 hrs, Volume= 0.032 af
Outflow = 0.02 cfs @ 13.64 hrs, Volume= 0.032 af, Atten= 94%, Lag= 94.2 min
Discarded = 0.02 cfs @ 13.64 hrs, Volume= 0.032 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 482.33' @ 13.64 hrs Surf.Area= 276 sf Storage= 643 cf

Plug-Flow detention time= 247.1 min calculated for 0.032 af (100% of inflow)
Center-of-Mass det. time= 247.1 min (994.6 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.64 hrs HW=482.33' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 14Dw: Dry Well

Inflow Area = 0.084 ac,100.00% Impervious, Inflow Depth = 4.63" for 10-Year event
Inflow = 0.42 cfs @ 12.07 hrs, Volume= 0.033 af
Outflow = 0.02 cfs @ 13.64 hrs, Volume= 0.033 af, Atten= 94%, Lag= 94.1 min
Discarded = 0.02 cfs @ 13.64 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 482.30' @ 13.64 hrs Surf.Area= 276 sf Storage= 648 cf

Plug-Flow detention time= 247.8 min calculated for 0.032 af (100% of inflow)
Center-of-Mass det. time= 247.8 min (995.3 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	479.95'	1,015 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,394 cf Overall - 379 cf Embedded = 1,015 cf
		1,394 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
479.95	276	0	0
485.00	276	1,394	1,394

Device	Routing	Invert	Outlet Devices
#1	Discarded	479.95'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.64 hrs HW=482.30' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=479.95' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond R11: Rain Garden Lot 11

Inflow Area =	1.486 ac,	0.00% Impervious,	Inflow Depth =	0.17"	for 10-Year event
Inflow =	0.04 cfs @	12.52 hrs,	Volume=	0.022 af	
Outflow =	0.04 cfs @	13.68 hrs,	Volume=	0.022 af,	Atten= 0%, Lag= 69.7 min
Discarded =	0.04 cfs @	13.68 hrs,	Volume=	0.022 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 440.01' @ 13.68 hrs Surf.Area= 924 sf Storage= 7 cf

Plug-Flow detention time= 3.0 min calculated for 0.022 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (1,024.0 - 1,021.1)

Volume	Invert	Avail.Storage	Storage Description
#1	440.00'	1,220 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
440.00	920	0	0
441.00	1,520	1,220	1,220

Device	Routing	Invert	Outlet Devices
#1	Discarded	440.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 436.00'
#2	Primary	440.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.05 cfs @ 13.68 hrs HW=440.01' (Free Discharge)
└**1=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=440.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond R6: Rain Garden Lot 6

Inflow Area =	2.034 ac,	4.51% Impervious,	Inflow Depth =	0.24"	for 10-Year event
Inflow =	0.09 cfs @	12.90 hrs,	Volume=	0.041 af	
Outflow =	0.05 cfs @	15.96 hrs,	Volume=	0.041 af,	Atten= 43%, Lag= 183.2 min
Discarded =	0.05 cfs @	15.96 hrs,	Volume=	0.041 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.28' @ 15.96 hrs Surf.Area= 884 sf Storage= 235 cf

Plug-Flow detention time= 40.3 min calculated for 0.041 af (100% of inflow)
Center-of-Mass det. time= 40.3 min (1,067.0 - 1,026.7)

Volume	Invert	Avail.Storage	Storage Description
#1	484.00'	965 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
484.00	780	0	0
485.00	1,150	965	965

Device	Routing	Invert	Outlet Devices
#1	Discarded	484.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 481.00'
#2	Primary	484.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.05 cfs @ 15.96 hrs HW=484.28' (Free Discharge)
└**1=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=484.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond R7: Rain Garden Lot 7

Inflow Area =	0.189 ac,	0.00% Impervious,	Inflow Depth =	0.80"	for 10-Year event
Inflow =	0.13 cfs @	12.10 hrs,	Volume=	0.013 af	
Outflow =	0.03 cfs @	12.74 hrs,	Volume=	0.013 af,	Atten= 78%, Lag= 38.7 min
Discarded =	0.03 cfs @	12.74 hrs,	Volume=	0.013 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 475.27' @ 12.74 hrs Surf.Area= 494 sf Storage= 118 cf

Plug-Flow detention time= 32.5 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 32.5 min (935.3 - 902.7)

Volume	Invert	Avail.Storage	Storage Description
#1	475.00'	590 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
475.00	380	0	0
476.00	800	590	590

Device	Routing	Invert	Outlet Devices
#1	Discarded	475.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 470.00'
#2	Primary	475.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.03 cfs @ 12.74 hrs HW=475.27' (Free Discharge)
└**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=475.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond R8: Rain Garden Lot 8

Inflow Area =	0.211 ac,	0.00% Impervious,	Inflow Depth =	0.17"	for 10-Year event
Inflow =	0.01 cfs @	12.49 hrs,	Volume=	0.003 af	
Outflow =	0.01 cfs @	13.65 hrs,	Volume=	0.003 af,	Atten= 4%, Lag= 70.0 min
Discarded =	0.01 cfs @	13.65 hrs,	Volume=	0.003 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 468.00' @ 13.65 hrs Surf.Area= 351 sf Storage= 1 cf

Plug-Flow detention time= 3.0 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (1,022.0 - 1,019.0)

Volume	Invert	Avail.Storage	Storage Description
#1	468.00'	550 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
468.00	350	0	0
469.00	750	550	550

Device	Routing	Invert	Outlet Devices
#1	Discarded	468.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 464.00'
#2	Primary	468.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.02 cfs @ 13.65 hrs HW=468.00' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=468.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Tributary to Detention Runoff Area=232,949 sf 28.70% Impervious Runoff Depth=1.69"
Flow Length=1,896' Tc=11.6 min CN=56 Runoff=7.96 cfs 0.754 af

Subcatchment 2A: Tributary to North Runoff Area=153,771 sf 2.18% Impervious Runoff Depth=0.38"
Flow Length=1,053' Tc=19.7 min CN=37 Runoff=0.38 cfs 0.113 af

Subcatchment 2B: Tributary to North Runoff Area=19,885 sf 44.23% Impervious Runoff Depth=2.47"
Tc=5.0 min CN=65 Runoff=1.34 cfs 0.094 af

Subcatchment 2C: Tributary to North Runoff Area=43,544 sf 0.00% Impervious Runoff Depth=0.49"
Flow Length=155' Tc=5.3 min CN=39 Runoff=0.21 cfs 0.041 af

Subcatchment 3A: Tributary to South Runoff Area=88,618 sf 4.51% Impervious Runoff Depth=0.61"
Flow Length=502' Tc=11.3 min CN=41 Runoff=0.57 cfs 0.103 af

Subcatchment 3B: Tributary to South Runoff Area=8,218 sf 0.00% Impervious Runoff Depth=1.45"
Tc=5.0 min CN=53 Runoff=0.29 cfs 0.023 af

Subcatchment 3C: Tributary to South Runoff Area=9,177 sf 0.00% Impervious Runoff Depth=0.49"
Tc=5.0 min CN=39 Runoff=0.04 cfs 0.009 af

Subcatchment 3D: Tributary to South Runoff Area=64,750 sf 0.00% Impervious Runoff Depth=0.49"
Flow Length=385' Tc=7.2 min CN=39 Runoff=0.30 cfs 0.061 af

Subcatchment 3E: Tributary to South Runoff Area=37,533 sf 0.00% Impervious Runoff Depth=0.49"
Tc=5.0 min CN=39 Runoff=0.18 cfs 0.035 af

Subcatchment Lot 01: Roof Top Runoff Area=3,503 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.50 cfs 0.040 af

Subcatchment Lot 02: Roof Top Runoff Area=9,061 sf 39.84% Impervious Runoff Depth=2.29"
Tc=5.0 min CN=63 Runoff=0.56 cfs 0.040 af

Subcatchment Lot 03: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment Lot 04: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment Lot 05: Roof Top Runoff Area=3,233 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.46 cfs 0.037 af

Subcatchment Lot 06: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment Lot 07: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment Lot 08: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment Lot 09: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment Lot 10: Roof Top & Runoff Area=3,610 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.52 cfs 0.041 af

Subcatchment Lot 11: Roof Top & Runoff Area=3,463 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.50 cfs 0.039 af

Subcatchment Lot 12: Roof Top Runoff Area=3,547 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.51 cfs 0.040 af

Subcatchment Lot 13: Roof Top Runoff Area=3,643 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.52 cfs 0.041 af

Subcatchment Lot 14: Roof Top Runoff Area=3,667 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.53 cfs 0.042 af

Subcatchment Lot 15: Roof Top Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=5.92"
Tc=5.0 min CN=98 Runoff=0.48 cfs 0.038 af

Reach 1R: North Wetland Inflow=0.67 cfs 0.065 af
Outflow=0.67 cfs 0.065 af

Reach 2R: South Wetland Inflow=0.49 cfs 0.076 af
Outflow=0.49 cfs 0.076 af

Reach 3R: Point of Analysis Inflow=0.90 cfs 0.141 af
Outflow=0.90 cfs 0.141 af

Reach S1: Swale Avg. Flow Depth=0.24' Max Vel=0.24 fps Inflow=0.57 cfs 0.103 af
n=0.150 L=100.0' S=0.0050 '/' Capacity=17.52 cfs Outflow=0.54 cfs 0.103 af

Pond 1Dw: Dry Well Peak Elev=483.03' Storage=835 cf Inflow=0.50 cfs 0.040 af
Discarded=0.03 cfs 0.040 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.040 af

Pond 1P: Infiltration Basin 1 Peak Elev=436.68' Storage=14,653 cf Inflow=7.96 cfs 0.754 af
Discarded=0.77 cfs 0.754 af Primary=0.00 cfs 0.000 af Outflow=0.77 cfs 0.754 af

Pond 2Dw: Dry Well Peak Elev=482.03' Storage=860 cf Inflow=0.56 cfs 0.040 af
Discarded=0.03 cfs 0.040 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.040 af

Pond 2P: Infiltration Basin 2 Peak Elev=437.57' Storage=2,047 cf Inflow=1.82 cfs 0.132 af
Discarded=0.16 cfs 0.119 af Primary=0.47 cfs 0.012 af Outflow=0.63 cfs 0.132 af

Pond 3Dw: Dry Well Peak Elev=482.46' Storage=430 cf Inflow=0.29 cfs 0.023 af
Discarded=0.02 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.023 af

Pond 3P: Wetland Peak Elev=435.02' Storage=4,495 cf Inflow=0.38 cfs 0.113 af
120.0" x 60.0" Box Culvert n=0.035 L=60.0' S=0.0100 '/' Outflow=0.05 cfs 0.012 af

Pond 4Dw: Dry Well Peak Elev=482.46' Storage=430 cf Inflow=0.29 cfs 0.023 af
Discarded=0.02 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.023 af

Pond 5Dw: Dry Well Peak Elev=482.73' Storage=752 cf Inflow=0.46 cfs 0.037 af
Discarded=0.03 cfs 0.037 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.037 af

Pond 6Dw: Dry Well Peak Elev=482.46' Storage=430 cf Inflow=0.29 cfs 0.023 af
Discarded=0.02 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.023 af

Pond 7Dw: Dry Well Peak Elev=482.46' Storage=430 cf Inflow=0.29 cfs 0.023 af
Discarded=0.02 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.023 af

Pond 8Dw: Dry Well Peak Elev=482.46' Storage=430 cf Inflow=0.29 cfs 0.023 af
Discarded=0.02 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.023 af

Pond 9Dw: Dry Well Peak Elev=482.46' Storage=430 cf Inflow=0.29 cfs 0.023 af
Discarded=0.02 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.023 af

Pond 10Dw: Dry Well Peak Elev=483.14' Storage=868 cf Inflow=0.52 cfs 0.041 af
Discarded=0.03 cfs 0.041 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.041 af

Pond 11Dw: Dry Well Peak Elev=482.98' Storage=823 cf Inflow=0.50 cfs 0.039 af
Discarded=0.03 cfs 0.039 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.039 af

Pond 12Dw: Dry Well Peak Elev=483.07' Storage=849 cf Inflow=0.51 cfs 0.040 af
Discarded=0.03 cfs 0.040 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.040 af

Pond 13Dw: Dry Well Peak Elev=483.18' Storage=878 cf Inflow=0.52 cfs 0.041 af
Discarded=0.03 cfs 0.041 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.041 af

Pond 14Dw: Dry Well Peak Elev=483.16' Storage=885 cf Inflow=0.53 cfs 0.042 af
Discarded=0.03 cfs 0.042 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.042 af

Pond R11: Rain Garden Lot 11 Peak Elev=440.51' Storage=545 cf Inflow=0.30 cfs 0.061 af
Discarded=0.08 cfs 0.059 af Primary=0.02 cfs 0.002 af Outflow=0.10 cfs 0.061 af

Pond R6: Rain Garden Lot 6 Peak Elev=484.56' Storage=499 cf Inflow=0.54 cfs 0.103 af
Discarded=0.06 cfs 0.066 af Primary=0.38 cfs 0.037 af Outflow=0.45 cfs 0.103 af

Pond R7: Rain Garden Lot 7 Peak Elev=475.52' Storage=255 cf Inflow=0.29 cfs 0.023 af
Discarded=0.04 cfs 0.021 af Primary=0.08 cfs 0.002 af Outflow=0.11 cfs 0.023 af

Pond R8: Rain Garden Lot 8 Peak Elev=468.08' Storage=29 cf Inflow=0.04 cfs 0.009 af
Discarded=0.02 cfs 0.009 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.009 af

Total Runoff Area = 16.242 ac Runoff Volume = 1.726 af Average Runoff Depth = 1.27"
82.10% Pervious = 13.336 ac 17.90% Impervious = 2.907 ac

Summary for Subcatchment 1A: Tributary to Detention Basin

Runoff = 7.96 cfs @ 12.18 hrs, Volume= 0.754 af, Depth= 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

	Area (sf)	CN	Description
	61,613	98	Paved roads w/curbs & sewers, HSG A
*	5,241	98	Paved Sidewalk, HSG A
	166,095	39	>75% Grass cover, Good, HSG A
	232,949	56	Weighted Average
	166,095		71.30% Pervious Area
	66,854		28.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.1	365	0.0800	5.74		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	296	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.9	487	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
1.6	698	0.0100	7.20	22.62	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Concrete pipe, bends & connections
11.6	1,896	Total			

Summary for Subcatchment 2A: Tributary to North Wetland

Runoff = 0.38 cfs @ 12.59 hrs, Volume= 0.113 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

	Area (sf)	CN	Description
	90,630	39	>75% Grass cover, Good, HSG A
*	3,345	98	Wetland
	59,796	30	Woods, Good, HSG A
	153,771	37	Weighted Average
	150,426		97.82% Pervious Area
	3,345		2.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
2.9	327	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.3	367	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	153	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.5	105	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	51	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.7	1,053	Total			

Summary for Subcatchment 2B: Tributary to North Wetland

Runoff = 1.34 cfs @ 12.08 hrs, Volume= 0.094 af, Depth= 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

	Area (sf)	CN	Description
	7,747	98	Paved roads w/curbs & sewers, HSG A
	4,945	39	>75% Grass cover, Good, HSG A
*	1,049	98	Paved Sidewalk, HSG A
	6,144	39	>75% Grass cover, Good, HSG A
	19,885	65	Weighted Average
	11,089		55.77% Pervious Area
	8,796		44.23% Impervious Area

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

Summary for Subcatchment 2C: Tributary to North Wetland

Runoff = 0.21 cfs @ 12.32 hrs, Volume= 0.041 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
43,544	39	>75% Grass cover, Good, HSG A
43,544		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0600	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.3	55	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	50	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	155	Total			

Summary for Subcatchment 3A: Tributary to South Wetland

Runoff = 0.57 cfs @ 12.36 hrs, Volume= 0.103 af, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
81,385	39	>75% Grass cover, Good, HSG A
3,233	30	Woods, Good, HSG A
2,000	98	Roofs
1,000	98	Paved parking, HSG A
1,000	98	Paved parking, HSG C
88,618	41	Weighted Average
84,618		95.49% Pervious Area
4,000		4.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0600	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
3.1	319	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	133	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	502	Total			

Summary for Subcatchment 3B: Tributary to South Wetland

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 0.023 af, Depth= 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
5,011	39	>75% Grass cover, Good, HSG A
3,207	74	>75% Grass cover, Good, HSG C
8,218	53	Weighted Average
8,218		100.00% Pervious Area

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

Summary for Subcatchment 3C: Tributary to South Wetland

Runoff = 0.04 cfs @ 12.31 hrs, Volume= 0.009 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
9,177	39	>75% Grass cover, Good, HSG A
9,177		100.00% Pervious Area

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

Summary for Subcatchment 3D: Tributary to South Wetland

Runoff = 0.30 cfs @ 12.35 hrs, Volume= 0.061 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
64,750	39	>75% Grass cover, Good, HSG A
64,750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.4	190	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	145	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	385	Total			

Summary for Subcatchment 3E: Tributary to South Wetland

Runoff = 0.18 cfs @ 12.31 hrs, Volume= 0.035 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
37,533	39	>75% Grass cover, Good, HSG A
37,533		100.00% Pervious Area

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

Summary for Subcatchment Lot 01: Roof Top

Runoff = 0.50 cfs @ 12.07 hrs, Volume= 0.040 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
1,503	98	Paved parking, HSG A
3,503	98	Weighted Average
3,503		100.00% Impervious Area

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

Summary for Subcatchment Lot 02: Roof Top

Runoff = 0.56 cfs @ 12.08 hrs, Volume= 0.040 af, Depth= 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
1,610	98	Paved parking, HSG A
5,451	39	>75% Grass cover, Good, HSG A
9,061	63	Weighted Average
5,451		60.16% Pervious Area
3,610		39.84% Impervious Area

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

Summary for Subcatchment Lot 03: Roof Top

Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 04: Roof Top

Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 05: Roof Top

Runoff = 0.46 cfs @ 12.07 hrs, Volume= 0.037 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
1,233	98	Paved parking, HSG A
3,233	98	Weighted Average
3,233		100.00% Impervious Area

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

Summary for Subcatchment Lot 06: Roof Top

Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 07: Roof Top

Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 08: Roof Top

Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 09: Roof Top

Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 10: Roof Top & Driveway

Runoff = 0.52 cfs @ 12.07 hrs, Volume= 0.041 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
1,610	98	Paved parking, HSG A
3,610	98	Weighted Average
3,610		100.00% Impervious Area

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

Summary for Subcatchment Lot 11: Roof Top & Driveway

Runoff = 0.50 cfs @ 12.07 hrs, Volume= 0.039 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
1,463	98	Paved parking, HSG A
3,463	98	Weighted Average
3,463		100.00% Impervious Area

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

Summary for Subcatchment Lot 12: Roof Top

Runoff = 0.51 cfs @ 12.07 hrs, Volume= 0.040 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
1,547	98	Paved parking, HSG A
3,547	98	Weighted Average
3,547		100.00% Impervious Area

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

Summary for Subcatchment Lot 13: Roof Top

Runoff = 0.52 cfs @ 12.07 hrs, Volume= 0.041 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
1,643	98	Paved parking, HSG A
3,643	98	Weighted Average
3,643		100.00% Impervious Area

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

Summary for Subcatchment Lot 14: Roof Top

Runoff = 0.53 cfs @ 12.07 hrs, Volume= 0.042 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
1,667	98	Paved parking, HSG A
3,667	98	Weighted Average
3,667		100.00% Impervious Area

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

Summary for Subcatchment Lot 15: Roof Top

Runoff = 0.48 cfs @ 12.07 hrs, Volume= 0.038 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.16"

Area (sf)	CN	Description
2,000	98	Roofs
1,345	98	Paved parking, HSG A
3,345	98	Weighted Average
3,345		100.00% Impervious Area

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

Summary for Reach 1R: North Wetland

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

Inflow Area =	5.556 ac,	13.02% Impervious,	Inflow Depth =	0.14"	for 25-Year event
Inflow =	0.67 cfs @	12.37 hrs,	Volume=	0.065 af	
Outflow =	0.67 cfs @	12.37 hrs,	Volume=	0.065 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: South Wetland

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

Inflow Area =	10.687 ac,	20.43% Impervious,	Inflow Depth =	0.09"	for 25-Year event
Inflow =	0.49 cfs @	12.72 hrs,	Volume=	0.076 af	
Outflow =	0.49 cfs @	12.72 hrs,	Volume=	0.076 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: Point of Analysis

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

Inflow Area = 16.242 ac, 17.90% Impervious, Inflow Depth = 0.10" for 25-Year event
Inflow = 0.90 cfs @ 12.38 hrs, Volume= 0.141 af
Outflow = 0.90 cfs @ 12.38 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach S1: Swale

Inflow Area = 2.034 ac, 4.51% Impervious, Inflow Depth = 0.61" for 25-Year event
Inflow = 0.57 cfs @ 12.36 hrs, Volume= 0.103 af
Outflow = 0.54 cfs @ 12.57 hrs, Volume= 0.103 af, Atten= 6%, Lag= 12.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.24 fps, Min. Travel Time= 6.9 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 16.5 min

Peak Storage= 222 cf @ 12.45 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 1.50' Flow Area= 25.5 sf, Capacity= 17.52 cfs

8.00' x 1.50' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 6.0 '/' Top Width= 26.00'
Length= 100.0' Slope= 0.0050 '/'
Inlet Invert= 486.00', Outlet Invert= 485.50'

‡

Summary for Pond 1Dw: Dry Well

Inflow Area = 0.080 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event
Inflow = 0.50 cfs @ 12.07 hrs, Volume= 0.040 af
Outflow = 0.03 cfs @ 13.86 hrs, Volume= 0.040 af, Atten= 95%, Lag= 107.4 min
Discarded = 0.03 cfs @ 13.86 hrs, Volume= 0.040 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 483.03' @ 13.86 hrs Surf.Area= 276 sf Storage= 835 cf

Plug-Flow detention time= 300.7 min calculated for 0.040 af (100% of inflow)
Center-of-Mass det. time= 300.7 min (1,044.5 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 13.86 hrs HW=483.03' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 1P: Infiltration Basin 1

Inflow Area =	5.394 ac, 29.31% Impervious, Inflow Depth = 1.68" for 25-Year event				
Inflow =	7.96 cfs @	12.18 hrs,	Volume=	0.754 af	
Outflow =	0.77 cfs @	14.63 hrs,	Volume=	0.754 af,	Atten= 90%, Lag= 147.0 min
Discarded =	0.77 cfs @	14.63 hrs,	Volume=	0.754 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 436.68' @ 14.63 hrs Surf.Area= 6,992 sf Storage= 14,653 cf

Plug-Flow detention time= 254.9 min calculated for 0.754 af (100% of inflow)
Center-of-Mass det. time= 254.9 min (1,132.3 - 877.3)

Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	34,159 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
434.00	3,992	0	0
435.00	5,060	4,526	4,526
436.00	6,185	5,623	10,149
437.00	7,365	6,775	16,924
438.00	8,605	7,985	24,909
439.00	9,896	9,251	34,159

Device	Routing	Invert	Outlet Devices
#1	Primary	437.95'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	434.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 432.00'

Discarded OutFlow Max=0.77 cfs @ 14.63 hrs HW=436.68' (Free Discharge)
└**2=Exfiltration** (Controls 0.77 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=434.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2Dw: Dry Well

Inflow Area = 0.208 ac, 39.84% Impervious, Inflow Depth = 2.29" for 25-Year event
Inflow = 0.56 cfs @ 12.08 hrs, Volume= 0.040 af
Outflow = 0.03 cfs @ 14.96 hrs, Volume= 0.040 af, Atten= 94%, Lag= 172.6 min
Discarded = 0.03 cfs @ 14.96 hrs, Volume= 0.040 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 482.03' @ 14.96 hrs Surf.Area= 340 sf Storage= 860 cf

Plug-Flow detention time= 314.2 min calculated for 0.040 af (100% of inflow)
Center-of-Mass det. time= 314.2 min (1,166.8 - 852.7)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	422 cf	**ADS_StormTech SC-740** x 9 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	479.50'	1,448 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,870 cf Overall - 422 cf Embedded = 1,448 cf
		1,870 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
479.50	340	0	0
485.00	340	1,870	1,870

Device	Routing	Invert	Outlet Devices
#1	Discarded	479.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 14.96 hrs HW=482.03' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=479.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 2P: Infiltration Basin 2

Inflow Area =	0.533 ac, 52.26% Impervious, Inflow Depth = 2.97" for 25-Year event				
Inflow =	1.82 cfs @	12.08 hrs,	Volume=	0.132 af	
Outflow =	0.63 cfs @	12.38 hrs,	Volume=	0.132 af,	Atten= 65%, Lag= 18.0 min
Discarded =	0.16 cfs @	12.38 hrs,	Volume=	0.119 af	
Primary =	0.47 cfs @	12.38 hrs,	Volume=	0.012 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 437.57' @ 12.38 hrs Surf.Area= 1,296 sf Storage= 2,047 cf

Plug-Flow detention time= 146.9 min calculated for 0.132 af (100% of inflow)
Center-of-Mass det. time= 146.9 min (964.8 - 817.9)

Volume	Invert	Avail.Storage	Storage Description
#1	435.00'	3,521 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
435.00	360	0	0
436.00	670	515	515
437.00	1,050	860	1,375
438.00	1,480	1,265	2,640
438.50	2,044	881	3,521

Device	Routing	Invert	Outlet Devices
#1	Primary	437.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	435.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 434.00'

Discarded OutFlow Max=0.16 cfs @ 12.38 hrs HW=437.57' (Free Discharge)
└**2=Exfiltration** (Controls 0.16 cfs)

Primary OutFlow Max=0.46 cfs @ 12.38 hrs HW=437.57' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.46 cfs @ 0.63 fps)

Summary for Pond 3Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event
Inflow = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af
Outflow = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af, Atten= 94%, Lag= 88.3 min
Discarded = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 482.46' @ 13.54 hrs Surf.Area= 220 sf Storage= 430 cf

Plug-Flow detention time= 217.0 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 217.0 min (960.8 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.54 hrs HW=482.46' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 3P: Wetland

Inflow Area = 3.530 ac, 2.18% Impervious, Inflow Depth = 0.38" for 25-Year event
Inflow = 0.38 cfs @ 12.59 hrs, Volume= 0.113 af
Outflow = 0.05 cfs @ 23.24 hrs, Volume= 0.012 af, Atten= 86%, Lag= 639.2 min
Primary = 0.05 cfs @ 23.24 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 435.02' @ 23.24 hrs Surf.Area= 4,982 sf Storage= 4,495 cf

Plug-Flow detention time= 653.7 min calculated for 0.012 af (10% of inflow)
Center-of-Mass det. time= 419.7 min (1,405.8 - 986.1)

Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	58,516 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
434.00	3,853	0	0
436.00	6,072	9,925	9,925
438.00	7,616	13,688	23,613
440.00	8,714	16,330	39,943
442.00	9,859	18,573	58,516

Device	Routing	Invert	Outlet Devices
#1	Primary	435.00'	**120.0" W x 60.0" H Box Culvert** L= 60.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 435.00' / 434.40' S= 0.0100 '/' Cc= 0.900 n= 0.035 Earth, dense weeds, Flow Area= 50.00 sf

Primary OutFlow Max=0.03 cfs @ 23.24 hrs HW=435.02' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.03 cfs @ 0.24 fps)

Summary for Pond 4Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event
Inflow = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af
Outflow = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af, Atten= 94%, Lag= 88.3 min
Discarded = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 482.46' @ 13.54 hrs Surf.Area= 220 sf Storage= 430 cf

Plug-Flow detention time= 217.0 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 217.0 min (960.8 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.54 hrs HW=482.46' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 5Dw: Dry Well

Inflow Area = 0.074 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event
Inflow = 0.46 cfs @ 12.07 hrs, Volume= 0.037 af
Outflow = 0.03 cfs @ 13.77 hrs, Volume= 0.037 af, Atten= 94%, Lag= 102.3 min
Discarded = 0.03 cfs @ 13.77 hrs, Volume= 0.037 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 482.73' @ 13.77 hrs Surf.Area= 276 sf Storage= 752 cf

Plug-Flow detention time= 278.0 min calculated for 0.037 af (100% of inflow)
Center-of-Mass det. time= 278.0 min (1,021.8 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 13.77 hrs HW=482.73' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 6Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event
Inflow = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af
Outflow = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af, Atten= 94%, Lag= 88.3 min
Discarded = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 482.46' @ 13.54 hrs Surf.Area= 220 sf Storage= 430 cf

Plug-Flow detention time= 217.0 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 217.0 min (960.8 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.54 hrs HW=482.46' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 7Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event
Inflow = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af
Outflow = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af, Atten= 94%, Lag= 88.3 min
Discarded = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 482.46' @ 13.54 hrs Surf.Area= 220 sf Storage= 430 cf

Plug-Flow detention time= 217.0 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 217.0 min (960.8 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.54 hrs HW=482.46' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 8Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event
Inflow = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af
Outflow = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af, Atten= 94%, Lag= 88.3 min
Discarded = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 482.46' @ 13.54 hrs Surf.Area= 220 sf Storage= 430 cf

Plug-Flow detention time= 217.0 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 217.0 min (960.8 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.54 hrs HW=482.46' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 9Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event
Inflow = 0.29 cfs @ 12.07 hrs, Volume= 0.023 af
Outflow = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af, Atten= 94%, Lag= 88.3 min
Discarded = 0.02 cfs @ 13.54 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 482.46' @ 13.54 hrs Surf.Area= 220 sf Storage= 430 cf

Plug-Flow detention time= 217.0 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 217.0 min (960.8 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.54 hrs HW=482.46' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 10Dw: Dry Well

Inflow Area =	0.083 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event				
Inflow =	0.52 cfs @	12.07 hrs,	Volume=	0.041 af	
Outflow =	0.03 cfs @	13.89 hrs,	Volume=	0.041 af,	Atten= 95%, Lag= 109.1 min
Discarded =	0.03 cfs @	13.89 hrs,	Volume=	0.041 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 483.14' @ 13.89 hrs Surf.Area= 276 sf Storage= 868 cf

Plug-Flow detention time= 309.4 min calculated for 0.041 af (100% of inflow)
Center-of-Mass det. time= 309.4 min (1,053.2 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 13.89 hrs HW=483.14' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 11Dw: Dry Well

Inflow Area = 0.079 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event
Inflow = 0.50 cfs @ 12.07 hrs, Volume= 0.039 af
Outflow = 0.03 cfs @ 13.85 hrs, Volume= 0.039 af, Atten= 95%, Lag= 106.7 min
Discarded = 0.03 cfs @ 13.85 hrs, Volume= 0.039 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 482.98' @ 13.85 hrs Surf.Area= 276 sf Storage= 823 cf

Plug-Flow detention time= 297.4 min calculated for 0.039 af (100% of inflow)
Center-of-Mass det. time= 297.4 min (1,041.2 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 13.85 hrs HW=482.98' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 12Dw: Dry Well

Inflow Area =	0.081 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event				
Inflow =	0.51 cfs @	12.07 hrs,	Volume=	0.040 af	
Outflow =	0.03 cfs @	13.87 hrs,	Volume=	0.040 af,	Atten= 95%, Lag= 108.1 min
Discarded =	0.03 cfs @	13.87 hrs,	Volume=	0.040 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 483.07' @ 13.87 hrs Surf.Area= 276 sf Storage= 849 cf

Plug-Flow detention time= 304.3 min calculated for 0.040 af (100% of inflow)
Center-of-Mass det. time= 304.3 min (1,048.1 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 13.87 hrs HW=483.07' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 13Dw: Dry Well

Inflow Area =	0.084 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event				
Inflow =	0.52 cfs @	12.07 hrs,	Volume=	0.041 af	
Outflow =	0.03 cfs @	13.90 hrs,	Volume=	0.041 af,	Atten= 95%, Lag= 109.7 min
Discarded =	0.03 cfs @	13.90 hrs,	Volume=	0.041 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 483.18' @ 13.90 hrs Surf.Area= 276 sf Storage= 878 cf

Plug-Flow detention time= 312.0 min calculated for 0.041 af (100% of inflow)
Center-of-Mass det. time= 312.0 min (1,055.9 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 13.90 hrs HW=483.18' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 14Dw: Dry Well

Inflow Area = 0.084 ac,100.00% Impervious, Inflow Depth = 5.92" for 25-Year event
Inflow = 0.53 cfs @ 12.07 hrs, Volume= 0.042 af
Outflow = 0.03 cfs @ 13.89 hrs, Volume= 0.042 af, Atten= 95%, Lag= 109.4 min
Discarded = 0.03 cfs @ 13.89 hrs, Volume= 0.042 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 483.16' @ 13.89 hrs Surf.Area= 276 sf Storage= 885 cf

Plug-Flow detention time= 312.3 min calculated for 0.042 af (100% of inflow)
Center-of-Mass det. time= 312.3 min (1,056.1 - 743.8)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	479.95'	1,015 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,394 cf Overall - 379 cf Embedded = 1,015 cf
		1,394 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
479.95	276	0	0
485.00	276	1,394	1,394

Device	Routing	Invert	Outlet Devices
#1	Discarded	479.95'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 13.89 hrs HW=483.16' (Free Discharge)
└**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=479.95' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond R11: Rain Garden Lot 11

Inflow Area =	1.486 ac,	0.00% Impervious,	Inflow Depth =	0.49"	for 25-Year event
Inflow =	0.30 cfs @	12.35 hrs,	Volume=	0.061 af	
Outflow =	0.10 cfs @	13.98 hrs,	Volume=	0.061 af,	Atten= 69%, Lag= 97.9 min
Discarded =	0.08 cfs @	13.98 hrs,	Volume=	0.059 af	
Primary =	0.02 cfs @	13.98 hrs,	Volume=	0.002 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 440.51' @ 13.98 hrs Surf.Area= 1,225 sf Storage= 545 cf

Plug-Flow detention time= 77.2 min calculated for 0.061 af (100% of inflow)
Center-of-Mass det. time= 77.2 min (1,032.2 - 955.0)

Volume	Invert	Avail.Storage	Storage Description
#1	440.00'	1,220 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
440.00	920	0	0
441.00	1,520	1,220	1,220

Device	Routing	Invert	Outlet Devices
#1	Discarded	440.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 436.00'
#2	Primary	440.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.08 cfs @ 13.98 hrs HW=440.51' (Free Discharge)
└**1=Exfiltration** (Controls 0.08 cfs)

Primary OutFlow Max=0.02 cfs @ 13.98 hrs HW=440.51' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.21 fps)

Summary for Pond R6: Rain Garden Lot 6

Inflow Area =	2.034 ac,	4.51% Impervious,	Inflow Depth =	0.61"	for 25-Year event
Inflow =	0.54 cfs @	12.57 hrs,	Volume=	0.103 af	
Outflow =	0.45 cfs @	12.72 hrs,	Volume=	0.103 af,	Atten= 17%, Lag= 9.3 min
Discarded =	0.06 cfs @	12.72 hrs,	Volume=	0.066 af	
Primary =	0.38 cfs @	12.72 hrs,	Volume=	0.037 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.56' @ 12.72 hrs Surf.Area= 989 sf Storage= 499 cf

Plug-Flow detention time= 66.6 min calculated for 0.103 af (100% of inflow)
Center-of-Mass det. time= 66.6 min (1,028.3 - 961.8)

Volume	Invert	Avail.Storage	Storage Description
#1	484.00'	965 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
484.00	780	0	0
485.00	1,150	965	965

Device	Routing	Invert	Outlet Devices
#1	Discarded	484.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 481.00'
#2	Primary	484.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.06 cfs @ 12.72 hrs HW=484.56' (Free Discharge)
└**1=Exfiltration** (Controls 0.06 cfs)

Primary OutFlow Max=0.38 cfs @ 12.72 hrs HW=484.56' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.38 cfs @ 0.59 fps)

Summary for Pond R7: Rain Garden Lot 7

Inflow Area =	0.189 ac,	0.00% Impervious,	Inflow Depth =	1.45"	for 25-Year event
Inflow =	0.29 cfs @	12.09 hrs,	Volume=	0.023 af	
Outflow =	0.11 cfs @	12.42 hrs,	Volume=	0.023 af,	Atten= 61%, Lag= 20.2 min
Discarded =	0.04 cfs @	12.42 hrs,	Volume=	0.021 af	
Primary =	0.08 cfs @	12.42 hrs,	Volume=	0.002 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 475.52' @ 12.42 hrs Surf.Area= 599 sf Storage= 255 cf

Plug-Flow detention time= 64.3 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 64.3 min (944.8 - 880.5)

Volume	Invert	Avail.Storage	Storage Description
#1	475.00'	590 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
475.00	380	0	0
476.00	800	590	590

Device	Routing	Invert	Outlet Devices
#1	Discarded	475.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 470.00'
#2	Primary	475.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.04 cfs @ 12.42 hrs HW=475.52' (Free Discharge)
└**1=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=0.07 cfs @ 12.42 hrs HW=475.52' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 0.34 fps)

Summary for Pond R8: Rain Garden Lot 8

Inflow Area =	0.211 ac,	0.00% Impervious,	Inflow Depth =	0.49"	for 25-Year event
Inflow =	0.04 cfs @	12.31 hrs,	Volume=	0.009 af	
Outflow =	0.02 cfs @	12.61 hrs,	Volume=	0.009 af,	Atten= 50%, Lag= 18.2 min
Discarded =	0.02 cfs @	12.61 hrs,	Volume=	0.009 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 468.08' @ 12.61 hrs Surf.Area= 382 sf Storage= 29 cf

Plug-Flow detention time= 7.7 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 7.7 min (960.7 - 953.0)

Volume	Invert	Avail.Storage	Storage Description
#1	468.00'	550 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
468.00	350	0	0
469.00	750	550	550

Device	Routing	Invert	Outlet Devices
#1	Discarded	468.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 464.00'
#2	Primary	468.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.02 cfs @ 12.61 hrs HW=468.08' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=468.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1A: Tributary to Detention Runoff Area=232,949 sf 28.70% Impervious Runoff Depth=3.46"
Flow Length=1,896' Tc=11.6 min CN=56 Runoff=17.54 cfs 1.540 af

Subcatchment 2A: Tributary to North Runoff Area=153,771 sf 2.18% Impervious Runoff Depth=1.29"
Flow Length=1,053' Tc=19.7 min CN=37 Runoff=2.47 cfs 0.381 af

Subcatchment 2B: Tributary to North Runoff Area=19,885 sf 44.23% Impervious Runoff Depth=4.54"
Tc=5.0 min CN=65 Runoff=2.52 cfs 0.173 af

Subcatchment 2C: Tributary to North Runoff Area=43,544 sf 0.00% Impervious Runoff Depth=1.50"
Flow Length=155' Tc=5.3 min CN=39 Runoff=1.34 cfs 0.125 af

Subcatchment 3A: Tributary to South Runoff Area=88,618 sf 4.51% Impervious Runoff Depth=1.72"
Flow Length=502' Tc=11.3 min CN=41 Runoff=2.71 cfs 0.292 af

Subcatchment 3B: Tributary to South Runoff Area=8,218 sf 0.00% Impervious Runoff Depth=3.10"
Tc=5.0 min CN=53 Runoff=0.68 cfs 0.049 af

Subcatchment 3C: Tributary to South Runoff Area=9,177 sf 0.00% Impervious Runoff Depth=1.50"
Tc=5.0 min CN=39 Runoff=0.29 cfs 0.026 af

Subcatchment 3D: Tributary to South Runoff Area=64,750 sf 0.00% Impervious Runoff Depth=1.50"
Flow Length=385' Tc=7.2 min CN=39 Runoff=1.85 cfs 0.186 af

Subcatchment 3E: Tributary to South Runoff Area=37,533 sf 0.00% Impervious Runoff Depth=1.50"
Tc=5.0 min CN=39 Runoff=1.17 cfs 0.108 af

Subcatchment Lot 01: Roof Top Runoff Area=3,503 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.72 cfs 0.057 af

Subcatchment Lot 02: Roof Top Runoff Area=9,061 sf 39.84% Impervious Runoff Depth=4.30"
Tc=5.0 min CN=63 Runoff=1.08 cfs 0.075 af

Subcatchment Lot 03: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.033 af

Subcatchment Lot 04: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.033 af

Subcatchment Lot 05: Roof Top Runoff Area=3,233 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.66 cfs 0.053 af

Subcatchment Lot 06: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.033 af

Subcatchment Lot 07: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.033 af

Subcatchment Lot 08: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.033 af

Subcatchment Lot 09: Roof Top Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.033 af

Subcatchment Lot 10: Roof Top & Runoff Area=3,610 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.74 cfs 0.059 af

Subcatchment Lot 11: Roof Top & Runoff Area=3,463 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.71 cfs 0.057 af

Subcatchment Lot 12: Roof Top Runoff Area=3,547 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.73 cfs 0.058 af

Subcatchment Lot 13: Roof Top Runoff Area=3,643 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.75 cfs 0.060 af

Subcatchment Lot 14: Roof Top Runoff Area=3,667 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.75 cfs 0.060 af

Subcatchment Lot 15: Roof Top Runoff Area=3,345 sf 100.00% Impervious Runoff Depth=8.55"
Tc=5.0 min CN=98 Runoff=0.69 cfs 0.055 af

Reach 1R: North Wetland Inflow=4.12 cfs 0.482 af
Outflow=4.12 cfs 0.482 af

Reach 2R: South Wetland Inflow=6.23 cfs 0.715 af
Outflow=6.23 cfs 0.715 af

Reach 3R: Point of Analysis Inflow=6.98 cfs 1.197 af
Outflow=6.98 cfs 1.197 af

Reach S1: Swale Avg. Flow Depth=0.56' Max Vel=0.40 fps Inflow=2.71 cfs 0.292 af
n=0.150 L=100.0' S=0.0050 '/' Capacity=17.52 cfs Outflow=2.50 cfs 0.292 af

Pond 1Dw: Dry Well Peak Elev=484.76' Storage=1,314 cf Inflow=0.72 cfs 0.057 af
Discarded=0.03 cfs 0.057 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.057 af

Pond 1P: Infiltration Basin 1 Peak Elev=438.23' Storage=26,907 cf Inflow=17.54 cfs 1.540 af
Discarded=1.14 cfs 1.273 af Primary=3.71 cfs 0.267 af Outflow=4.85 cfs 1.540 af

Pond 2Dw: Dry Well Peak Elev=484.91' Storage=1,840 cf Inflow=1.08 cfs 0.075 af
Discarded=0.05 cfs 0.075 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.075 af

Pond 2P: Infiltration Basin 2 Peak Elev=437.74' Storage=2,269 cf Inflow=3.20 cfs 0.228 af
Discarded=0.17 cfs 0.150 af Primary=2.78 cfs 0.077 af Outflow=2.95 cfs 0.228 af

Pond 3Dw: Dry Well Peak Elev=483.65' Storage=693 cf Inflow=0.41 cfs 0.033 af
Discarded=0.02 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.033 af

Pond 3P: Wetland Peak Elev=435.13' Storage=5,048 cf Inflow=2.47 cfs 0.381 af
120.0" x 60.0" Box Culvert n=0.035 L=60.0' S=0.0100 '/' Outflow=0.86 cfs 0.279 af

Pond 4Dw: Dry Well Peak Elev=483.65' Storage=693 cf Inflow=0.41 cfs 0.033 af
Discarded=0.02 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.033 af

Pond 5Dw: Dry Well Peak Elev=484.31' Storage=1,189 cf Inflow=0.66 cfs 0.053 af
Discarded=0.03 cfs 0.053 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.053 af

Pond 6Dw: Dry Well Peak Elev=483.65' Storage=693 cf Inflow=0.41 cfs 0.033 af
Discarded=0.02 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.033 af

Pond 7Dw: Dry Well Peak Elev=483.65' Storage=693 cf Inflow=0.41 cfs 0.033 af
Discarded=0.02 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.033 af

Pond 8Dw: Dry Well Peak Elev=483.65' Storage=693 cf Inflow=0.41 cfs 0.033 af
Discarded=0.02 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.033 af

Pond 9Dw: Dry Well Peak Elev=483.65' Storage=693 cf Inflow=0.41 cfs 0.033 af
Discarded=0.02 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.033 af

Pond 10Dw: Dry Well Peak Elev=484.94' Storage=1,363 cf Inflow=0.74 cfs 0.059 af
Discarded=0.03 cfs 0.059 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.059 af

Pond 11Dw: Dry Well Peak Elev=484.69' Storage=1,295 cf Inflow=0.71 cfs 0.057 af
Discarded=0.03 cfs 0.057 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.057 af

Pond 12Dw: Dry Well Peak Elev=484.83' Storage=1,334 cf Inflow=0.73 cfs 0.058 af
Discarded=0.03 cfs 0.058 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.058 af

Pond 13Dw: Dry Well Peak Elev=484.99' Storage=1,379 cf Inflow=0.75 cfs 0.060 af
Discarded=0.03 cfs 0.060 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.060 af

Pond 14Dw: Dry Well Peak Elev=484.98' Storage=1,388 cf Inflow=0.75 cfs 0.060 af
Discarded=0.03 cfs 0.060 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.060 af

Pond R11: Rain Garden Lot 11 Peak Elev=440.66' Storage=737 cf Inflow=1.85 cfs 0.186 af
Discarded=0.08 cfs 0.085 af Primary=1.49 cfs 0.101 af Outflow=1.57 cfs 0.186 af

Pond R6: Rain Garden Lot 6 Peak Elev=484.72' Storage=656 cf Inflow=2.50 cfs 0.292 af
Discarded=0.07 cfs 0.075 af Primary=2.41 cfs 0.216 af Outflow=2.48 cfs 0.292 af

Pond R7: Rain Garden Lot 7 Peak Elev=475.59' Storage=296 cf Inflow=0.68 cfs 0.049 af
Discarded=0.04 cfs 0.030 af Primary=0.61 cfs 0.019 af Outflow=0.65 cfs 0.049 af

Pond R8: Rain Garden Lot 8 Peak Elev=468.53' Storage=240 cf Inflow=0.29 cfs 0.026 af
Discarded=0.03 cfs 0.023 af Primary=0.10 cfs 0.003 af Outflow=0.14 cfs 0.026 af

Total Runoff Area = 16.242 ac Runoff Volume = 3.609 af Average Runoff Depth = 2.67"
82.10% Pervious = 13.336 ac 17.90% Impervious = 2.907 ac

Summary for Subcatchment 1A: Tributary to Detention Basin

Runoff = 17.54 cfs @ 12.17 hrs, Volume= 1.540 af, Depth= 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

	Area (sf)	CN	Description
	61,613	98	Paved roads w/curbs & sewers, HSG A
*	5,241	98	Paved Sidewalk, HSG A
	166,095	39	>75% Grass cover, Good, HSG A
	232,949	56	Weighted Average
	166,095		71.30% Pervious Area
	66,854		28.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.1	365	0.0800	5.74		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	296	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
0.9	487	0.0250	9.40	16.61	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
1.6	698	0.0100	7.20	22.62	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Concrete pipe, bends & connections
11.6	1,896	Total			

Summary for Subcatchment 2A: Tributary to North Wetland

Runoff = 2.47 cfs @ 12.37 hrs, Volume= 0.381 af, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

	Area (sf)	CN	Description
	90,630	39	>75% Grass cover, Good, HSG A
*	3,345	98	Wetland
	59,796	30	Woods, Good, HSG A
	153,771	37	Weighted Average
	150,426		97.82% Pervious Area
	3,345		2.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
2.9	327	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.3	367	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	153	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.5	105	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	51	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.7	1,053	Total			

Summary for Subcatchment 2B: Tributary to North Wetland

Runoff = 2.52 cfs @ 12.08 hrs, Volume= 0.173 af, Depth= 4.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

	Area (sf)	CN	Description
	7,747	98	Paved roads w/curbs & sewers, HSG A
	4,945	39	>75% Grass cover, Good, HSG A
*	1,049	98	Paved Sidewalk, HSG A
	6,144	39	>75% Grass cover, Good, HSG A
	19,885	65	Weighted Average
	11,089		55.77% Pervious Area
	8,796		44.23% Impervious Area

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

Summary for Subcatchment 2C: Tributary to North Wetland

Runoff = 1.34 cfs @ 12.10 hrs, Volume= 0.125 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
43,544	39	>75% Grass cover, Good, HSG A
43,544		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0600	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.3	55	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	50	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	155	Total			

Summary for Subcatchment 3A: Tributary to South Wetland

Runoff = 2.71 cfs @ 12.19 hrs, Volume= 0.292 af, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
81,385	39	>75% Grass cover, Good, HSG A
3,233	30	Woods, Good, HSG A
2,000	98	Roofs
1,000	98	Paved parking, HSG A
1,000	98	Paved parking, HSG C
88,618	41	Weighted Average
84,618		95.49% Pervious Area
4,000		4.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0600	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
3.1	319	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	133	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	502	Total			

Summary for Subcatchment 3B: Tributary to South Wetland

Runoff = 0.68 cfs @ 12.08 hrs, Volume= 0.049 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
5,011	39	>75% Grass cover, Good, HSG A
3,207	74	>75% Grass cover, Good, HSG C
8,218	53	Weighted Average
8,218		100.00% Pervious Area

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

Summary for Subcatchment 3C: Tributary to South Wetland

Runoff = 0.29 cfs @ 12.10 hrs, Volume= 0.026 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
9,177	39	>75% Grass cover, Good, HSG A
9,177		100.00% Pervious Area

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

Summary for Subcatchment 3D: Tributary to South Wetland

Runoff = 1.85 cfs @ 12.13 hrs, Volume= 0.186 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
64,750	39	>75% Grass cover, Good, HSG A
64,750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.4	190	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	145	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	385	Total			

Summary for Subcatchment 3E: Tributary to South Wetland

Runoff = 1.17 cfs @ 12.10 hrs, Volume= 0.108 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
37,533	39	>75% Grass cover, Good, HSG A
37,533		100.00% Pervious Area

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

Summary for Subcatchment Lot 01: Roof Top

Runoff = 0.72 cfs @ 12.07 hrs, Volume= 0.057 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
1,503	98	Paved parking, HSG A
3,503	98	Weighted Average
3,503		100.00% Impervious Area

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

Summary for Subcatchment Lot 02: Roof Top

Runoff = 1.08 cfs @ 12.08 hrs, Volume= 0.075 af, Depth= 4.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
1,610	98	Paved parking, HSG A
5,451	39	>75% Grass cover, Good, HSG A
9,061	63	Weighted Average
5,451		60.16% Pervious Area
3,610		39.84% Impervious Area

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

Summary for Subcatchment Lot 03: Roof Top

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 04: Roof Top

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 05: Roof Top

Runoff = 0.66 cfs @ 12.07 hrs, Volume= 0.053 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
1,233	98	Paved parking, HSG A
3,233	98	Weighted Average
3,233		100.00% Impervious Area

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

Summary for Subcatchment Lot 06: Roof Top

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 07: Roof Top

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 08: Roof Top

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 09: Roof Top

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
2,000		100.00% Impervious Area

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

Summary for Subcatchment Lot 10: Roof Top & Driveway

Runoff = 0.74 cfs @ 12.07 hrs, Volume= 0.059 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
1,610	98	Paved parking, HSG A
3,610	98	Weighted Average
3,610		100.00% Impervious Area

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

Summary for Subcatchment Lot 11: Roof Top & Driveway

Runoff = 0.71 cfs @ 12.07 hrs, Volume= 0.057 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
1,463	98	Paved parking, HSG A
3,463	98	Weighted Average
3,463		100.00% Impervious Area

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

Summary for Subcatchment Lot 12: Roof Top

Runoff = 0.73 cfs @ 12.07 hrs, Volume= 0.058 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
1,547	98	Paved parking, HSG A
3,547	98	Weighted Average
3,547		100.00% Impervious Area

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

Summary for Subcatchment Lot 13: Roof Top

Runoff = 0.75 cfs @ 12.07 hrs, Volume= 0.060 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
1,643	98	Paved parking, HSG A
3,643	98	Weighted Average
3,643		100.00% Impervious Area

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

Summary for Subcatchment Lot 14: Roof Top

Runoff = 0.75 cfs @ 12.07 hrs, Volume= 0.060 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
1,667	98	Paved parking, HSG A
3,667	98	Weighted Average
3,667		100.00% Impervious Area

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

Summary for Subcatchment Lot 15: Roof Top

Runoff = 0.69 cfs @ 12.07 hrs, Volume= 0.055 af, Depth= 8.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
2,000	98	Roofs
1,345	98	Paved parking, HSG A
3,345	98	Weighted Average
3,345		100.00% Impervious Area

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

Summary for Reach 1R: North Wetland

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

Inflow Area =	5.556 ac,	13.02% Impervious,	Inflow Depth =	1.04"	for 100-Year event
Inflow =	4.12 cfs @	12.11 hrs,	Volume=	0.482 af	
Outflow =	4.12 cfs @	12.11 hrs,	Volume=	0.482 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach 2R: South Wetland

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

Inflow Area =	10.687 ac,	20.43% Impervious,	Inflow Depth =	0.80"	for 100-Year event
Inflow =	6.23 cfs @	12.59 hrs,	Volume=	0.715 af	
Outflow =	6.23 cfs @	12.59 hrs,	Volume=	0.715 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach 3R: Point of Analysis

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

Inflow Area =	16.242 ac,	17.90% Impervious,	Inflow Depth =	0.88"	for 100-Year event
Inflow =	6.98 cfs @	12.57 hrs,	Volume=	1.197 af	
Outflow =	6.98 cfs @	12.57 hrs,	Volume=	1.197 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Reach S1: Swale

Inflow Area = 2.034 ac, 4.51% Impervious, Inflow Depth = 1.72" for 100-Year event
Inflow = 2.71 cfs @ 12.19 hrs, Volume= 0.292 af
Outflow = 2.50 cfs @ 12.32 hrs, Volume= 0.292 af, Atten= 8%, Lag= 7.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.40 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 0.13 fps, Avg. Travel Time= 12.4 min

Peak Storage= 630 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.56'
Bank-Full Depth= 1.50' Flow Area= 25.5 sf, Capacity= 17.52 cfs

8.00' x 1.50' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 6.0 '/' Top Width= 26.00'
Length= 100.0' Slope= 0.0050 '/'
Inlet Invert= 486.00', Outlet Invert= 485.50'

‡

Summary for Pond 1Dw: Dry Well

Inflow Area = 0.080 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.057 af
Outflow = 0.03 cfs @ 14.22 hrs, Volume= 0.057 af, Atten= 95%, Lag= 129.1 min
Discarded = 0.03 cfs @ 14.22 hrs, Volume= 0.057 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.76' @ 14.22 hrs Surf.Area= 276 sf Storage= 1,314 cf

Plug-Flow detention time= 405.6 min calculated for 0.057 af (100% of inflow)
Center-of-Mass det. time= 405.7 min (1,144.8 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 14.22 hrs HW=484.76' (Free Discharge)
└**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 1P: Infiltration Basin 1

Inflow Area =	5.394 ac, 29.31% Impervious, Inflow Depth = 3.43" for 100-Year event				
Inflow =	17.54 cfs @	12.17 hrs, Volume=	1.540 af		
Outflow =	4.85 cfs @	12.63 hrs, Volume=	1.540 af, Atten= 72%, Lag= 27.6 min		
Discarded =	1.14 cfs @	12.63 hrs, Volume=	1.273 af		
Primary =	3.71 cfs @	12.63 hrs, Volume=	0.267 af		

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 438.23' @ 12.63 hrs Surf.Area= 8,900 sf Storage= 26,907 cf

Plug-Flow detention time= 262.3 min calculated for 1.540 af (100% of inflow)
Center-of-Mass det. time= 262.3 min (1,117.5 - 855.1)

Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	34,159 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
434.00	3,992	0	0
435.00	5,060	4,526	4,526
436.00	6,185	5,623	10,149
437.00	7,365	6,775	16,924
438.00	8,605	7,985	24,909
439.00	9,896	9,251	34,159

Device	Routing	Invert	Outlet Devices
#1	Primary	437.95'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	434.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 432.00'

Discarded OutFlow Max=1.14 cfs @ 12.63 hrs HW=438.23' (Free Discharge)
└**2=Exfiltration** (Controls 1.14 cfs)

Primary OutFlow Max=3.69 cfs @ 12.63 hrs HW=438.23' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 3.69 cfs @ 1.33 fps)

Summary for Pond 2Dw: Dry Well

Inflow Area = 0.208 ac, 39.84% Impervious, Inflow Depth = 4.30" for 100-Year event
Inflow = 1.08 cfs @ 12.08 hrs, Volume= 0.075 af
Outflow = 0.05 cfs @ 15.39 hrs, Volume= 0.075 af, Atten= 96%, Lag= 198.7 min
Discarded = 0.05 cfs @ 15.39 hrs, Volume= 0.075 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 484.91' @ 15.39 hrs Surf.Area= 340 sf Storage= 1,840 cf

Plug-Flow detention time= 471.4 min calculated for 0.075 af (100% of inflow)
Center-of-Mass det. time= 471.4 min (1,305.5 - 834.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	422 cf	**ADS_StormTech SC-740** x 9 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	479.50'	1,448 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,870 cf Overall - 422 cf Embedded = 1,448 cf
		1,870 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
479.50	340	0	0
485.00	340	1,870	1,870

Device	Routing	Invert	Outlet Devices
#1	Discarded	479.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.05 cfs @ 15.39 hrs HW=484.91' (Free Discharge)
└─**1=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=479.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 2P: Infiltration Basin 2

Inflow Area =	0.533 ac, 52.26% Impervious, Inflow Depth = 5.12" for 100-Year event				
Inflow =	3.20 cfs @	12.07 hrs,	Volume=	0.228 af	
Outflow =	2.95 cfs @	12.11 hrs,	Volume=	0.228 af,	Atten= 8%, Lag= 2.0 min
Discarded =	0.17 cfs @	12.11 hrs,	Volume=	0.150 af	
Primary =	2.78 cfs @	12.11 hrs,	Volume=	0.077 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 437.74' @ 12.11 hrs Surf.Area= 1,368 sf Storage= 2,269 cf

Plug-Flow detention time= 112.8 min calculated for 0.227 af (100% of inflow)
Center-of-Mass det. time= 112.8 min (920.9 - 808.1)

Volume	Invert	Avail.Storage	Storage Description
#1	435.00'	3,521 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
435.00	360	0	0
436.00	670	515	515
437.00	1,050	860	1,375
438.00	1,480	1,265	2,640
438.50	2,044	881	3,521

Device	Routing	Invert	Outlet Devices
#1	Primary	437.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	435.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 434.00'

Discarded OutFlow Max=0.17 cfs @ 12.11 hrs HW=437.74' (Free Discharge)
└**2=Exfiltration** (Controls 0.17 cfs)

Primary OutFlow Max=2.77 cfs @ 12.11 hrs HW=437.74' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 2.77 cfs @ 1.16 fps)

Summary for Pond 3Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af
Outflow = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af, Atten= 95%, Lag= 114.6 min
Discarded = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 483.65' @ 13.98 hrs Surf.Area= 220 sf Storage= 693 cf

Plug-Flow detention time= 318.7 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 318.8 min (1,057.9 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.98 hrs HW=483.65' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 3P: Wetland

Inflow Area = 3.530 ac, 2.18% Impervious, Inflow Depth = 1.29" for 100-Year event
Inflow = 2.47 cfs @ 12.37 hrs, Volume= 0.381 af
Outflow = 0.86 cfs @ 13.07 hrs, Volume= 0.279 af, Atten= 65%, Lag= 41.7 min
Primary = 0.86 cfs @ 13.07 hrs, Volume= 0.279 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 435.13' @ 13.07 hrs Surf.Area= 5,104 sf Storage= 5,048 cf

Plug-Flow detention time= 186.1 min calculated for 0.279 af (73% of inflow)
Center-of-Mass det. time= 82.2 min (1,005.8 - 923.6)

Volume	Invert	Avail.Storage	Storage Description
#1	434.00'	58,516 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
434.00	3,853	0	0
436.00	6,072	9,925	9,925
438.00	7,616	13,688	23,613
440.00	8,714	16,330	39,943
442.00	9,859	18,573	58,516

Device	Routing	Invert	Outlet Devices
#1	Primary	435.00'	**120.0" W x 60.0" H Box Culvert** L= 60.0' Box, headwall w/3 square edges, Ke= 0.500 Inlet / Outlet Invert= 435.00' / 434.40' S= 0.0100 '/' Cc= 0.900 n= 0.035 Earth, dense weeds, Flow Area= 50.00 sf

Primary OutFlow Max=0.84 cfs @ 13.07 hrs HW=435.13' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.84 cfs @ 0.88 fps)

Summary for Pond 4Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af
Outflow = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af, Atten= 95%, Lag= 114.6 min
Discarded = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 483.65' @ 13.98 hrs Surf.Area= 220 sf Storage= 693 cf

Plug-Flow detention time= 318.7 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 318.8 min (1,057.9 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.98 hrs HW=483.65' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 5Dw: Dry Well

Inflow Area = 0.074 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.66 cfs @ 12.07 hrs, Volume= 0.053 af
Outflow = 0.03 cfs @ 14.11 hrs, Volume= 0.053 af, Atten= 95%, Lag= 122.5 min
Discarded = 0.03 cfs @ 14.11 hrs, Volume= 0.053 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.31' @ 14.11 hrs Surf.Area= 276 sf Storage= 1,189 cf

Plug-Flow detention time= 381.0 min calculated for 0.053 af (100% of inflow)
Center-of-Mass det. time= 381.0 min (1,120.1 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 14.11 hrs HW=484.31' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 6Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af
Outflow = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af, Atten= 95%, Lag= 114.6 min
Discarded = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 483.65' @ 13.98 hrs Surf.Area= 220 sf Storage= 693 cf

Plug-Flow detention time= 318.7 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 318.8 min (1,057.9 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.98 hrs HW=483.65' (Free Discharge)
└─**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 7Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af
Outflow = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af, Atten= 95%, Lag= 114.6 min
Discarded = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 483.65' @ 13.98 hrs Surf.Area= 220 sf Storage= 693 cf

Plug-Flow detention time= 318.7 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 318.8 min (1,057.9 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.98 hrs HW=483.65' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 8Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af
Outflow = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af, Atten= 95%, Lag= 114.6 min
Discarded = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 483.65' @ 13.98 hrs Surf.Area= 220 sf Storage= 693 cf

Plug-Flow detention time= 318.7 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 318.8 min (1,057.9 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.98 hrs HW=483.65' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 9Dw: Dry Well

Inflow Area = 0.046 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.41 cfs @ 12.07 hrs, Volume= 0.033 af
Outflow = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af, Atten= 95%, Lag= 114.6 min
Discarded = 0.02 cfs @ 13.98 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 483.65' @ 13.98 hrs Surf.Area= 220 sf Storage= 693 cf

Plug-Flow detention time= 318.7 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 318.8 min (1,057.9 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	284 cf	**ADS_StormTech SC-740** x 6 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 3 rows
#2	480.50'	596 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 880 cf Overall - 284 cf Embedded = 596 cf
		880 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.50	220	0	0
484.50	220	880	880

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.50'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	484.00'	**4.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.02 cfs @ 13.98 hrs HW=483.65' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 10Dw: Dry Well

Inflow Area = 0.083 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.74 cfs @ 12.07 hrs, Volume= 0.059 af
Outflow = 0.03 cfs @ 14.26 hrs, Volume= 0.059 af, Atten= 95%, Lag= 131.5 min
Discarded = 0.03 cfs @ 14.26 hrs, Volume= 0.059 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.94' @ 14.26 hrs Surf.Area= 276 sf Storage= 1,363 cf

Plug-Flow detention time= 415.0 min calculated for 0.059 af (100% of inflow)
Center-of-Mass det. time= 415.1 min (1,154.2 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 14.26 hrs HW=484.94' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 11Dw: Dry Well

Inflow Area = 0.079 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.71 cfs @ 12.07 hrs, Volume= 0.057 af
Outflow = 0.03 cfs @ 14.21 hrs, Volume= 0.057 af, Atten= 95%, Lag= 128.1 min
Discarded = 0.03 cfs @ 14.21 hrs, Volume= 0.057 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.69' @ 14.21 hrs Surf.Area= 276 sf Storage= 1,295 cf

Plug-Flow detention time= 402.1 min calculated for 0.057 af (100% of inflow)
Center-of-Mass det. time= 402.1 min (1,141.3 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 14.21 hrs HW=484.69' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 12Dw: Dry Well

Inflow Area =	0.081 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event				
Inflow =	0.73 cfs @	12.07 hrs,	Volume=	0.058 af	
Outflow =	0.03 cfs @	14.24 hrs,	Volume=	0.058 af,	Atten= 95%, Lag= 130.1 min
Discarded =	0.03 cfs @	14.24 hrs,	Volume=	0.058 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.83' @ 14.24 hrs Surf.Area= 276 sf Storage= 1,334 cf

Plug-Flow detention time= 409.5 min calculated for 0.058 af (100% of inflow)
Center-of-Mass det. time= 409.6 min (1,148.7 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 14.24 hrs HW=484.83' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 13Dw: Dry Well

Inflow Area = 0.084 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.75 cfs @ 12.07 hrs, Volume= 0.060 af
Outflow = 0.03 cfs @ 14.27 hrs, Volume= 0.060 af, Atten= 95%, Lag= 132.2 min
Discarded = 0.03 cfs @ 14.27 hrs, Volume= 0.060 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.99' @ 14.27 hrs Surf.Area= 276 sf Storage= 1,379 cf

Plug-Flow detention time= 417.8 min calculated for 0.060 af (100% of inflow)
Center-of-Mass det. time= 417.9 min (1,157.1 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	480.00'	1,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,380 cf Overall - 379 cf Embedded = 1,001 cf
		1,380 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
480.00	276	0	0
485.00	276	1,380	1,380

Device	Routing	Invert	Outlet Devices
#1	Discarded	480.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 14.27 hrs HW=484.99' (Free Discharge)
└**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=480.00' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 14Dw: Dry Well

Inflow Area = 0.084 ac,100.00% Impervious, Inflow Depth = 8.55" for 100-Year event
Inflow = 0.75 cfs @ 12.07 hrs, Volume= 0.060 af
Outflow = 0.03 cfs @ 14.26 hrs, Volume= 0.060 af, Atten= 95%, Lag= 131.2 min
Discarded = 0.03 cfs @ 14.26 hrs, Volume= 0.060 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.98' @ 14.26 hrs Surf.Area= 276 sf Storage= 1,388 cf

Plug-Flow detention time= 417.2 min calculated for 0.060 af (100% of inflow)
Center-of-Mass det. time= 417.3 min (1,156.4 - 739.1)

Volume	Invert	Avail.Storage	Storage Description
#1	481.00'	379 cf	**ADS_StormTech SC-740** x 8 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap Row Length Adjustment= +0.44' x 6.45 sf x 4 rows
#2	479.95'	1,015 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 1,394 cf Overall - 379 cf Embedded = 1,015 cf
		1,394 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
479.95	276	0	0
485.00	276	1,394	1,394

Device	Routing	Invert	Outlet Devices
#1	Discarded	479.95'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 476.00'
#2	Primary	485.00'	**5.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.03 cfs @ 14.26 hrs HW=484.98' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=479.95' (Free Discharge)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond R11: Rain Garden Lot 11

Inflow Area =	1.486 ac,	0.00% Impervious,	Inflow Depth =	1.50"	for 100-Year event
Inflow =	1.85 cfs @	12.13 hrs,	Volume=	0.186 af	
Outflow =	1.57 cfs @	12.20 hrs,	Volume=	0.186 af,	Atten= 15%, Lag= 4.0 min
Discarded =	0.08 cfs @	12.20 hrs,	Volume=	0.085 af	
Primary =	1.49 cfs @	12.20 hrs,	Volume=	0.101 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 440.66' @ 12.20 hrs Surf.Area= 1,315 sf Storage= 737 cf

Plug-Flow detention time= 50.9 min calculated for 0.186 af (100% of inflow)
Center-of-Mass det. time= 50.9 min (953.2 - 902.2)

Volume	Invert	Avail.Storage	Storage Description
#1	440.00'	1,220 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
440.00	920	0	0
441.00	1,520	1,220	1,220

Device	Routing	Invert	Outlet Devices
#1	Discarded	440.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 436.00'
#2	Primary	440.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.08 cfs @ 12.20 hrs HW=440.66' (Free Discharge)
└**1=Exfiltration** (Controls 0.08 cfs)

Primary OutFlow Max=1.48 cfs @ 12.20 hrs HW=440.66' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 1.48 cfs @ 0.93 fps)

Summary for Pond R6: Rain Garden Lot 6

Inflow Area =	2.034 ac,	4.51% Impervious,	Inflow Depth =	1.72"	for 100-Year event
Inflow =	2.50 cfs @	12.32 hrs,	Volume=	0.292 af	
Outflow =	2.48 cfs @	12.34 hrs,	Volume=	0.292 af,	Atten= 1%, Lag= 1.3 min
Discarded =	0.07 cfs @	12.34 hrs,	Volume=	0.075 af	
Primary =	2.41 cfs @	12.34 hrs,	Volume=	0.216 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 484.72' @ 12.34 hrs Surf.Area= 1,046 sf Storage= 656 cf

Plug-Flow detention time= 29.7 min calculated for 0.292 af (100% of inflow)
Center-of-Mass det. time= 29.7 min (939.4 - 909.6)

Volume	Invert	Avail.Storage	Storage Description
#1	484.00'	965 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
484.00	780	0	0
485.00	1,150	965	965

Device	Routing	Invert	Outlet Devices
#1	Discarded	484.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 481.00'
#2	Primary	484.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.07 cfs @ 12.34 hrs HW=484.72' (Free Discharge)
└**1=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=2.41 cfs @ 12.34 hrs HW=484.72' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 2.41 cfs @ 1.10 fps)

Summary for Pond R7: Rain Garden Lot 7

Inflow Area =	0.189 ac,	0.00% Impervious,	Inflow Depth =	3.10"	for 100-Year event
Inflow =	0.68 cfs @	12.08 hrs,	Volume=	0.049 af	
Outflow =	0.65 cfs @	12.11 hrs,	Volume=	0.049 af,	Atten= 6%, Lag= 1.7 min
Discarded =	0.04 cfs @	12.11 hrs,	Volume=	0.030 af	
Primary =	0.61 cfs @	12.11 hrs,	Volume=	0.019 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 475.59' @ 12.11 hrs Surf.Area= 627 sf Storage= 296 cf

Plug-Flow detention time= 49.3 min calculated for 0.049 af (100% of inflow)
Center-of-Mass det. time= 49.3 min (905.2 - 856.0)

Volume	Invert	Avail.Storage	Storage Description
#1	475.00'	590 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
475.00	380	0	0
476.00	800	590	590

Device	Routing	Invert	Outlet Devices
#1	Discarded	475.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 470.00'
#2	Primary	475.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.04 cfs @ 12.11 hrs HW=475.59' (Free Discharge)
└**1=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=0.61 cfs @ 12.11 hrs HW=475.59' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.61 cfs @ 0.69 fps)

Summary for Pond R8: Rain Garden Lot 8

Inflow Area =	0.211 ac,	0.00% Impervious,	Inflow Depth =	1.50"	for 100-Year event
Inflow =	0.29 cfs @	12.10 hrs,	Volume=	0.026 af	
Outflow =	0.14 cfs @	12.40 hrs,	Volume=	0.026 af,	Atten= 51%, Lag= 18.5 min
Discarded =	0.03 cfs @	12.40 hrs,	Volume=	0.023 af	
Primary =	0.10 cfs @	12.40 hrs,	Volume=	0.003 af	

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 468.53' @ 12.40 hrs Surf.Area= 561 sf Storage= 240 cf

Plug-Flow detention time= 65.1 min calculated for 0.026 af (100% of inflow)
Center-of-Mass det. time= 65.1 min (965.3 - 900.2)

Volume	Invert	Avail.Storage	Storage Description
#1	468.00'	550 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

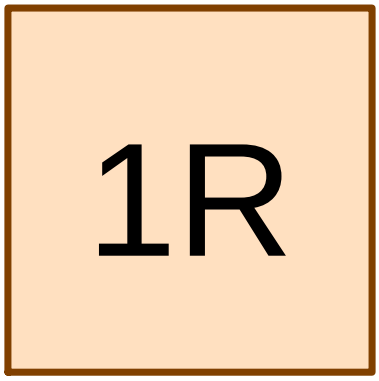
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
468.00	350	0	0
469.00	750	550	550

Device	Routing	Invert	Outlet Devices
#1	Discarded	468.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 464.00'
#2	Primary	468.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

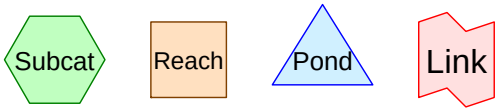
Discarded OutFlow Max=0.03 cfs @ 12.40 hrs HW=468.53' (Free Discharge)
└─**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.10 cfs @ 12.40 hrs HW=468.53' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.10 cfs @ 0.38 fps)

2’ X 3’ Box Culvert Design



2' X 3' Box Culvert



Routing Diagram for 006 - Grafton 2X3 BOX CULVERT
Prepared by McCarty Engineering, Inc., Printed 6/9/2016
HydroCAD® 10.00-16 s/n 02034 © 2015 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.000	**0**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.000		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Reach 1R: 2' X 3' Box Culvert Avg. Flow Depth=0.93' Max Vel=7.53 fps Inflow=20.93 cfs 83.045 af
n=0.011 L=46.0' S=0.0065 '/' Capacity=59.06 cfs Outflow=20.93 cfs 83.024 af

Summary for Reach 1R: 2' X 3' Box Culvert

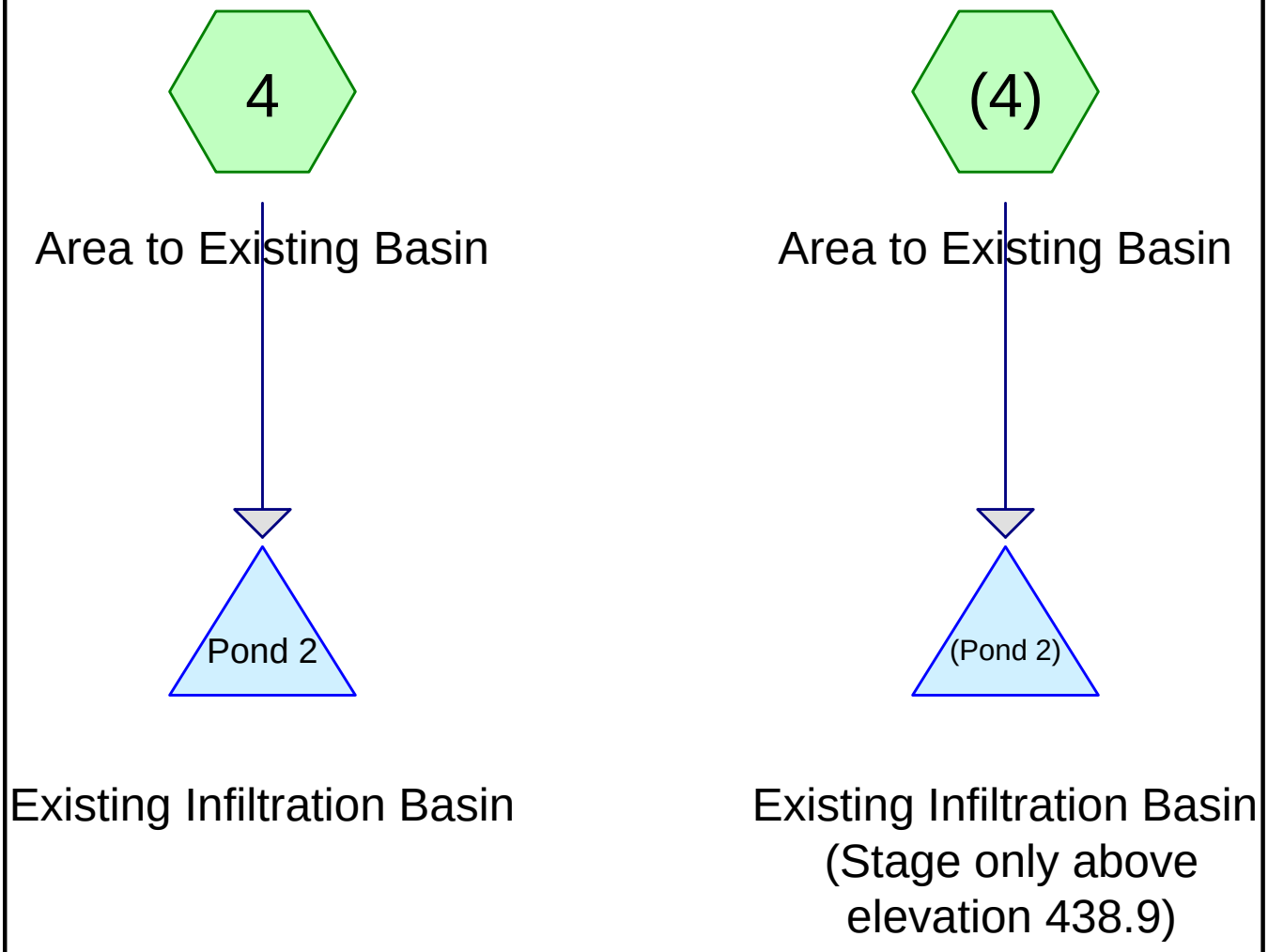
Inflow	=	20.93 cfs @	0.00 hrs,	Volume=	83.045 af, Incl. 20.93 cfs Base Flow
Outflow	=	20.93 cfs @	0.18 hrs,	Volume=	83.024 af, Atten= 0%, Lag= 10.8 min

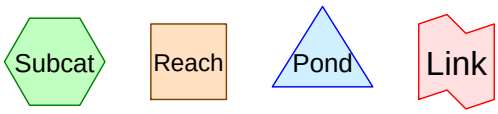
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 7.53 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 7.53 fps, Avg. Travel Time= 0.1 min

Peak Storage= 128 cf @ 0.18 hrs
Average Depth at Peak Storage= 0.93'
Bank-Full Depth= 2.00' Flow Area= 6.0 sf, Capacity= 59.06 cfs

3.00' x 2.00' deep channel, n= 0.011 Concrete pipe, straight & clean
Length= 46.0' Slope= 0.0065 '/'
Inlet Invert= 440.10', Outlet Invert= 439.80'

Existing Basin 2 HydroCAD Model





Routing Diagram for Existing Detention Basin 2
Prepared by McCarty Engineering, Inc., Printed 6/9/2016
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.380	39	>75% Grass cover, Good, HSG A ((4), 4)
0.476	98	Paved parking, HSG A ((4), 4)
0.855	**72**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.855	HSG A	(4), 4
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.855		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.380	0.000	0.000	0.000	0.000	0.380	>75% Grass cover, Good	(4), 4
0.476	0.000	0.000	0.000	0.000	0.476	Paved parking	(4), 4
0.855	**0.000**	**0.000**	**0.000**	**0.000**	**0.855**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	(Pond 2)	435.60	435.20	40.0	0.0100	0.012	18.0	0.0	0.0
2	(Pond 2)	435.60	435.15	45.0	0.0100	0.012	18.0	0.0	0.0
3	(Pond 2)	435.00	434.50	50.0	0.0100	0.011	8.0	0.0	0.0
4	Pond 2	435.60	435.20	40.0	0.0100	0.012	18.0	0.0	0.0
5	Pond 2	435.60	435.15	45.0	0.0100	0.012	18.0	0.0	0.0
6	Pond 2	435.00	434.50	50.0	0.0100	0.011	8.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment (4): Area to Existing Basin Runoff Area=18,625 sf 55.62% Impervious Runoff Depth=5.39"
Tc=5.0 min CN=72 Runoff=2.80 cfs 0.192 af

Subcatchment 4: Area to Existing Basin Runoff Area=18,625 sf 55.62% Impervious Runoff Depth=5.39"
Tc=5.0 min CN=72 Runoff=2.80 cfs 0.192 af

Pond (Pond 2): Existing Infiltration Basin Peak Elev=438.90' Storage=16 cf Inflow=2.80 cfs 0.192 af
Discarded=0.07 cfs 0.005 af Primary=2.72 cfs 0.187 af Outflow=2.80 cfs 0.192 af

Pond Pond 2: Existing Infiltration Basin Peak Elev=435.24' Storage=2,297 cf Inflow=2.80 cfs 0.192 af
Discarded=0.55 cfs 0.178 af Primary=0.12 cfs 0.014 af Outflow=0.67 cfs 0.192 af

Total Runoff Area = 0.855 ac Runoff Volume = 0.384 af Average Runoff Depth = 5.39"
44.38% Pervious = 0.380 ac 55.62% Impervious = 0.476 ac

Summary for Subcatchment (4): Area to Existing Basin

Runoff = 2.80 cfs @ 12.07 hrs, Volume= 0.192 af, Depth= 5.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
1,277	98	Paved parking, HSG A
9,082	98	Paved parking, HSG A
8,266	39	>75% Grass cover, Good, HSG A
18,625	72	Weighted Average
8,266		44.38% Pervious Area
10,359		55.62% Impervious Area

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

Summary for Subcatchment 4: Area to Existing Basin

Runoff = 2.80 cfs @ 12.07 hrs, Volume= 0.192 af, Depth= 5.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.79"

Area (sf)	CN	Description
1,277	98	Paved parking, HSG A
9,082	98	Paved parking, HSG A
8,266	39	>75% Grass cover, Good, HSG A
18,625	72	Weighted Average
8,266		44.38% Pervious Area
10,359		55.62% Impervious Area

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

Summary for Pond (Pond 2): Existing Infiltration Basin (Stage only above elevation 438.9)

Inflow Area =	0.428 ac, 55.62% Impervious, Inflow Depth = 5.39" for 100-Year event				
Inflow =	2.80 cfs @	12.07 hrs, Volume=	0.192 af		
Outflow =	2.80 cfs @	12.08 hrs, Volume=	0.192 af, Atten= 0%, Lag= 0.1 min		
Discarded =	0.07 cfs @	12.08 hrs, Volume=	0.005 af		
Primary =	2.72 cfs @	12.08 hrs, Volume=	0.187 af		

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 438.90' @ 12.08 hrs Surf.Area= 15,119 sf Storage= 16 cf

Plug-Flow detention time= 0.1 min calculated for 0.192 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (815.8 - 815.7)

Volume	Invert	Avail.Storage	Storage Description
#1	438.90'	17,582 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
438.90	15,117	0	0
440.00	16,850	17,582	17,582

Device	Routing	Invert	Outlet Devices
#1	Primary	435.60'	**18.0" Round Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 435.60' / 435.20' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Primary	439.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#3	Primary	435.60'	**18.0" Round Culvert X 2.00** L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 435.60' / 435.15' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#4	Device 3	435.90'	**12.0" Vert. Orifice/Grate X 2.00** C= 0.600
#5	Primary	435.00'	**8.0" Round Culvert** L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 435.00' / 434.50' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.35 sf
#6	Device 5	435.00'	**8" Elbow with 2 Foot Riser** Head (feet) 0.00 0.50 1.00 1.50 2.00 2.50 3.00 4.00 Disch. (cfs) 0.000 0.250 0.550 1.050 1.650 3.800 4.100 4.500
#7	Discarded	438.90'	**2.160 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 433.00'

Discarded OutFlow Max=0.76 cfs @ 12.08 hrs HW=438.90' (Free Discharge)
└─**7=Exfiltration** (Controls 0.76 cfs)

Primary OutFlow Max=28.47 cfs @ 12.08 hrs HW=438.90' (Free Discharge)
├─**1=Culvert** (Inlet Controls 13.59 cfs @ 7.69 fps)
├─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├─**3=Culvert** (Passes 11.96 cfs of 27.18 cfs potential flow)
│ └─**4=Orifice/Grate** (Orifice Controls 11.96 cfs @ 7.61 fps)
└─**5=Culvert** (Barrel Controls 2.92 cfs @ 8.37 fps)
└─**6=8" Elbow with 2 Foot Riser** (Passes 2.92 cfs of 4.46 cfs potential flow)

Summary for Pond Pond 2: Existing Infiltration Basin

Inflow Area = 0.428 ac, 55.62% Impervious, Inflow Depth = 5.39" for 100-Year event
Inflow = 2.80 cfs @ 12.07 hrs, Volume= 0.192 af
Outflow = 0.67 cfs @ 12.47 hrs, Volume= 0.192 af, Atten= 76%, Lag= 23.6 min
Discarded = 0.55 cfs @ 12.47 hrs, Volume= 0.178 af
Primary = 0.12 cfs @ 12.47 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 435.24' @ 12.47 hrs Surf.Area= 9,902 sf Storage= 2,297 cf

Plug-Flow detention time= 29.6 min calculated for 0.192 af (100% of inflow)
Center-of-Mass det. time= 29.6 min (845.3 - 815.7)

Volume	Invert	Avail.Storage	Storage Description
#1	435.00'	65,800 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
435.00	9,500	0	0
436.00	11,200	10,350	10,350
438.00	13,700	24,900	35,250
440.00	16,850	30,550	65,800

Device	Routing	Invert	Outlet Devices
#1	Primary	435.60'	**18.0" Round Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 435.60' / 435.20' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Primary	439.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#3	Primary	435.60'	**18.0" Round Culvert X 2.00** L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 435.60' / 435.15' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#4	Device 3	435.90'	**12.0" Vert. Orifice/Grate X 2.00** C= 0.600
#5	Primary	435.00'	**8.0" Round Culvert** L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 435.00' / 434.50' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.35 sf
#6	Device 5	435.00'	**8" Elbow with 2 Foot Riser** Head (feet) 0.00 0.50 1.00 1.50 2.00 2.50 3.00 4.00 Disch. (cfs) 0.000 0.250 0.550 1.050 1.650 3.800 4.100 4.500
#7	Discarded	435.00'	**2.160 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 433.00'

Discarded OutFlow Max=0.55 cfs @ 12.47 hrs HW=435.24' (Free Discharge)
└─**7=Exfiltration** (Controls 0.55 cfs)

Primary OutFlow Max=0.12 cfs @ 12.47 hrs HW=435.24' (Free Discharge)
├─**1=Culvert** (Controls 0.00 cfs)
├─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
├─**3=Culvert** (Controls 0.00 cfs)
│ └─**4=Orifice/Grate** (Controls 0.00 cfs)
└─**5=Culvert** (Passes 0.12 cfs of 0.18 cfs potential flow)
└─**6=8" Elbow with 2 Foot Riser** (Custom Controls 0.12 cfs)