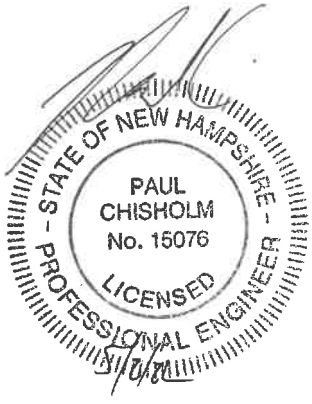
Alteration of Terrain Application

SHEPERDS HILL

Map 117; Lot 5
Shadowbrook Drive
Hudson, New Hampshire

May 2, 2022

KNA Project No. 17-0824-1



Prepared For: Sheperds Hill LLC
253 Main Street
Nashua, New Hampshire 03060

Prepared By: Keach-Nordstrom Associates, Inc.
10 Commerce Park North, Suite 3
Bedford, New Hampshire 03110
(603) 627-2881
(603) 627-2915 (fax)

KNA KEACH-NORDSTROM ASSOCIATES, INC.

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1. SIGNED APPLICANT AFFIDAVIT

2. AOT APPLICATION

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

ALTERATION OF TERRAIN PERMIT APPLICATION

Water Division/ Alteration of Terrain Bureau/ Land Resources Management
Check the Status of your Application: www.des.nh.gov/onestop

RSA/ Rule: RSA 485-A:17, Env-Wq 1500

Administrative Use Only	Administrative Use Only	Administrative Use Only	File Number: Check No. Amount: Initials:

1. APPLICANT INFORMATION (INTENDED PERMIT HOLDER)			
Applicant Name: Sehperds Hill LLC	Contact Name: Jessica Manoukian		
Email: vatcheoffice@gmail.com	Daytime Telephone: 603-860-6860		
Mailing Address: 253 Main Street			
Town/City: Nashua		State: NH	Zip Code: 03060
2. APPLICANT'S AGENT INFORMATION If none, check here: ☒			
Business Name:	Contact Name:		
Email:	Daytime Telephone:		
Address:			
Town/City:		State:	Zip Code:
3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT)			
Applicant Name: Sheperd's Hill Homeowner's Association	Contact Name: Great North Property Management		
Email:	Daytime Telephone:		
Mailing Address: 3 Holland Way, Suite 201			
Town/City: Exeter		State: NH	Zip Code: 03833
4. PROPERTY OWNER'S AGENT INFORMATION If none, check here: ☒			
Business Name:	Contact Name:		
Email:	Daytime Telephone:		
Address:			
Town/City:		State:	Zip Code:
5. CONSULTANT INFORMATION If none, check here: ☐			
Engineering Firm: Keach-Nordstrom Associates, Inc.	Contact Name: Matthew Peterson		
Email: mpeterson@keachnordstrom.com	Daytime Telephone: 603-6272881		
Address: 10 Commerce Park North, Suite 3			
Town/City: Bedford		State: NH	Zip Code: 03110

6. PROJECT TYPE

☐ Excavation Only ☒ Residential ☐ Commercial ☐ Golf Course ☐ School ☐ Municipal
☐ Agricultural ☐ Land Conversion ☐ Other:

7. PROJECT LOCATION INFORMATION

Project Name: Shepherds Hill

Street/Road Address: Shadowbrook Drive

Town/City: Hudson		County: Hillsborough	
Tax Map: 177	Block:	Lot Number: 5	Unit:

Location Coordinates: 42.770920/-71.401210 ☒ Latitude/Longitude ☐ UTM ☐ State Plane

Post-development, will the proposed project withdraw from or directly discharge to any of the following? If yes, identify the purpose.

1. Stream or Wetland Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge
2. Man-made pond created by impounding a stream or wetland Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge
3. Unlined pond dug into the water table Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge

Post-development, will the proposed project discharge to:

- A surface water impaired for phosphorus and/or nitrogen? ☒ No ☐ **Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen**
- A Class A surface water or Outstanding Resource Water? ☒ No ☐ **Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen**
- A lake or pond not covered previously? ☒ No ☐ **Yes - include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond**

Is the project a High Load area? ☐ Yes ☒ No
If yes, specify the type of high load land use or activity: _____

Is the project within a Water Supply Intake Protection Area (WSIPA)? ☐ Yes ☒ No
Is the project within a Groundwater Protection Area (GPA)? ☐ Yes ☒ No
Will the well setbacks identified in Env-Wq 1508.02 be met? ☒ Yes ☐ No

Note: Guidance document titled "*Using NHDES's OneStop WebGIS to Locate Protection Areas*" is available online. For more details on the restrictions in these areas, read Chapter 3.1 in Volume 2 of the NH Stormwater Manual.

Is any part of the property within the 100-year floodplain? ☐ Yes ☒ No
If yes: Cut volume: _____ cubic feet within the 100-year floodplain
Fill volume: _____ cubic feet within the 100-year floodplain

☐ Project **IS** within **¼ mile of a designated river** Name of River:
☒ Project is **NOT** within ¼ mile of a designated river

☐ Project **IS** within **a Coastal/Great Bay Region community - include info required by Env-Wq 1503.08(l) if applicable**
☒ Project is **NOT** within a Coastal/Great Bay Region community

8. BRIEF PROJECT DESCRIPTION (PLEASE DO NOT REPLY "SEE ATTACHED")

This project propses to build 118 duplex units in three locations along Shadowbrook Drive in the Shepherds Hill community. The construction process will involve three indepent roadways for each of the three locations as well as associated driveways for each house. Various stormwater practices will be used to mitigate the increase in runoff.

9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT

The three locations were grubbed and cleared of all woodland in 2003 The areas have since been used as staging and stockpile areas for the other portions of the Shepherds Hill development.

10. ADDITIONAL REQUIRED INFORMATION

A. Date a copy of the application was sent to the municipality as required by Env-Wq 1503.05(e)[1]: __/__/____.
(Attach proof of delivery)

B. Date a copy of the application was sent to the local river advisory committee if required by Env-Wq 1503.05(e)[2]: __/__/____.
(Attach proof of delivery)

C. Type of plan required: ☐ Land Conversion ☒ Detailed Development ☐ Excavation, Grading & Reclamation ☐ Steep Slope

D. Additional plans required: ☒ Stormwater Drainage & Hydrologic Soil Groups ☐ Source Control ☐ Chloride Management

E. Total area of disturbance: 529,899 square feet

F. Additional impervious cover as a result of the project: 199,069 square feet (use the "-" symbol to indicate a net reduction in impervious coverage).
Total final impervious cover: 258,746 square feet

G. Total undisturbed cover: 370,922 square feet

H. Number of lots proposed: 1

I. Total length of roadway: 2,321 linear feet

J. Name(s) of receiving water(s): 0

K. Identify all other NHDES permits required for the project, and for each indicate whether an application has been filed and is pending, or if the required approval has been issued provide the permit number, registration date, or approval letter number, as applicable.

Type of Approval	Application Filed?	Status	
		Pending	If Issued:
1. Water Supply Approval	☐ Yes ☒ No ☐ N/A	☐	Permit number:
2. Wetlands Permit	☐ Yes ☒ No ☐ N/A	☐	Permit number:
3. Shoreland Permit	☐ Yes ☒ No ☐ N/A	☐	Permit number:
4. UIC Registration	☐ Yes ☒ No ☐ N/A	☐	Registration date:
5. Large/Small Community Well Approval	☐ Yes ☒ No ☐ N/A	☐	Approval letter date:
6. Large Groundwater Withdrawal Permit	☐ Yes ☒ No ☐ N/A	☐	Permit number:
7. Other:	☐ Yes ☒ No	☐	Permit number:

L. List all species identified by the Natural Heritage Bureau as threatened or endangered or of concern: _____

M. Using NHDES's Web GIS OneStop program (www2.des.state.nh.us/gis/onestop/), with the Surface Water Impairment layer turned on, list the impairments identified for each receiving water. If no pollutants are listed, enter "N/A." N/A

N. Did the applicant/applicant's agent have a pre-application meeting with AOT staff? ☐ Yes ☒ No
If yes, name of staff member:

O. Will blasting of bedrock be required? ☒ Yes ☐ No If yes, estimated quantity of blast rock: >5,000 cubic yards
If yes, standard blasting BMP notes must be placed on the plans, available at:
http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-10-12.pdf

NOTE: If greater than 5,000 cubic yards of blast rock will be generated, a groundwater monitoring program must be developed and submitted to NHDES. Contact AOT staff for additional detail.

11. CHECK ALL APPLICATION ATTACHMENTS THAT APPLY (SUBMIT WITH APPLICATION IN ORDER LISTED)

[1] Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the governing body of each municipality in which the project is proposed.

[2] Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the Local River Advisory Committee, if the project is within ¼ mile of a designated river.

LOOSE:

- ☒ Signed application form: des.nh.gov/organization/divisions/water/aot/index.htm (with attached proof(s) of delivery)
- ☒ Check for the application fee: des.nh.gov/organization/divisions/water/aot/fees.htm
- ☒ Color copy of a USGS map with the property boundaries outlined (1" = 2,000' scale)
- ☒ If Applicant is not the property owner, proof that the applicant will have a legal right to undertake the project on the property if a permit is issued to the applicant.

BIND IN A REPORT IN THE FOLLOWING ORDER:

- ☒ Copy of the signed application form & application checklist (des.nh.gov/organization/divisions/water/aot/index.htm)
- ☒ Copy of the check
- ☒ Copy of the USGS map with the property boundaries outlined (1" = 2,000' scale)
- ☒ Narrative of the project with a summary table of the peak discharge rate for the off-site discharge points
- ☒ Web GIS printout with the "Surface Water Impairments" layer turned on - http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx
- ☒ Web GIS printouts with the AOT screening layers turned on - http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx
- ☒ NHB letter using DataCheck Tool – www.nhdfl.org/about-forests-and-lands/bureaus/natural-heritage-bureau/
- ☒ The Web Soil Survey Map with project's watershed outlined – websoilsurvey.nrcs.usda.gov
- ☒ Aerial photograph (1" = 2,000' scale with the site boundaries outlined)
- ☒ Photographs representative of the site
- ☒ Groundwater Recharge Volume calculations (one worksheet for each permit application): des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls
- ☒ BMP worksheets (one worksheet for each treatment system): des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls
- ☒ Drainage analysis, stamped by a professional engineer (see Application Checklist for details)
- ☒ Riprap apron or other energy dissipation or stability calculations
- ☒ Site Specific Soil Survey report, stamped and with a certification note prepared by the soil scientist that the survey was done in accordance with the Site Specific Soil Mapping standards, *Site-Specific Soil Mapping Standards for NH & VT, SSSNNE Special Publication No. 3*.
- ☒ Infiltration Feasibility Report (example online) [Env-Wq 1503.08(f)(3)]
- ☒ Registration and Notification Form for Storm Water Infiltration to Groundwater (UIC Registration-for underground systems only, including drywells and trenches): (http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw_discharge)
- ☒ Inspection and maintenance manual with, if applicable, long term maintenance agreements [Env-Wq 1503.08(g)]
- ☒ Source control plan

PLANS:

- ☒ One set of design plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)
- ☒ Pre & post-development color coded soil plans on 11" x 17" (see Application Checklist for details)
- ☒ Pre & post-development drainage area plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)

100-YEAR FLOODPLAIN REPORT:

- ☒ All information required in Env-Wq 1503.09, submitted as a separate report.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

- ☐ See Checklist for Details

☒ **REVIEW APPLICATION FOR COMPLETENESS & CONFIRM INFORMATION LISTED ON THE APPLICATION IS INCLUDED WITH SUBMITTAL.**

12. REQUIRED SIGNATURES

_____ By initialing here, I acknowledge that I am required by Env-Wq 1503.20(e) to submit a copy of all approved documents to the department in PDF format on a CD within one week after permit approval.

By signing below, I certify that:

- The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief;
- I understand that the submission of false, incomplete, or misleading information constitutes grounds for the department to deny the application, revoke any permit that is granted based on the information, and/or refer the matter to the board of professional engineers established by RSA 310-A:3 if I am a professional engineer; and
- I understand that I am subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.

☐ **APPLICANT** ☐ **APPLICANT'S AGENT**:

Signature:_____ Date: _____

Name (print or type): _____ Title: _____

☐ PROPERTY OWNER ☐ PROPERTY OWNER'S AGENT:

Signature:_____ Date: _____

Name (print or type): _____ Title: _____

3. AOT APPLICATION CHECKLIST

ATTACHMENT A:
ALTERATION OF TERRAIN PERMIT APPLICATION CHECKLIST

Check the box to indicate the item has been provided or provide an explanation why the item does not apply.

DESIGN PLANS

☒ Plans printed on 34 - 36" by 22 - 24" white paper

☒ PE stamp

☒ Wetland delineation

☒ Temporary erosion control measures

☒ Treatment for all stormwater runoff from impervious surfaces such as roadways (including gravel roadways), parking areas, and non-residential roof runoff. Guidance on treatment BMPs can be found in Volume 2, Chapter 4 of the NH Stormwater Management Manual.

☒ Pre-existing 2-foot contours

☒ Proposed 2-foot contours

☒ Drainage easements protecting the drainage/treatment structures

☒ Compliance with the Wetlands Bureau, RSA 482- A http://des.nh.gov/organization/divisions/water/wetlands/index.htm. Note that artificial detention in wetlands is not allowed.

☒ Compliance with the Comprehensive Shoreland Protection Act, RSA 483-B. http://des.nh.gov/organization/divisions/water/wetlands/cspa

☐ Benches. Benching is needed if you have more than 20 feet change in elevation on a 2:1 slope, 30 feet change in elevation on a 3:1 slope, 40 feet change in elevation on a 4:1 slope.

☒ Check to see if any proposed ponds need state Dam permits.
http://des.nh.gov/organization/divisions/water/dam/documents/damdef.pdf

DETAILS

☒ Typical roadway x-section

☒ Detention basin with inverts noted on the outlet structure

☒ Stone berm level spreader

☒ Outlet protection – riprap aprons

☒ A general installation detail for an erosion control blanket

☒ Silt fences or mulch berm

☒ Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.

☐ Hay bale barriers

☒ Stone check dams

☒ Gravel construction exit

☒ Temporary sediment trap

☒ The treatment BMP's proposed

☒ Any innovative BMP's proposed

CONSTRUCTION SEQUENCE/EROSION CONTROL

☒ Note that the project is to be managed in a manner that meets the requirements and intent of RSA 430:53 and Chapter Agr 3800 relative to invasive species.

☒ Note that perimeter controls shall be installed prior to earth moving operations.

☒ Note that temporary water diversion (swales, basins, etc) must be used as necessary until areas are stabilized.

☒ Note that ponds and swales shall be installed early on in the construction sequence (before rough grading the site).

☒ Note that all ditches and swales shall be stabilized prior to directing runoff to them.

☒ Note that all roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.

☒ Note that all cut and fill slopes shall be seeded/loamed within 72 hours of achieving finished grade

☒ Note that all erosion controls shall be inspected weekly AND after every half-inch of rainfall.

☒ Note the limits on the open area allowed, see Env-Wq 1505.02 for detailed information.

Example note: The smallest practical area shall be disturbed during construction, but in no case shall exceed 5 acres at any one time before disturbed areas are stabilized.

☒ Note the definition of the word "stable"

Example note: An area shall be considered stable if one of the following has occurred:

- Base course gravels have been installed in areas to be paved.
- A minimum of 85 percent vegetated growth has been established.
- A minimum of 3 inches of non-erosive material such stone or riprap has been installed.
- Or, erosion control blankets have been properly installed.

☒ Note the limit of time an area may be exposed
Example note: All areas shall be stabilized within 45 days of initial disturbance.

☒ Provide temporary and permanent seeding specifications. (Reed canary grass is listed in the Green Book; however, this is a problematic species according to the Wetlands Bureau and therefore should not be specified)

☒ Provide winter construction notes that meet or exceed our standards.

Standard Winter Notes:

- All proposed vegetated areas that do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events.
- All ditches or swales which do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
- After October 15, incomplete road or parking surfaces, where work has stopped for the winter season, shall be protected with a minimum of 3 inches of crushed gravel per NHDOT item 304.3.

☒ Note at the end of the construction sequence that "Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway has the base course to design elevation and the associated drainage is complete and stable." – This note is applicable to single/duplex family subdivisions, when lot development is not part of the permit.

DRAINAGE ANALYSES

Please double-side 8 ½" × 11" sheets where possible but, **do not** reduce the text such that more than one page fits on one side.

☒ PE stamp

☒ Rainfall amount obtained from the Northeast Regional Climate Center- http://precip.eas.cornell.edu/. Include extreme precipitation table as obtained from the above referenced website.

☒ Drainage analyses, in the following order:

- Pre-development analysis: Drainage diagram.
- Pre-development analysis: Area Listing and Soil Listing.
- Pre-development analysis: Node listing 1-year (if applicable), 2-year, 10-year and 50-year.
- Pre-development analysis: Full summary of the 10-year storm.
- Post-development analysis: Drainage diagram.
- Post-development analysis: Area Listing and Soil Listing.
- Post-development analysis: Node listing for the 2-year, 10-year and 50-year.
- Post-development analysis: Full summary of the 10-year storm.

☒ Review the Area Listing and Soil Listing reports

- Hydrologic soil groups (HSG) match the HSGs on the soil maps provided.
- There is the same or less HSG A soil area after development (check for each HSG).
- There is the same or less "woods" cover in the post-development.
- Undeveloped land was assumed to be in "good" condition.
- The amount of impervious cover in the analyses is correct.

Note: A good check is to subtract the total impervious area used in the pre analysis from the total impervious area used in the post-analysis. For residential projects without demolition occurring, a good check is to take this change in impervious area, subtract out the roadway and divide the remaining by the number of houses/units proposed. Do these numbers make sense?

☒ Check the storage input used to model the ponds.

☒ Check to see if the artificial berms pass the 50-year storm, i.e., make sure the constructed berms on ponds are not overtopped.

☒ Check the outlet structure proposed and make sure it matches that modeled.

☒ Check to see if the total areas in the pre and post analyses are same.

☒ Confirm the correct NRCS storm type was modeled (Coos, Carroll & Grafton counties are Type II, all others Type III).

PRE- AND POST-DEVELOPMENT DRAINAGE AREA PLANS

☒ Plans printed on 34 - 36" by 22 - 24" on white paper.

☒ Submit these plans separate from the soil plans.

☒ A north arrow.

☒ A scale.

☒ Labeled subcatchments, reaches and ponds.

☒ Tc lines.

☒ A clear delineation of the subcatchment boundaries.

☒ Roadway station numbers.

☒ Culverts and other conveyance structures.

PRE AND POST-DEVELOPMENT COLOR-CODED SOIL PLANS

☒ 11" × 17"sheets suitable, as long as it is readable.

☒ Submit these plans separate from the drainage area plans.

☒ A north arrow.

☒ A scale.

☒ Name of the soil scientist who performed the survey and date the soil survey took place.

☒ 2-foot contours (5-foot contours if application is for a gravel pit) as well as other surveyed features.

☒ Delineation of the soil boundaries and wetland boundaries.

☒ Delineation of the subcatchment boundaries.

☒ Soil series symbols (e.g., 26).

☒ A key or legend which identifies each soil series symbol and its associated soil series name (e.g., 26 = Windsor).

☒ The hydrologic soil group color coding (A = Green, B = yellow, C= orange, D=red, Water=blue, & Impervious = gray).

Please note that excavation projects (e.g., gravel pits) have similar requirements to that above, however the following are common exceptions/additions:

☒ Drainage report is not needed if site does not have off-site flow.

☒ 5 foot contours allowed rather than 2 foot.

☒ No PE stamp needed on the plans.

☒ Add a note to the plans that the applicant must submit to the Department of Environmental Services a written update of the project and revised plans documenting the project status every five years from the date of the Alteration of Terrain permit.

☒ Add reclamation notes.

See NRCS publication titled: *Vegetating New Hampshire Sand and Gravel Pits* for a good resource, it is posted online at: http://des.nh.gov/organization/divisions/water/aot/categories/publications.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

☒ If project will discharge stormwater to a surface water impaired for phosphorus and/or nitrogen, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.

☒ If project will discharge stormwater to a Class A surface water or Outstanding Resource Water, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.

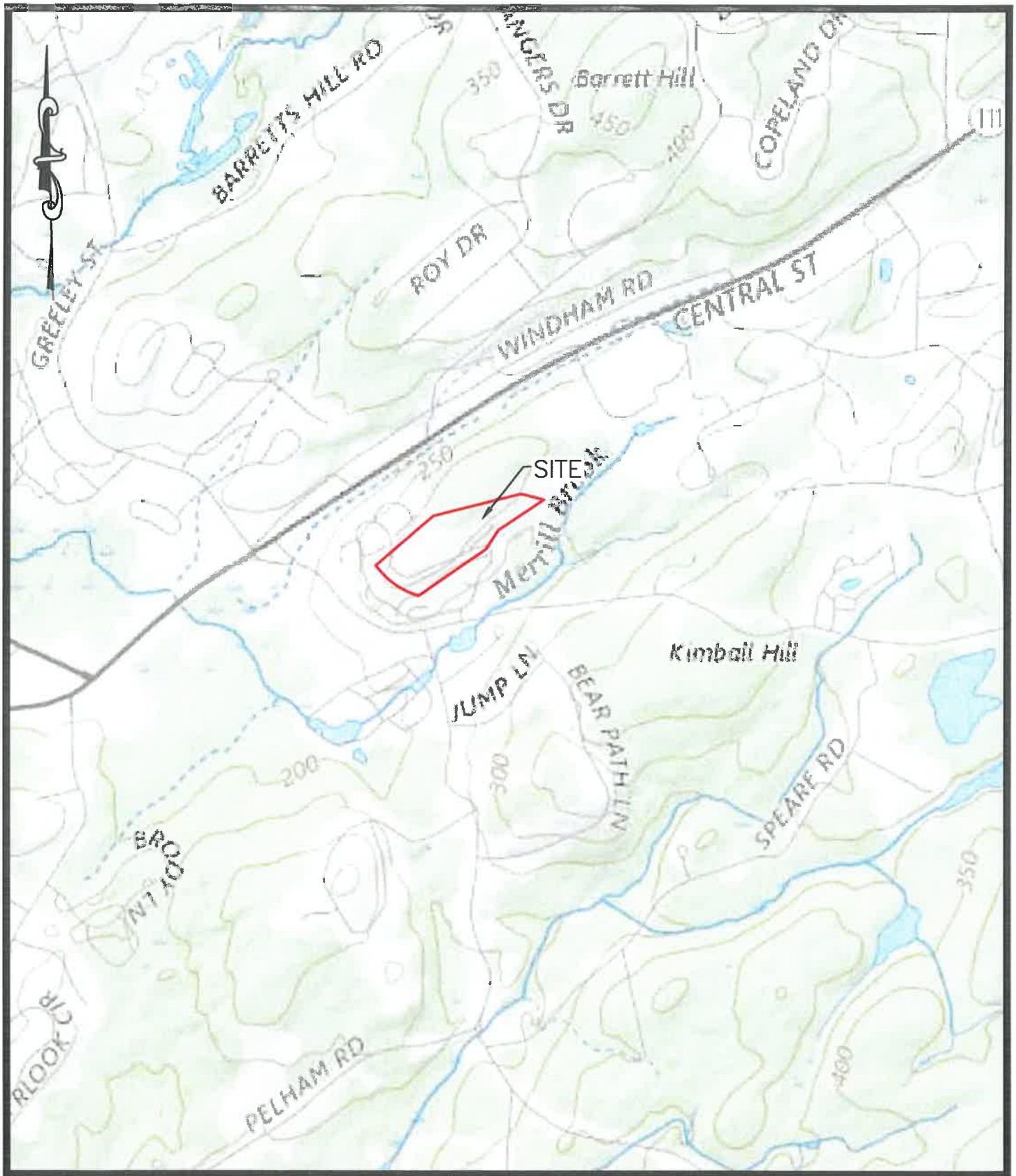
☒ If project will discharge stormwater to a lake or pond not covered previously, include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond.

☒ If project is within a Coastal/Great Bay Region community, include info required by Env-Wq 1503.08(l) if applicable.

4. COPY OF AOT APPLICATION CHECK

5. MUNICIPAL SUBMISSION: TOWN OF HUDSON

6. USGS MAP



KEACH–NORDSTROM ASSOCIATES, INC.

Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110
Phone (603) 627-2881

TITLE:

USGS EXHIBIT PREPARED FOR:

SHEPARDS HILL

MAP 117; LOT 5 - SHADOWBROOK DRIVE - HUDSON, NEW HAMPSHIRE

DATE: 5/2/2022	JOB. NO.17-0824-1
SCALE: 1" = 2,000'	SHEET 1 OF 1

7. PROJECT NARRATIVE

I. INTRODUCTION

A. Project Description

The subject project proposes the final phases of the Sheperd's Hill development in Hudson NH. The final phases will consist of 118 new duplex units on three new private roads. The new residential homes will be accessed from the existing Shadowbrook Drive as well as Clearview Circle within the development. This parcel of land has been under construction since the early 2000's. The three subject pieces of property that the units will be built on have been cleared and used as a staging and stockpile areafor the construction of the rest of the development. The area was then left unfinished, and remains this way to this day.

B. Existing Site Conditions

The proposed parcel is located along Shadowbrook Drive, Hudson, NH. The entire parcel is approximately 67 acres and contains multiple phases of development with private roads throughout. The area of focus for these three phases is approximately 13 acres. The site contains a large section of poorly drained wetlands on the north eastern side of the property. The northern portion of the property slopes towards the wetlands. The overland flow for the three portions of this development go to three distinct areas. There is an existing stormwater area on the northwestern side of the property along Route 111. The catch basins on the western side of the sections in question flow out to this stormwater area. There is also an existing stormwater area at the entrance of the Sheperd's Hill development. The middle portion of the property flows to this pond through overland flow and closed drainage. Finally, the northeastern portion of the property slopes southeast to the existing wetland.

According to the Site-specific Soil Survey Report, performed on August 5, 2020 by certified soil scientist, Cynthia Balcius, the area of development consists largely of disturbed land resulting in a soil type of Udorthents or rock outcropping where ledge was present. The property surveyed by the soil scientist has varying slopes ranging from 0-25%+. According to the National Resources Conservation Service (NRCS) soil mapping the site consists largely of, Chattfield-Hollis complexand Chatfield-Hollis rock outcrop complex soil types of slopes ranging from 0-35%.

II. Storm Drainage Analysis & Design

A. Methodology

In accordance with the Hudson Stormwater Regulations, NHDES AoT requirements and generally accepted engineering practice, the 2-year, 10-year, 25-year, and 50-year frequency storms have each been used in the various aspects of analysis and design of stormwater management considerations for the subject site. Stormwater

treatment provisions and all drainage facilities have been designed to be fully functional during a 50-year return frequency storm.

KNA utilizes HydroCAD version 10.00-22 to analyze both pre and post-development watershed characteristics. This computer software system is based largely on hydrology techniques (TR-20) developed by the Soil Conservation Service (now the Natural Resources Conservation Service). In addition, the software derives Time of Concentration values using the methodology contained within USDA-S.C.S. publication Urban Hydrology for Small Watersheds Technical Release No. 55 (TR 55).

All proposed stormwater inlet structures were designed to remain under inlet control throughout a design storm of the return frequency noted. Outlet protection for each discharging culvert was designed in accordance with the methodology for the "best management practice", in accordance with a publication entitled New Hampshire Stormwater Manual Volume 2: Post-Construction Best Management Practices Selection and Design. In addition, this publication served as the primary reference for the numerous temporary and permanent erosion control methods incorporated into the design of this project.

All design and analysis calculations performed using the referenced methodologies are attached to this report. The minimum time of concentrations used for the analysis is 6 minutes. These calculations document each catchment area, a breakdown of surface type, time of concentration, rainfall intensity, peak discharge volume, Manning's "n" value, peak velocity, and other descriptive design data for each watershed and pipe segment evaluated. In addition, the "Pre/Post Development Drainage Area Plans" graphically define and illustrate the extent of each watershed or catchment area investigated.

B. Pre-Development Drainage Conditions

The pre-development drainage model recognizes three (3) points of analysis (POA) as the appropriate points to compare pre vs. post-development peak rates of stormwater discharge.

The pre-development drainage model's POA are further described as follows:

- A Western Shadowbrook Drive Treatment Area
- B Detention Pond at Beginning of Development
- C Wetlands

For a more visual description of the information presented in this section, please refer to the attached "Pre-Development Drainage Areas Plan" attached in the appendix of this report.

C. Post-Development Drainage Conditions:

The same POA's that were identified in the pre-development scenario have been analyzed in the post-development scenario.

Overall, the design has maintained the drainage patterns to mimic the pre-development conditions. Stormwater will discharge to the same three points of analysis identified in the pre-development scenario. The improvements, however, also provide stormwater treatment and groundwater recharge for the new impervious areas created for the proposed development.

Subcatchment areas, times of concentration and analysis points have been provided showing how the pre-development and post-development areas best match to have a proper comparison.

Two Pocket Ponds (Wet Pond) are being proposed to provide detention and treatment. Pond number one is located in the middle of Trinity Circle adjacent to Shadowbrook Drive. Pond number 2 is located on the far western side of the property at the end of Clearview Circle. The systems have been designed to maintain the required permanent pool while providing treatment and has been sized to withstand a 50-year storm event.

Two Infiltration Basins are being proposed to collect clean runoff from lots located within the Clearview Circle cul-de-sac. The systems were sized to capture and infiltrate more than the required groundwater recharge volume and to not exceed capacity during the 50-year frequency storm. State regulations requires the bottom of the infiltration practice to be one foot above the seasonal high water table for water that is considered clean. The available storage volume of the infiltration systems also allows the project to meet the requirements for groundwater recharge and reduction of the runoff volume.

One bioretention pond is proposed on the northern side of Gifford Circle to collect and treat run-off from the homes along Gifford Circle as well as the road itself. The pond has been sized to withstand a 50-year storm event.

The detailed hydrologic and hydraulic relationship of each sub-catchment is described within the HydroCAD stormwater modeling, also contained in the appendix of this report.

The peak stormwater runoff rate and total storm volume for the specific storm frequencies are presented and analyzed in the subsequent summary section of this report, for the point of analysis (Table 1 & 2).

D. Summary:

The subject site complies with the Town of Hudson Stormwater Management and Erosion Control Regulations and NHDES Regulations Env-Wq 1500 in regard to stormwater treatment and groundwater recharge volume. Proposed stormwater best management practices (BMP) are designed in accordance with the New Hampshire Stormwater Manual Volume 2: Post-Construction Best Management Practices Selection and Design and BMP worksheets provided by the New Hampshire Department of Environmental Services. In addition, stormwater discharges, in terms of peak rate of runoff and total volume, are consistent with the Town of Hudson Stormwater Regulations and NHDES Regulations Env-Wq 1500. The results are reported below in Table 1 and 2.

Table 1: Peak Runoff (Env-Wq 1507.06)

Site Pre-Development vs. Post Development (Peak Discharge Rate in cfs)								
Description	**2-Year**		**10-Year**		**25-Year**		**50-Year**	
24-hr Rainfall	2.96 in/hr		4.47 in/hr		5.66 in/hr		6.77 in/hr	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
A	**4.72**	3.44	**9.13**	6.73	**12.81**	10.87	**17.16**	14.58
B	**3.14**	2.28	**6.11**	4.78	**8.58**	7.91	**11.32**	10.33
C	**5.64**	3.84	**11.93**	10.94	**17.38**	15.49	**23.00**	22.54

Table 2: Channel Protection Requirements (Env-Wq 1507.05)

Site Pre-Development vs. Post Development (Peak Discharge Rate in CFS)			
Description	**2-Year Post to 1-Year Pre**		
24-hr Rainfall	2.96 in/hr		
	Pre (1-year)	Post (2-year)	Comments
A	**3.44**	3.44	Complies with Env-Wq 1507.05 (b)(1)a & 1507.05(b)(3)
B	**2.28**	2.28	Complies with Env-Wq 1507.05 (b)(1) a & 1507.05(b)(3)
C	**3.89**	3.84	Complies with Env-Wq 1507.05 (b)(1) a & 1507.05(b)(3)

III. EROSION & SEDIMENTATION CONTROL PROVISIONS

A. Temporary Erosion Control Measures

As an integral part of the engineering design of this site, an erosion and sedimentation control plan has been developed with the intent of limiting the potential for soil loss and associated receiving water quality degradation, both during and after the construction period. As the project plans indicate, traditional temporary erosion and sedimentation control devices and practices, such as siltation fencing, block and gravel sediment filters, and seeding have been specified for use during the construction period. In preparation of these provisions, reference was made to the New Hampshire Stormwater Manual; Volume 3: Erosion and Sediment Temporary Controls During Construction. Construction details for each temporary erosion control measure and practice specified have been added to the project plans.

B. Construction Sequence

A site-specific construction sequence sensitive to limiting soil loss due to erosion and associated water quality degradation was prepared specifically for this project and is shown on the project plans. As pointed out in the erosion control notes, it is important for the contractor to recognize that proper judgment in the implementation of work will be essential if erosion is to be limited and protection of completed work is to be realized. Moreover, any specific changes in sequence and/or field conditions affecting the ability of specific erosion control measures to adequately serve their intended purpose should be reported to this office by the contractor. Furthermore, the contractor is encouraged to supplement specified erosion control measures during the construction period where and when in his/ her best judgment, additional protection is warranted.

C. Permanent Erosion Control Measures

In the design of this site, consideration was given to limiting the potential for long-term erosion of completed improvements. As a result, several permanent erosion control measures were incorporated into the site design. These provisions include:

1) Specification of a turf establishment schedule and seed mixture, utilizing materials and workmanship recognized as appropriate for the site conditions at hand;

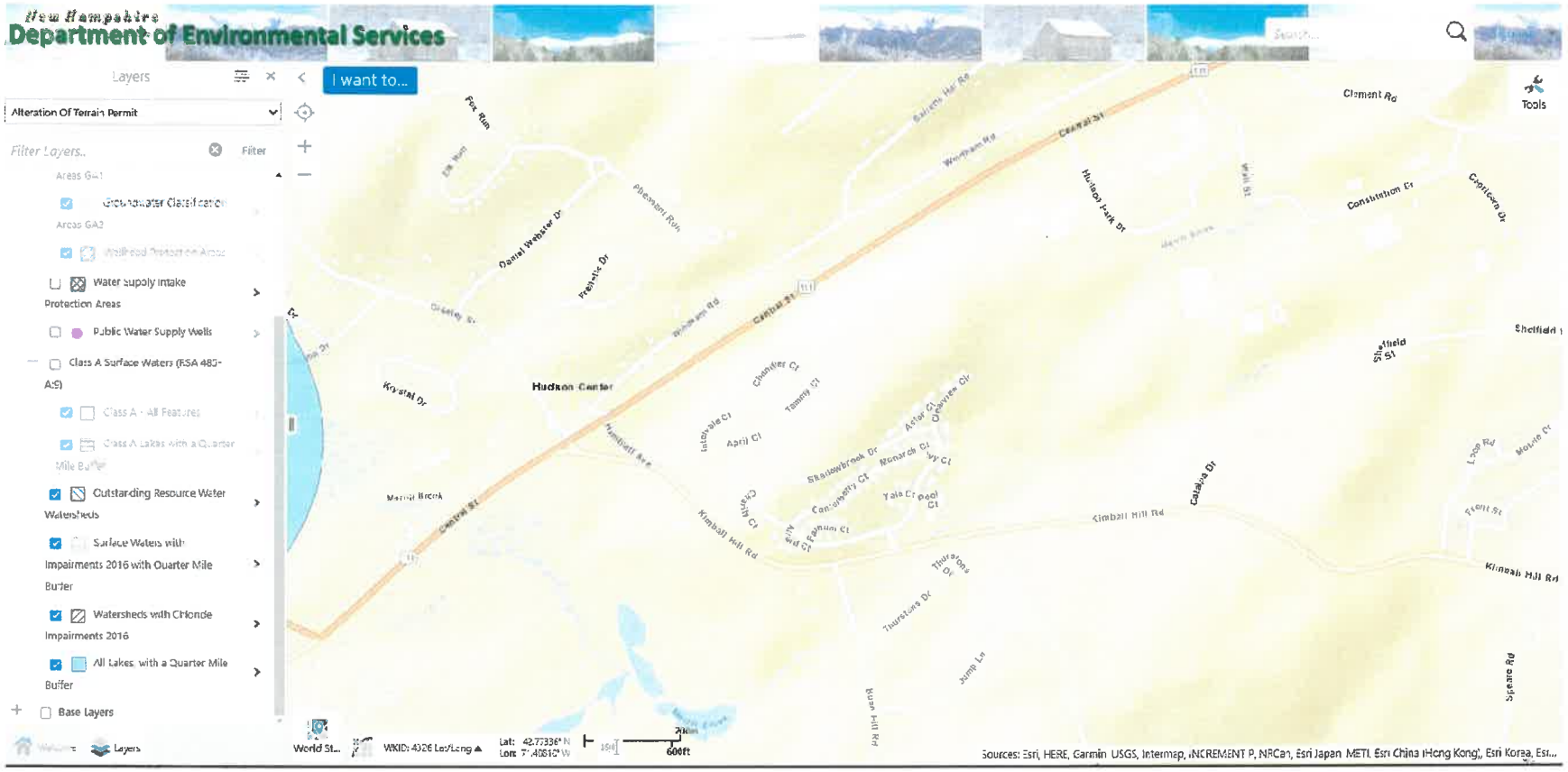
2) The design has provided catch basins with sumps to capture runoff and reduce the overland flow, thereby reducing erosion;

3) Construction of rip-rap at the outlet of the stormwater management areas;

4) Two Infiltration Ponds, two Pocket Ponds (Wet Pond) ad a bioretention pond were designed to reduce runoff and volume.

8. SURFACE WATER IMPAIRMENTS

Surface Water Impairements



9. WEB GIS FIGURES

Web GIS Figure

10. NEW HAMPSHIRE NATURAL HERITAGE INVENTORY LETTER

CONFIDENTIAL – NH Dept. of Environmental Services review

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

To: Allison Lewis
10 Commerce Park N
Suite 3
Bedford, NH 03110

From: Amy Lamb, NH Natural Heritage Bureau
Date: 8/11/2020 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB20-2305 Town: Hudson Location: Tax Maps: Map 117 Lot 5
Description: This project proposes to construct duplexes as the final phase for an already built community in Hudson NH.
cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: Please contact the NH Fish & Game Department to address wildlife concerns.

Vertebrate species	State[1]	Federal	Notes
Blanding's Turtle (*Emydoidea blandingii*)	E	--	Contact the NH Fish & Game Dept (see below).
New England Cottontail (*Sylvilagus transitionalis*)	E	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle (*Clemmys guttata*)	T	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

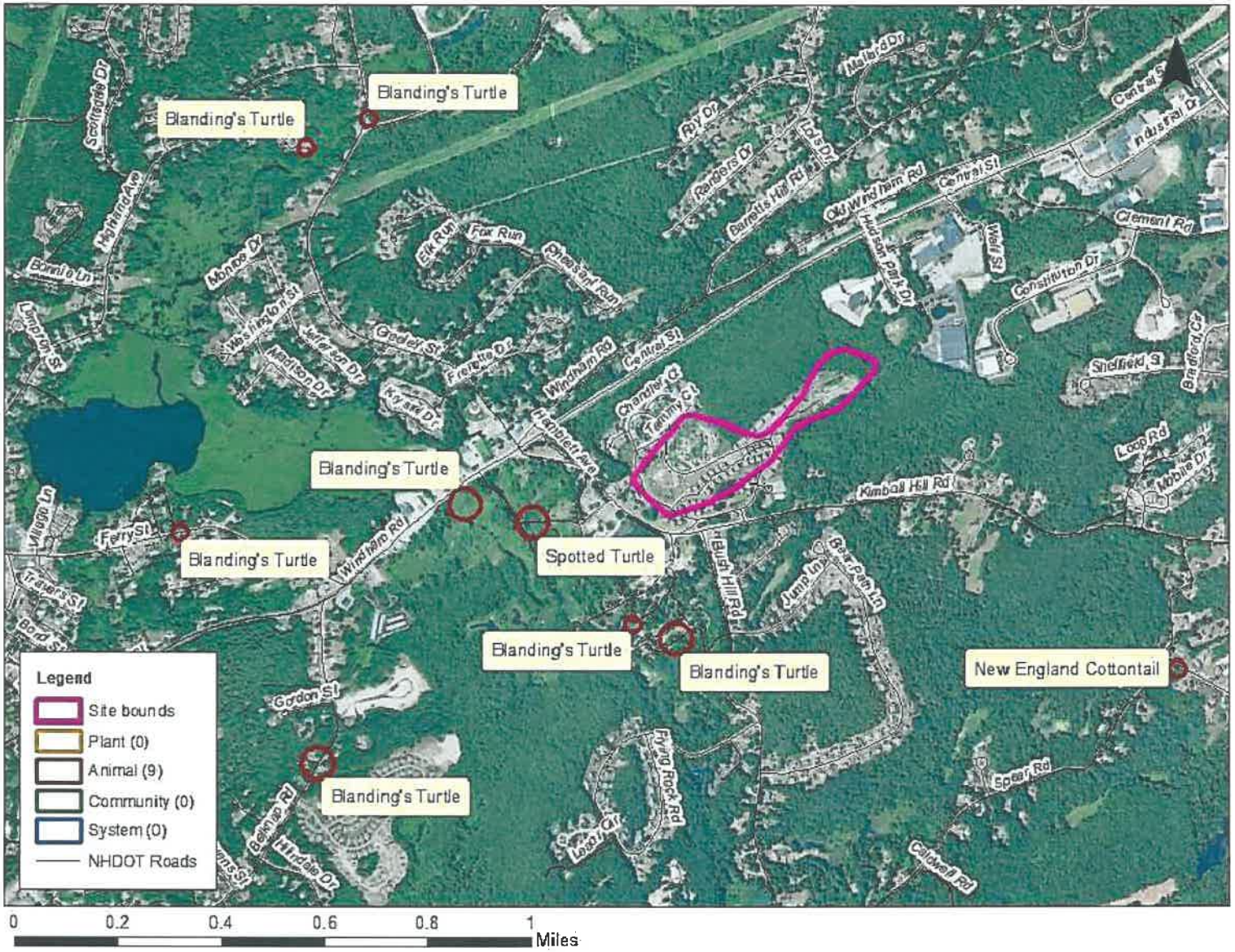
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB20-2305



New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2017: Area 14371: 1 adult observed, sex unknown.
General Area: 2017: Area 14371: Forest in city park.
General Comments: --
Management Comments: --

Location

Survey Site Name: Second Brook
Managed By:

County: Hillsborough
Town(s): Hudson
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2017: Area 14371: Benson Park, Hudson.

Dates documented

First reported: 2017-04-17 Last reported: 2017-04-17

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2016: Area 14397: 1 adult female observed, injured on road. Turtle was brought to rehabber, and released on 6/27.
General Area: Area 14397: Roadside.
General Comments: --
Management Comments: --

Location

Survey Site Name: Robinson Pond
Managed By:

County: Hillsborough
Town(s): Hudson
Size: .4 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2016: Area 14397: Near junction of Route 111, State Street, and Marshmallow Path, Hudson.

Dates documented

First reported: 2016-06-15 Last reported: 2016-06-15

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2011: Area 13149: 5 adults observed.
General Area: 2011: Area 13149: Marsh.
General Comments: --
Management Comments: --

Location

Survey Site Name: Second Brook
Managed By:

County: Hillsborough
Town(s): Hudson
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2011: Area 13149: 125 Belknap Road, Hudson.

Dates documented

First reported: 2011-05-08 Last reported: 2011-05-08

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2013: Area 13420: 1 adult observed, sex unknown.
General Area: 2013: Area 13420: Residential yard, coniferous forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Robinson Pond
Managed By:

County: Hillsborough
Town(s): Hudson
Size: .4 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2013: Area 13420: 11 Glover Brook Lane, Hudson.

Dates documented

First reported: 2013-06-17 Last reported: 2013-06-17

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2014: Area 13571: 1 adult male observed.
General Area: 2014: Area 13571: Marshy area leading to small stream. Roads surrounding the marshy area.
General Comments: --
Management Comments: --

Location

Survey Site Name: Robinson Pond
Managed By:

County: Hillsborough
Town(s): Hudson
Size: .4 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13571: Greeley Street, Hudson, at crossing of Glover Brook.

Dates documented

First reported:	2014-05-02	Last reported:	2014-05-02

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2014: Area 13895: 1 adult observed, sex unknown.
General Area: 2014: Area 13895: Pond in municipal park.
General Comments: --
Management Comments: --

Location

Survey Site Name: Second Brook
Managed By:

County: Hillsborough
Town(s): Hudson
Size: .4 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13895: Near pond in Benson Park, Hudson (42.76663, -71.40373).

Dates documented

First reported: 2014-07-17 Last reported: 2014-07-17

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2015: Area 14021: 1 adult observed, sex unknown.
General Area: 2015: Area 14021: Wetland area within urban setting.
General Comments: --
Management Comments: --

Location

Survey Site Name: Second Brook
Managed By:

County: Hillsborough
Town(s): Hudson
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2015: Area 14021: Wetland area opposite 222 Central Street, Hudson.

Dates documented

First reported: 2015-06-04 Last reported: 2015-06-04

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

New England Cottontail (*Sylvilagus transitionalis*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Rare or uncommon
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank:	Not ranked
Comments on Rank:	--
Detailed Description:	2002: 1 age and sex unknown (Obs_id 741).
General Area:	2002: Terrestrial: grassland / field (Obs_id 741).
General Comments:	2002: Results of J. Litvaitis Regional NEC Survey - 2003 (Obs_id 741).
Management Comments:	--

Location

Survey Site Name: Kimball Hill
Managed By:

County: Hillsborough
Town(s): Hudson
Size: .4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2002: Spear Rd (Obs_id 741).

Dates documented

First reported: 2002-02-12 Last reported: 2002-02-12

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2013: Area 13521: 1 adult observed, sex unknown.
General Area: 2013: Area 13521: Shrubland.
General Comments: --
Management Comments: --

Location

Survey Site Name: Merrill Brook
Managed By:

County: Hillsborough
Town(s): Hudson
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2013: Area 13521: Benson's Park, Hudson. Along Meadow View Trail approximately 100 feet west of intersection with Haselton Farm Trail.

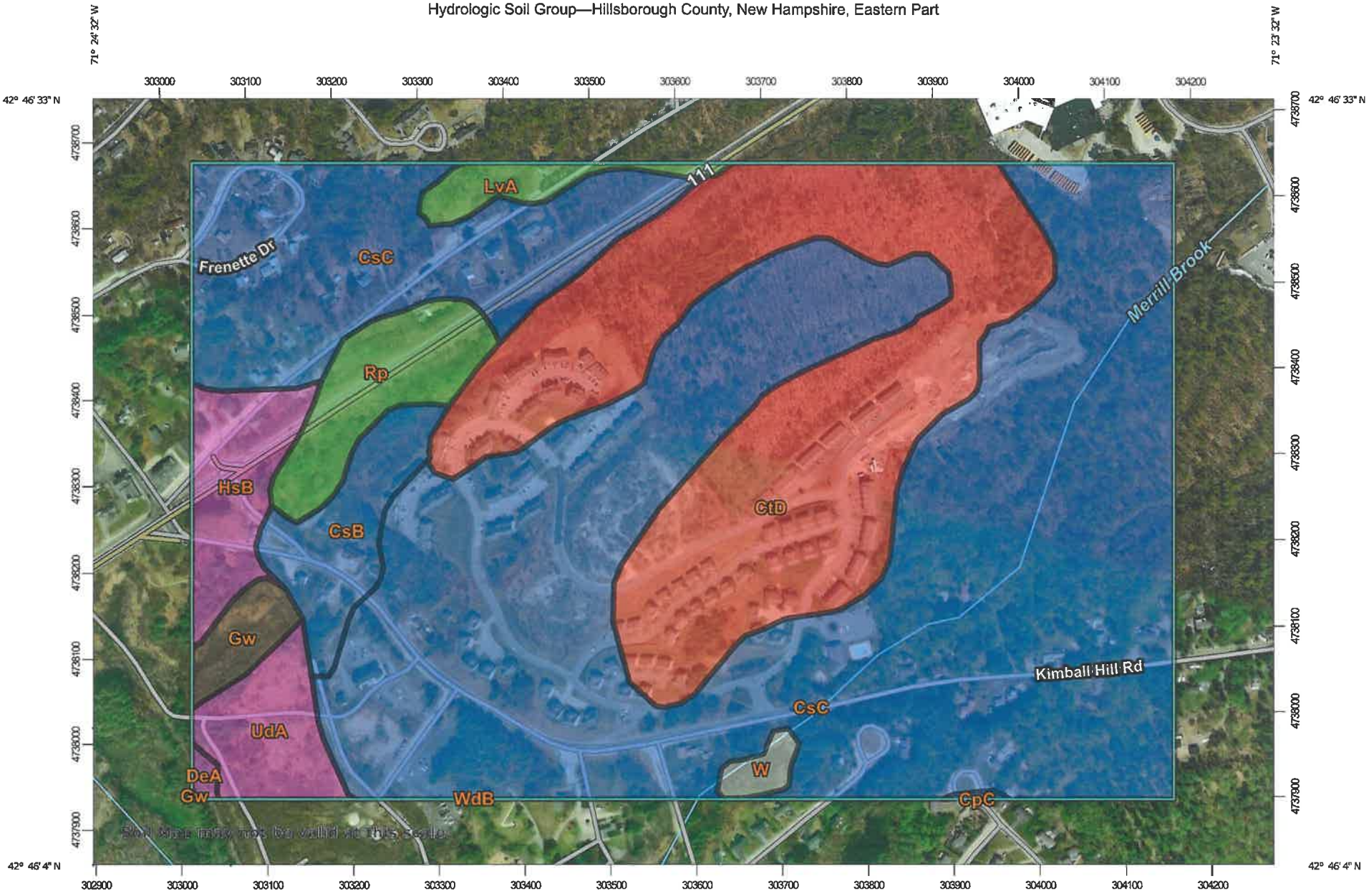
Dates documented

First reported: 2013-06-03
Last reported: 2013-06-03

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

11. WEB SOIL SURVEY



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

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil 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 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hillsborough County, New Hampshire, Eastern Part
Survey Area Data: Version 21, Sep 16, 2019

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

Date(s) aerial images were photographed: Apr 8, 2011—Jun 14, 2017

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

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CpC	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes	B	0.1	0.1%
CsB	Chatfield-Hollis complex, 3 to 8 percent slopes	B	6.6	3.2%
CsC	Chatfield-Hollis complex, 8 to 15 percent slopes, rocky	B	130.4	62.0%
CtD	Chatfield-Hollis-Rock outcrop complex, 15 to 35 percent slopes	D	47.4	22.5%
DeA	Deerfield loamy fine sand, 0 to 3 percent slopes	A	0.4	0.2%
Gw	Freetown mucky peat, 0 to 2 percent slopes	B/D	2.4	1.2%
HsB	Hinckley loamy sand, 3 to 8 percent slopes	A	6.4	3.1%
LvA	Leicester-Walpole complex stony, 0 to 3 percent slopes	A/D	2.7	1.3%
Rp	Rippowam fine sandy loam	A/D	7.1	3.4%
UdA	Udipsamments, nearly level	A	5.6	2.7%
W	Water (less than 40 acres)		1.1	0.5%
WdB	Windsor loamy sand, 3 to 8 percent slopes	A	0.0	0.0%
Totals for Area of Interest			**210.3**	**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.

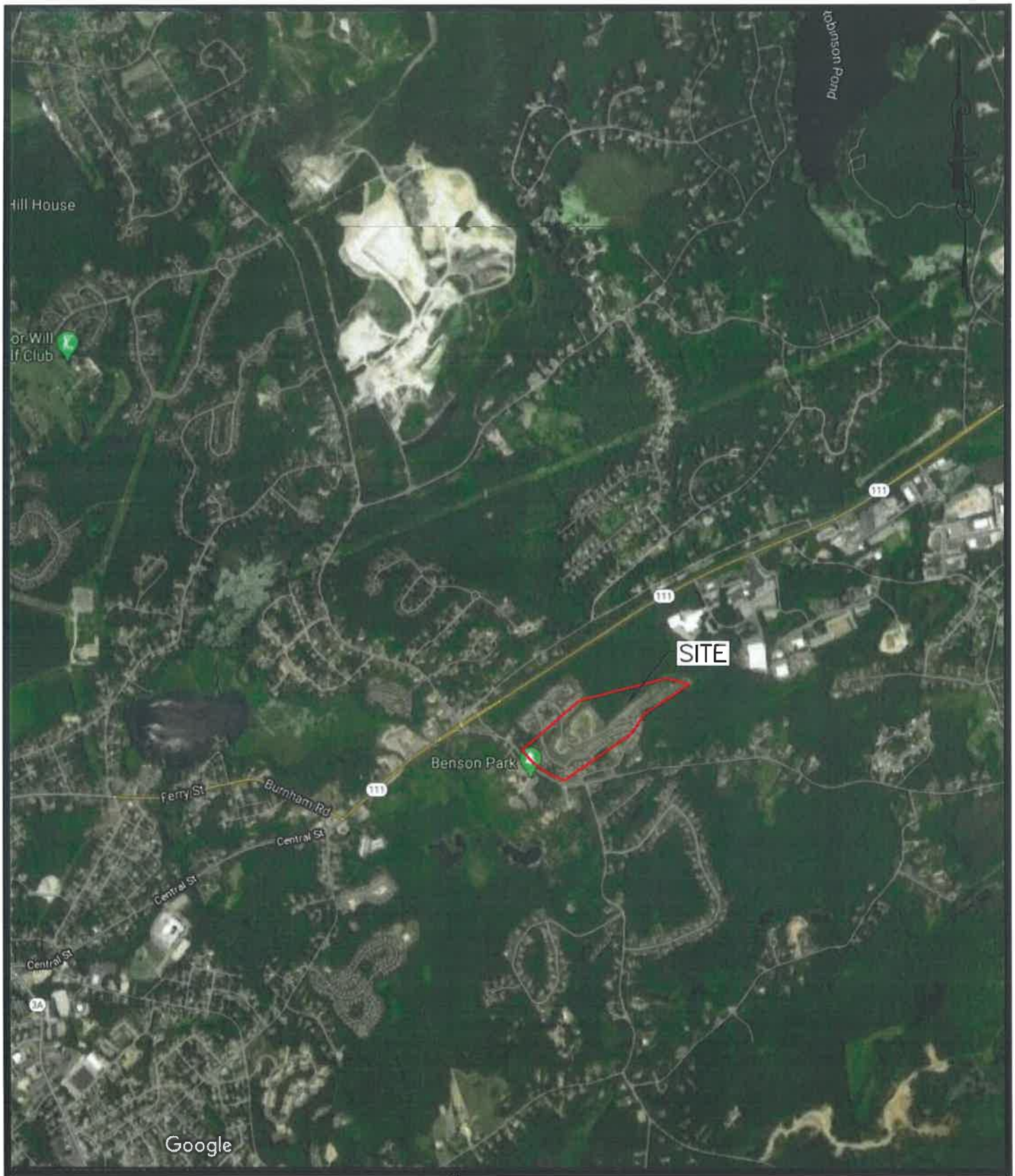
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

12. AERIAL PHOTOGRAPH



KNA KEACH–NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110
Phone (603) 627-2881

TITLE:

AERIAL EXHIBIT PREPARED FOR:

SHEPERD'S HILL

MAP 117; LOT 5 - SHADOWBROOK DRIVE - HUDSON, NEW HAMPSHIRE

DATE: 5/2/2022	JOB. NO. 17-0824-1
SCALE: 1" = 50'	SHEET 1 OF 1

13. SITE PHOTOGRAPHS

Photo No. 1: Looking north at phase two portion of the project

Photo No. 2: Looking east along Shadowbrook Drive

Photo No. 3: Looking northeast to the end of Clearview Circle and beginning of Phase 3

Photo No. 4: Looking Southwest from Shadow Brook Drive

14. GRV CALCULATION

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION (Env-Wq 1507.04)

2.71	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
0.04	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
1.85	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
0.24	inches	Rd = Weighted groundwater recharge depth	
1.088	ac-in	GRV = AI * Rd	
3,949	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12")	

Provide calculations below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

Infiltration Pond #1 recharges 1,742 CF in a 2 year storm

Infiltration Pond #2 recharges 4,530 CF in a 2 year storm

Resulting in a total site recharge of 6,272 CF

15. BMP WORKSHEETS

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.06)

Type/Node Name: **Infiltration Pond #1**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable.

yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	← yes
0.41	ac	A = Area draining to the practice	
0.15	ac	A_I = Impervious area draining to the practice	
0.37	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.38	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.16	ac-in	WQV= 1" x Rv x A	
564	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
141	cf	25% x WQV (check calc for sediment forebay volume)	
		Method of pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
5,166	cf	V = Volume[1] (attach a stage-storage table)	≥ WQV
1,214	sf	A_{SA} = Surface area of the bottom of the pond	
1.00	iph	$Ksat_{DESIGN}$ = Design infiltration rate[2]	
5.6	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ 72-hrs
280.00	feet	E_{BTM} = Elevation of the bottom of the basin	
272.77	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
272.77	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
7.23	feet	D_{SHWT} = Separation from SHWT	≥ *[3]
7.2	feet	D_{ROCK} = Separation from bedrock	≥ *[3]
	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	≥ 24"
	ft	D_T = Depth of trench, if trench proposed	4 - 10 ft
	Yes/No	If a trench or underground system is proposed, has observation well been provided?	←yes
		If a trench is proposed, does materialmeet Env-Wq 1508.06(k)(2) requirements.[4]	← yes
yes	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← yes
3.0	:1	If a basin is proposed, pond side slopes.	≥3:1
280.74	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
281.24	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
282.00	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	← yes
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← yes

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

Stage-Area-Storage for Pond 30P: Infiltration Pond #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
280.00	1,214	0
280.02	1,241	25
280.04	1,269	50
280.06	1,296	75
280.08	1,324	102
280.10	1,351	128
280.12	1,378	156
280.14	1,406	183
280.16	1,433	212
280.18	1,460	241
280.20	1,488	270
280.22	1,515	300
280.24	1,543	331
280.26	1,570	362
280.28	1,597	394
280.30	1,625	426
280.32	1,652	459
280.34	1,679	492
280.36	1,707	526
280.38	1,734	560
280.40	1,762	595
280.42	1,789	631
280.44	1,816	667
280.46	1,844	703
280.48	1,871	740
280.50	1,899	778
280.52	1,926	816
280.54	1,953	855
280.56	1,981	894
280.58	2,008	934
280.60	2,035	975
280.62	2,063	1,016
280.64	2,090	1,057
280.66	2,118	1,099
280.68	2,145	1,142
280.70	2,172	1,185
280.72	2,200	1,229
280.74	2,227	1,273
280.76	2,254	1,318
280.78	2,282	1,363
280.80	2,309	1,409
280.82	2,337	1,456
280.84	2,364	1,503
280.86	2,391	1,550
280.88	2,419	1,598
280.90	2,446	1,647
280.92	2,473	1,696
280.94	2,501	1,746
280.96	2,528	1,796
280.98	2,556	1,847
281.00	2,583	1,899
281.02	2,610	1,950
281.04	2,638	2,003
281.06	2,665	2,056
281.08	2,693	2,110
281.10	2,720	2,164
281.12	2,747	2,218
281.14	2,775	2,274
281.16	2,802	2,329
281.18	2,829	2,386
281.20	2,857	2,442
281.22	2,884	2,500
281.24	2,912	2,558
281.26	2,939	2,616
281.28	2,966	2,675
281.30	2,994	2,735
281.32	3,021	2,795
281.34	3,048	2,856
281.36	3,076	2,917
281.38	3,103	2,979
281.40	3,131	3,041
281.42	3,158	3,104
281.44	3,185	3,168
281.46	3,213	3,232
281.48	3,240	3,296
281.50	3,268	3,361
281.52	3,295	3,427
281.54	3,322	3,493
281.56	3,350	3,560
281.58	3,377	3,627
281.60	3,404	3,695
281.62	3,432	3,763
281.64	3,459	3,832
281.66	3,487	3,901
281.68	3,514	3,971
281.70	3,541	4,042
281.72	3,569	4,113
281.74	3,596	4,185
281.76	3,623	4,257
281.78	3,651	4,330
281.80	3,678	4,403
281.82	3,706	4,477
281.84	3,733	4,551
281.86	3,760	4,626
281.88	3,788	4,702
281.90	3,815	4,778
281.92	3,842	4,854
281.94	3,870	4,931
281.96	3,897	5,009
281.98	3,925	5,087
282.00	**3,952**	**5,166**

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.06)

Type/Node Name: **Infiltration Pond #2**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable.

yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	← yes
1.13	ac	A = Area draining to the practice	
0.44	ac	A_I = Impervious area draining to the practice	
0.39	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.40	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.45	ac-in	WQV= 1" x Rv x A	
1,643	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
411	cf	25% x WQV (check calc for sediment forebay volume)	
		Method of pretreatment? (not required for clean or roof runoff)	
	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
7,938	cf	V = Volume[1] (attach a stage-storage table)	≥ WQV
3,030	sf	A_{SA} = Surface area of the bottom of the pond	
1.00	iph	$Ksat_{DESIGN}$ = Design infiltration rate[2]	
6.5	hours	I_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ 72-hrs
274.00	feet	E_{BTM} = Elevation of the bottom of the basin	
272.25	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
272.25	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.75	feet	D_{SHWT} = Separation from SHWT	≥ *[3]
1.8	feet	D_{ROCK} = Separation from bedrock	≥ *[3]
	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	≥ 24"
	ft	D_T = Depth of trench, if trench proposed	4 - 10 ft
	Yes/No	If a trench or underground system is proposed, has observation well been provided?	←yes
		If a trench is proposed, does materialmeet Env-Wq 1508.06(k)(2) requirements.[4]	← yes
yes	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← yes
3.0	:1	If a basin is proposed, pond side slopes.	≥3:1
275.12	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
275.74	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
276.00	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	← yes
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← yes

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

Stage-Area-Storage for Pond 31P: Infiltration Pond #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
274.00	3,030	0
274.05	3,077	153
274.10	3,124	308
274.15	3,171	465
274.20	3,218	625
274.25	3,265	787
274.30	3,312	951
274.35	3,359	1,118
274.40	3,406	1,287
274.45	3,453	1,459
274.50	3,500	1,632
274.55	3,546	1,809
274.60	3,593	1,987
274.65	3,640	2,168
274.70	3,687	2,351
274.75	3,734	2,537
274.80	3,781	2,724
274.85	3,828	2,915
274.90	3,875	3,107
274.95	3,922	3,302
275.00	3,969	3,500
275.05	4,016	3,699
275.10	4,063	3,901
275.15	4,110	4,105
275.20	4,157	4,312
275.25	4,204	4,521
275.30	4,251	4,732
275.35	4,298	4,946
275.40	4,345	5,162
275.45	4,392	5,381
275.50	4,439	5,601
275.55	4,485	5,824
275.60	4,532	6,050
275.65	4,579	6,278
275.70	4,626	6,508
275.75	4,673	6,740
275.80	4,720	6,975
275.85	4,767	7,212
275.90	4,814	7,452
275.95	4,861	7,694
276.00	**4,908**	**7,938**
276.05	4,908	7,938
276.10	4,908	7,938
276.15	4,908	7,938
276.20	4,908	7,938
276.25	4,908	7,938
276.30	4,908	7,938
276.35	4,908	7,938
276.40	4,908	7,938

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

STORMWATER POND DESIGN CRITERIA

Env-Wq 1508.03

Type/Node Name: **Pocket Pond #1**

Enter the type of stormwater pond (e.g., Wet Pond) and the node name in the drainage analysis, if applicable.

3.42	ac	A = Area draining to the practice	
1.59	ac	A_I = Impervious area draining to the practice	
0.46	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.47	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
1.60	ac-in	WQV= 1" x Rv x A	
5,815	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
582	cf	10% x WQV (check calc for sediment forebay and micropool volume)	
2,908	cf	50% x WQV (check calc for extended detention volume)	
840	cf	V_{SED} = Sediment forebay volume	**≥ 10%WQV**
5,826	cf	V_{PP} = Permanent pool volume (volume below the lowest invert of the outlet structure) Attach stage-storage table.	
no	cf	Extended Detention?[1]	**≤ 50% WQV**
-		V_{ED} = Volume of extended detention (if "yes" is given in box above)	
		E_{ED} = Elevation of WQV if "yes" is given in box above[2]	
-	cfs	$2Q_{avg}$ = 2* V_{ED} / 24 hrs * (1hr / 3600 sec) (used to check against Q_{EDmax} below)	
-	cfs	Q_{EDmax} = Discharge at the E_{ED} (attach stage-discharge table)	**< $2Q_{avg}$**
-	hours	T_{ED} = Drawdown time of extended detention = $2V_{ED}/Q_{EDmax}$	**≥ 24-hrs**
3.00	:1	Pond side slopes	**≥3:1**
311.27	ft	Elevation of seasonal high water table	
309.79	ft	Elevation of lowest pond outlet	
306.27	ft	Max floor = Maximum elevation of pond bottom (ft)	
301.79	ft	Minimum floor (to maintain depth at less than 8')	**≤ 8 ft**
306.00	ft	Elevation of pond floor[3]	**≤ Max floor and > Min floor**
88.00	ft	Length of the flow path between the inlet and outlet at mid-depth	
26.25	ft	Average width ([average of the top width + average bottom width]/2)	
3.35	:1	Length to average width ratio	**≥ 3:1**
yes	Yes/No	Is the perimeter curvilinear.	**← Yes**
yes	Yes/No	Are the inlet and outlet located as far apart as possible.	**← Yes**
	Yes/No	Is there a manually-controlled drain to dewater the pond over a 24hr period?	
If no state why:			
grate		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of <6")?	
313.17	ft	Peak elevation of the 50-year storm event	
313.50	ft	Berm elevation of the pond	
YES		50 peak elevation ≤ the berm elevation?	**←yes**

1. If the entire WQV is stored in the perm. pool, there is no extended det., and the following five lines do not apply.

2. This is the elevation of WQV **if** the hydrologic analysis is set up to include the permanent pool storage in the node description.

3. If the pond floor elevation is above the max floor elev., a hydrologic budget must be submitted to demonstrate that a minimum depth of 3 feet can be maintained. (First check whether a revised "lowest pond outlet" elev. will resolve the issue.)

Designer's Notes:

Stage-Area-Storage for Pond 2P: Pocket Pond #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
306.00	306	0
306.10	347	33
306.20	391	69
306.30	437	111
306.40	486	157
306.50	537	208
306.60	591	264
306.70	647	326
306.80	706	394
306.90	768	468
307.00	832	548
307.10	899	634
307.20	968	727
307.30	1,040	828
307.40	1,115	936
307.50	1,192	1,051
307.60	1,272	1,174
307.70	1,354	1,305
307.80	1,439	1,445
307.90	1,526	1,593
308.00	1,616	1,750
308.10	1,683	1,915
308.20	1,750	2,087
308.30	1,820	2,265
308.40	1,890	2,451
308.50	1,962	2,643
308.60	2,035	2,843
308.70	2,110	3,050
308.80	2,186	3,265
308.90	2,263	3,487
309.00	2,341	3,718
309.10	2,421	3,956
309.20	2,503	4,202
309.30	2,585	4,456
309.40	2,669	4,719
309.50	2,754	4,990
309.60	2,841	5,270
309.70	2,929	5,559
309.80	3,018	5,856
309.90	3,109	6,162
310.00	3,201	6,478
310.10	3,349	6,805
310.20	3,500	7,148
310.30	3,654	7,505
310.40	3,811	7,878
310.50	3,972	8,268
310.60	4,136	8,673
310.70	4,304	9,095
310.80	4,475	9,534
310.90	4,649	9,990
311.00	4,827	10,464
311.10	5,008	10,956
311.20	5,192	11,465
311.30	5,379	11,994
311.40	5,570	12,541
311.50	5,764	13,108
311.60	5,962	13,694
311.70	6,163	14,301
311.80	6,367	14,927
311.90	6,574	15,574
312.00	6,785	16,242
312.10	6,914	16,927
312.20	7,044	17,625
312.30	7,175	18,336
312.40	7,307	19,060
312.50	7,441	19,797
312.60	7,576	20,548
312.70	7,712	21,312
312.80	7,849	22,090
312.90	7,988	22,882
313.00	8,127	23,688
313.10	8,268	24,508
313.20	8,410	25,342
313.30	8,554	26,190
313.40	8,698	27,053
313.50	**8,844**	**27,930**

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

STORMWATER POND DESIGN CRITERIA

Env-Wq 1508.03

Type/Node Name: **Pocket Pond #2**

Enter the type of stormwater pond (e.g., Wet Pond) and the node name in the drainage analysis, if applicable.

6.15	ac	A = Area draining to the practice	
1.38	ac	A_I = Impervious area draining to the practice	
0.22	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.25	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
1.55	ac-in	WQV= 1" x Rv x A	
5,625	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
562	cf	10% x WQV (check calc for sediment forebay and micropool volume)	
2,812	cf	50% x WQV (check calc for extended detention volume)	
729	cf	V_{SED} = Sediment forebay volume	**≥ 10%WQV**
5,675	cf	V_{PP} = Permanent pool volume (volume below the lowest invert of the outlet structure) Attach stage-storage table.	
no	cf	Extended Detention?[1]	**≤ 50% WQV**
-		V_{ED} = Volume of extended detention (if "yes" is given in box above)	
		E_{ED} = Elevation of WQV if "yes" is given in box above[2]	
-	cfs	$2Q_{avg}$ = 2* V_{ED} / 24 hrs * (1hr / 3600 sec) (used to check against Q_{EDmax} below)	
	cfs	Q_{EDmax} = Discharge at the E_{ED} (attach stage-discharge table)	**< $2Q_{avg}$**
-	hours	T_{ED} = Drawdown time of extended detention = $2V_{ED}/Q_{EDmax}$	**≥ 24-hrs**
3.00	:1	Pond side slopes	**≥3:1**
283.97	ft	Elevation of seasonal high water table	
271.98	ft	Elevation of lowest pond outlet	
268.98	ft	Max floor = Maximum elevation of pond bottom (ft)	
263.98	ft	Minimum floor (to maintain depth at less than 8')	**≤ 8 ft**
268.00	ft	Elevation of pond floor[3]	**≤ Max floor and > Min floor**
116.00	ft	Length of the flow path between the inlet and outlet at mid-depth	
32.00	ft	Average width ([average of the top width + average bottom width]/2)	
3.63	:1	Length to average width ratio	**≥ 3:1**
yes	Yes/No	Is the perimeter curvilinear.	**← Yes**
yes	Yes/No	Are the inlet and outlet located as far apart as possible.	**← Yes**
	Yes/No	Is there a manually-controlled drain to dewater the pond over a 24hr period?	
If no state why:			
grate		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of <6")?	
275.66	ft	Peak elevation of the 50-year storm event	
276.00	ft	Berm elevation of the pond	
YES		50 peak elevation ≤ the berm elevation?	**←yes**

1. If the entire WQV is stored in the perm. pool, there is no extended det., and the following five lines do not apply.

2. This is the elevation of WQV **if** the hydrologic analysis is set up to include the permanent pool storage in the node description.

3. If the pond floor elevation is above the max floor elev., a hydrologic budget must be submitted to demonstrate that a minimum depth of 3 feet can be maintained. (First check whether a revised "lowest pond outlet" elev. will resolve the issue.)

Designer's Notes:

Stage-Area-Storage for Pond 3P: Pocket Pond #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
268.00	408	0
268.10	446	43
268.20	484	89
268.30	523	140
268.40	561	194
268.50	599	252
268.60	637	314
268.70	675	379
268.80	714	449
268.90	752	522
269.00	790	599
269.10	836	680
269.20	882	766
269.30	928	857
269.40	974	952
269.50	1,020	1,052
269.60	1,066	1,156
269.70	1,112	1,265
269.80	1,158	1,378
269.90	1,204	1,496
270.00	1,250	1,619
270.10	1,331	1,748
270.20	1,411	1,885
270.30	1,492	2,030
270.40	1,573	2,184
270.50	1,653	2,345
270.60	1,734	2,514
270.70	1,815	2,692
270.80	1,895	2,877
270.90	1,976	3,071
271.00	2,057	3,272
271.10	2,137	3,482
271.20	2,218	3,700
271.30	2,298	3,925
271.40	2,379	4,159
271.50	2,460	4,401
271.60	2,540	4,651
271.70	2,621	4,909
271.80	2,702	5,176
271.90	2,782	5,450
272.00	2,863	5,732
272.10	2,958	6,023
272.20	3,053	6,324
272.30	3,148	6,634
272.40	3,243	6,953
272.50	3,338	7,282
272.60	3,433	7,621
272.70	3,528	7,969
272.80	3,623	8,326
272.90	3,718	8,693
273.00	3,813	9,070
273.10	3,907	9,456
273.20	4,002	9,851
273.30	4,097	10,256
273.40	4,192	10,671
273.50	4,287	11,095
273.60	4,382	11,528
273.70	4,477	11,971
273.80	4,572	12,424
273.90	4,667	12,886
274.00	4,762	13,357
274.10	4,869	13,839
274.20	4,975	14,331
274.30	5,082	14,834
274.40	5,188	15,347
274.50	5,295	15,871
274.60	5,402	16,406
274.70	5,508	16,952
274.80	5,615	17,508
274.90	5,721	18,075
275.00	5,828	18,652
275.10	5,935	19,240
275.20	6,041	19,839
275.30	6,148	20,448
275.40	6,254	21,068
275.50	6,361	21,699
275.60	6,468	22,341
275.70	6,574	22,993
275.80	6,681	23,656
275.90	6,787	24,329
276.00	**6,894**	**25,013**

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **Bioretention pond #1**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
2.51	ac	A = Area draining to the practice	
1.35	ac	A_I = Impervious area draining to the practice	
0.54	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.53	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
1.34	ac-in	WQV= 1" x Rv x A	
4,866	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
1,217	cf	25% x WQV (check calc for sediment forebay volume)	
3,650	cf	75% x WQV (check calc for surface sand filter volume)	
Forebay		Method of Pretreatment? (not required for clean or roof runoff)	
1,248	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	≥ 25%WQV
Calculate time to drain if system IS NOT underdrained:			
	sf	A_{SA} = Surface area of the practice	
	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
	Yes/No	If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ 72-hrs
Calculate time to drain if system IS underdrained:			
292.03	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.68	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
3.98	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	≤ 72-hrs
286.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
285.50	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
288.60	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
288.60	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	≥ 1'
(2.10)	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	≥ 1'
(2.10)	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	≥ 1'
293.52	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
294.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	← yes
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	< 10 ac
	cf	V = Volume of storage[3] (attach a stage-storage table)	≥ 75%WQV
	inches	D_{FC} = Filter course thickness	18", or 24" if within GPA
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	← yes

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	← yes
11,051	cf	V = Volume of storage[3] (attach a stage-storage table)	≥ WQV
18.0	inches	D_{FC} = Filter course thickness	18", or 24" if within GPA
Sheet 49		Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	≥ 3:1
Sheet 49		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	≤ 5:1
	inches	D_{FC} = Filter course thickness	12", or 18" if within GPA mod. 304.1 (see spec)
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.
2. See lines 34, 40 and 48 for required depths of filter media.
3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Stage-Area-Storage for Pond 1P: Bioretention Pond #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
288.00	349	0
288.10	382	37
288.20	416	76
288.30	449	120
288.40	482	166
288.50	516	216
288.60	549	269
288.70	582	326
288.80	616	386
288.90	649	449
289.00	683	516
289.10	716	586
289.20	749	659
289.30	783	736
289.40	816	815
289.50	849	899
289.60	883	985
289.70	916	1,075
289.80	949	1,168
289.90	983	1,265
290.00	1,016	1,365
290.10	1,059	1,469
290.20	1,101	1,577
290.30	1,144	1,689
290.40	1,186	1,805
290.50	1,229	1,926
290.60	1,271	2,051
290.70	1,313	2,180
290.80	1,356	2,314
290.90	1,398	2,452
291.00	1,441	2,594
291.10	1,590	2,745
291.20	1,739	2,911
291.30	1,888	3,093
291.40	2,037	3,289
291.50	2,186	3,500
291.60	2,335	3,726
291.70	2,484	3,967
291.80	2,633	4,223
291.90	2,782	4,494
292.00	2,931	4,780
292.10	3,005	5,076
292.20	3,078	5,380
292.30	3,152	5,692
292.40	3,225	6,011
292.50	3,299	6,337
292.60	3,373	6,671
292.70	3,446	7,012
292.80	3,520	7,360
292.90	3,593	7,715
293.00	3,667	8,079
293.10	3,741	8,449
293.20	3,814	8,827
293.30	3,888	9,212
293.40	3,961	9,604
293.50	4,035	10,004
293.60	4,109	10,411
293.70	4,182	10,826
293.80	4,256	11,248
293.90	4,329	11,677
294.00	**4,403**	**12,114**

16. EXTREME PRECIPITATION TABLES

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	New Hampshire
Location	
Longitude	71.401 degrees West
Latitude	42.771 degrees North
Elevation	0 feet
Date/Time	Thu, 10 Sep 2020 09:06:00 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.27	0.42	0.52	0.68	0.85	1.07	**1yr**	0.73	1.01	1.24	1.56	1.96	2.48	2.71	**1yr**	2.19	2.61	3.04	3.72	4.33	**1yr**
2yr	0.33	0.51	0.63	0.84	1.05	1.32	**2yr**	0.91	1.21	1.53	1.91	2.37	2.96	3.28	**2yr**	2.62	3.16	3.66	4.38	4.98	**2yr**
5yr	0.39	0.61	0.77	1.03	1.31	1.67	**5yr**	1.13	1.52	1.93	2.42	3.01	3.74	4.18	**5yr**	3.31	4.02	4.65	5.51	6.23	**5yr**
10yr	0.44	0.69	0.88	1.19	1.55	1.99	**10yr**	1.34	1.80	2.32	2.90	3.61	4.47	5.02	**10yr**	3.96	4.83	5.56	6.55	7.38	**10yr**
25yr	0.52	0.83	1.06	1.46	1.94	2.51	**25yr**	1.67	2.25	2.93	3.68	4.59	5.66	6.40	**25yr**	5.01	6.15	7.06	8.23	9.25	**25yr**
50yr	0.59	0.94	1.21	1.70	2.30	3.00	**50yr**	1.98	2.66	3.52	4.43	5.51	6.77	7.69	**50yr**	5.99	7.39	8.47	9.79	10.97	**50yr**
100yr	0.68	1.10	1.41	2.00	2.73	3.58	**100yr**	2.35	3.16	4.20	5.30	6.59	8.10	9.25	**100yr**	7.17	8.89	10.15	11.66	13.01	**100yr**
200yr	0.77	1.26	1.63	2.34	3.24	4.28	**200yr**	2.79	3.75	5.04	6.36	7.90	9.70	11.13	**200yr**	8.58	10.70	12.17	13.88	15.44	**200yr**
500yr	0.93	1.53	1.99	2.90	4.06	5.41	**500yr**	3.50	4.70	6.39	8.09	10.05	12.31	14.22	**500yr**	10.90	13.67	15.49	17.48	19.37	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.35	0.43	0.57	0.71	0.81	**1yr**	0.61	0.79	1.07	1.31	1.67	2.24	2.55	**1yr**	1.98	2.45	2.70	3.02	3.80	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.20	**2yr**	0.86	1.17	1.37	1.79	2.30	2.87	3.18	**2yr**	2.54	3.06	3.55	4.26	4.84	**2yr**
5yr	0.36	0.55	0.69	0.94	1.20	1.42	**5yr**	1.04	1.39	1.62	2.11	2.69	3.51	3.83	**5yr**	3.10	3.69	4.25	5.10	5.77	**5yr**
10yr	0.39	0.61	0.75	1.05	1.36	1.61	**10yr**	1.17	1.57	1.83	2.38	3.04	4.05	4.41	**10yr**	3.59	4.24	4.87	5.83	6.57	**10yr**
25yr	0.45	0.68	0.85	1.21	1.59	1.88	**25yr**	1.38	1.84	2.15	2.80	3.53	4.91	5.32	**25yr**	4.34	5.11	5.84	6.98	7.76	**25yr**
50yr	0.49	0.74	0.93	1.33	1.79	2.14	**50yr**	1.55	2.09	2.44	3.19	3.97	5.69	6.15	**50yr**	5.03	5.91	6.72	8.00	8.79	**50yr**
100yr	0.54	0.81	1.01	1.47	2.01	2.42	**100yr**	1.74	2.37	2.76	3.56	4.47	6.14	7.12	**100yr**	5.44	6.85	7.74	9.19	9.93	**100yr**
200yr	0.59	0.89	1.13	1.63	2.27	2.75	**200yr**	1.96	2.69	3.11	4.04	5.06	7.03	8.27	**200yr**	6.22	7.95	8.94	10.57	11.24	**200yr**
500yr	0.67	1.00	1.29	1.87	2.66	3.26	**500yr**	2.29	3.19	3.67	4.79	5.98	8.41	10.14	**500yr**	7.45	9.75	10.82	12.73	13.24	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.31	0.47	0.58	0.78	0.96	1.12	**1yr**	0.83	1.09	1.27	1.65	2.09	2.67	2.87	**1yr**	2.37	2.76	3.41	4.17	4.80	**1yr**
2yr	0.35	0.54	0.67	0.90	1.11	1.31	**2yr**	0.96	1.28	1.49	1.92	2.47	3.08	3.43	**2yr**	2.73	3.30	3.80	4.54	5.20	**2yr**
5yr	0.44	0.67	0.83	1.14	1.45	1.66	**5yr**	1.26	1.63	1.90	2.43	3.05	4.03	4.59	**5yr**	3.56	4.41	5.04	5.97	6.71	**5yr**
10yr	0.53	0.81	1.00	1.40	1.81	2.03	**10yr**	1.56	1.98	2.29	2.91	3.62	4.99	5.73	**10yr**	4.41	5.51	6.26	7.35	8.22	**10yr**
25yr	0.68	1.04	1.29	1.84	2.42	2.63	**25yr**	2.09	2.57	2.96	3.69	4.52	6.62	7.70	**25yr**	5.86	7.40	8.35	9.67	10.79	**25yr**
50yr	0.83	1.26	1.56	2.25	3.03	3.21	**50yr**	2.61	3.14	3.60	4.42	5.35	8.20	9.63	**50yr**	7.26	9.26	10.35	11.89	13.25	**50yr**
100yr	1.01	1.52	1.91	2.76	3.78	3.92	**100yr**	3.26	3.83	4.38	5.37	6.33	10.76	12.03	**100yr**	9.52	11.57	12.84	14.65	16.30	**100yr**
200yr	1.23	1.85	2.34	3.39	4.73	4.77	**200yr**	4.08	4.66	5.31	6.44	7.51	13.46	15.01	**200yr**	11.91	14.44	15.91	18.05	20.06	**200yr**
500yr	1.61	2.39	3.08	4.47	6.36	6.19	**500yr**	5.49	6.05	6.87	8.19	9.39	18.11	20.11	**500yr**	16.03	19.33	21.15	23.77	26.39	**500yr**

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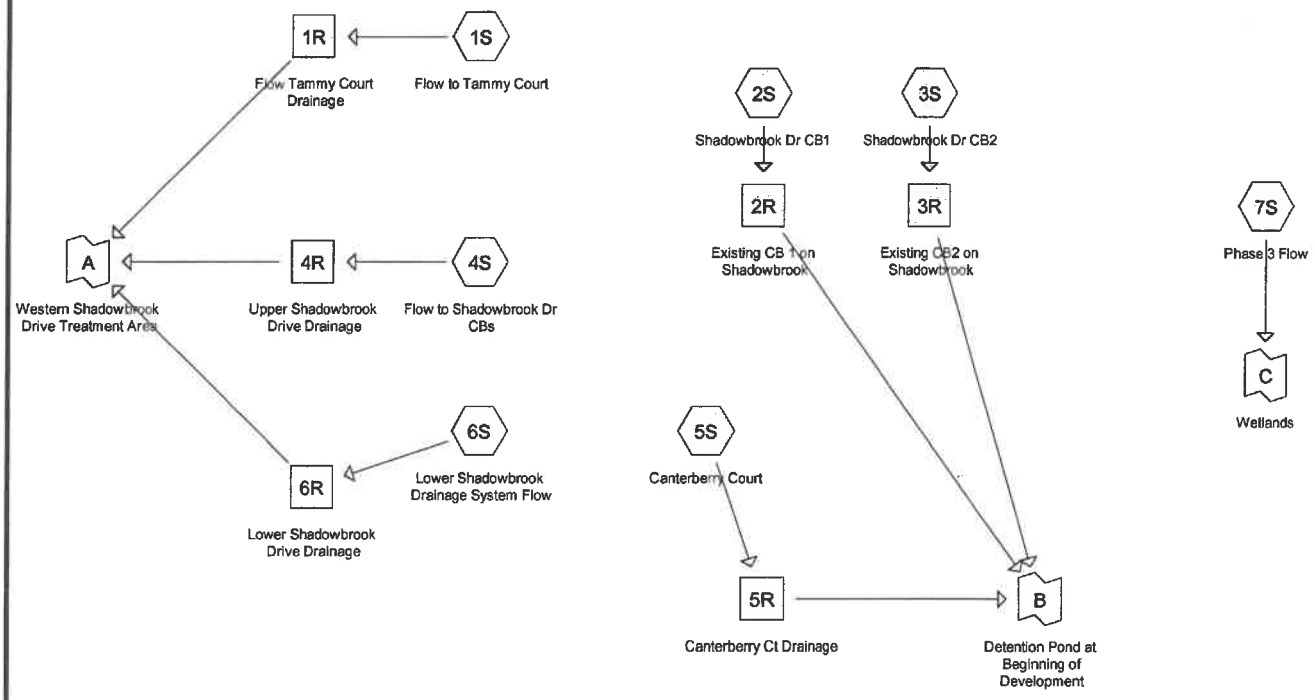
Northeast Regional Climate Center

17. HYDROCAD DRAINAGE ANALYSIS



Subcat Reach Pond Link

Routing Diagram for 1708241-PRE-DEVELOPMENT
Prepared by Keach Nordstrom Associates, Inc. , Printed 5/2/2022
HydroCAD® 10.00-26 s/n 01045 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
8.26	39	>75% Grass cover, Good, HSG A (1S, 2S, 3S, 4S, 5S, 6S, 7S)
0.19	74	>75% Grass cover, Good, HSG C (4S, 7S)
5.84	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S, 7S)
0.44	76	Gravel roads, HSG A (1S, 2S, 4S, 6S)
0.00	91	Gravel roads, HSG D (2S, 4S)
0.90	98	Paved parking, HSG A (2S, 3S, 4S, 5S, 6S, 7S)
0.01	98	Paved parking, HSG D (7S)
0.02	98	Roofs, HSG A (3S, 5S)
0.08	30	Woods, Good, HSG A (3S, 6S)
0.26	55	Woods, Good, HSG B (7S)
0.68	70	Woods, Good, HSG C (7S)
4.02	77	Woods, Good, HSG D (1S, 2S, 3S, 4S, 7S)
20.68	**63**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
9.70	HSG A	1S, 2S, 3S, 4S, 5S, 6S, 7S
0.26	HSG B	7S
0.87	HSG C	4S, 7S
9.86	HSG D	1S, 2S, 3S, 4S, 7S
0.00	Other	
20.68		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=98,916 sf 0.00% Impervious Runoff Depth>0.55"
Flow Length=347' Tc=6.0 min CN=WQ Runoff=1.38 cfs 0.104 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=84,854 sf 4.63% Impervious Runoff Depth>0.68"
Flow Length=520' Tc=6.6 min CN=WQ Runoff=1.42 cfs 0.110 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=35,464 sf 5.56% Impervious Runoff Depth>0.75"
Flow Length=336' Tc=8.0 min CN=WQ Runoff=0.62 cfs 0.051 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=75,422 sf 14.87% Impervious Runoff Depth>0.80"
Flow Length=289' Tc=6.0 min CN=WQ Runoff=1.48 cfs 0.116 af

Subcatchment 5S: Canterberry Court Runoff Area=43,310 sf 10.83% Impervious Runoff Depth>0.24"
Flow Length=187' Tc=6.0 min CN=WQ Runoff=0.25 cfs 0.020 af

Subcatchment 6S: Lower Shadowbrook Runoff Area=143,549 sf 5.84% Impervious Runoff Depth>0.17"
Flow Length=392' Tc=7.2 min CN=WQ Runoff=0.57 cfs 0.048 af

Subcatchment 7S: Phase 3 Flow Runoff Area=419,415 sf 2.41% Impervious Runoff Depth>0.56"
Flow Length=1,000' Tc=20.9 min CN=WQ Runoff=3.89 cfs 0.453 af

Reach 1R: Flow Tammy Court Drainage Inflow=1.38 cfs 0.104 af
Outflow=1.38 cfs 0.104 af

Reach 2R: Existing CB 1 on Shadowbrook Inflow=1.42 cfs 0.110 af
Outflow=1.42 cfs 0.110 af

Reach 3R: Existing CB2 on Shadowbrook Inflow=0.62 cfs 0.051 af
Outflow=0.62 cfs 0.051 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=1.48 cfs 0.116 af
Outflow=1.48 cfs 0.116 af

Reach 5R: Canterberry Ct Drainage Inflow=0.25 cfs 0.020 af
Outflow=0.25 cfs 0.020 af

Reach 6R: Lower Shadowbrook Drive Drainage Inflow=0.57 cfs 0.048 af
Outflow=0.57 cfs 0.048 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=3.44 cfs 0.268 af
Primary=3.44 cfs 0.268 af

Link B: Detention Pond at Beginning of Development Inflow=2.28 cfs 0.181 af
Primary=2.28 cfs 0.181 af

Link C: Wetlands Inflow=3.89 cfs 0.453 af
Primary=3.89 cfs 0.453 af

Total Runoff Area = 20.68 ac Runoff Volume = 0.901 af Average Runoff Depth = 0.52"
95.52% Pervious = 19.76 ac 4.48% Impervious = 0.93 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 1.38 cfs @ 12.10 hrs, Volume= 0.104 af, Depth> 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.48"

Area (sf)	CN	Description
48,545	80	>75% Grass cover, Good, HSG D
33,359	39	>75% Grass cover, Good, HSG A
13,097	77	Woods, Good, HSG D
3,915	76	Gravel roads, HSG A
98,916		Weighted Average
98,916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	50	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	191	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	56	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	347	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 1.42 cfs @ 12.10 hrs, Volume= 0.110 af, Depth> 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.48"

Area (sf)	CN	Description
51,979	80	>75% Grass cover, Good, HSG D
24,417	39	>75% Grass cover, Good, HSG A
857	77	Woods, Good, HSG D
3,925	98	Paved parking, HSG A
3,626	76	Gravel roads, HSG A
50	91	Gravel roads, HSG D
84,854		Weighted Average
80,929		95.37% Pervious Area
3,925		4.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.4	65	0.1500	2.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	166	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.0900	4.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.8	76	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	117	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.6	520	Total			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 0.62 cfs @ 12.12 hrs, Volume= 0.051 af, Depth> 0.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.48"

Area (sf)	CN	Description
257	98	Roofs, HSG A
15,078	80	>75% Grass cover, Good, HSG D
5,743	39	>75% Grass cover, Good, HSG A
12,265	77	Woods, Good, HSG D
406	30	Woods, Good, HSG A
1,715	98	Paved parking, HSG A
35,464		Weighted Average
33,492		94.44% Pervious Area
1,972		5.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.1400	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	70	0.0990	1.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	200	0.1600	2.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	16	0.0625	5.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.0	336	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 1.48 cfs @ 12.10 hrs, Volume= 0.116 af, Depth> 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.48"

Area (sf)	CN	Description
27,749	80	>75% Grass cover, Good, HSG D
20,107	39	>75% Grass cover, Good, HSG A
5,085	74	>75% Grass cover, Good, HSG C
11,216	98	Paved parking, HSG A
2	91	Gravel roads, HSG D
2,816	76	Gravel roads, HSG A
8,447	77	Woods, Good, HSG D
75,422		Weighted Average
64,206		85.13% Pervious Area
11,216		14.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0600	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	59	0.2500	3.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	13	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	48	0.3800	3.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	44	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.6	289	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 5S: Canterberry Court

Runoff = 0.25 cfs @ 12.09 hrs, Volume= 0.020 af, Depth> 0.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.48"

Area (sf)	CN	Description
38,619	39	>75% Grass cover, Good, HSG A
4,241	98	Paved parking, HSG A
450	98	Roofs, HSG A
43,310		Weighted Average
38,619		89.17% Pervious Area
4,691		10.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Drainage System Flow

Runoff = 0.57 cfs @ 12.10 hrs, Volume= 0.048 af, Depth> 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.48"

Area (sf)	CN	Description
123,116	39	>75% Grass cover, Good, HSG A
3,236	30	Woods, Good, HSG A
8,809	76	Gravel roads, HSG A
8,388	98	Paved parking, HSG A
143,549		Weighted Average
135,161		94.16% Pervious Area
8,388		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0700	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	25	0.2600	3.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	93	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	23	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.2	110	0.0450	1.48		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	52	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	39	0.0770	1.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	392	Total			

Summary for Subcatchment 7S: Phase 3 Flow

Runoff = 3.89 cfs @ 12.31 hrs, Volume= 0.453 af, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.48"

Area (sf)	CN	Description
2,266	98	Paved parking, HSG A
110,852	80	>75% Grass cover, Good, HSG D
114,295	39	>75% Grass cover, Good, HSG A
2,976	74	>75% Grass cover, Good, HSG C
140,321	77	Woods, Good, HSG D
29,651	70	Woods, Good, HSG C
11,194	55	Woods, Good, HSG B
325	98	Paved parking, HSG D
7,535	98	Paved parking, HSG A
419,415		Weighted Average
409,289		97.59% Pervious Area
10,126		2.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.8	383	0.1150	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	397	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	170	0.2000	2.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.9	1,000	Total			

Summary for Reach 1R: Flow Tammy Court Drainage

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

Inflow Area = 2.27 ac, 0.00% Impervious, Inflow Depth > 0.55" for 1-yr event
Inflow = 1.38 cfs @ 12.10 hrs, Volume= 0.104 af
Outflow = 1.38 cfs @ 12.10 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Existing CB 1 on Shadowbrook

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

Inflow Area = 1.95 ac, 4.63% Impervious, Inflow Depth > 0.68" for 1-yr event
Inflow = 1.42 cfs @ 12.10 hrs, Volume= 0.110 af
Outflow = 1.42 cfs @ 12.10 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Existing CB2 on Shadowbrook

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

Inflow Area = 0.81 ac, 5.56% Impervious, Inflow Depth > 0.75" for 1-yr event
Inflow = 0.62 cfs @ 12.12 hrs, Volume= 0.051 af
Outflow = 0.62 cfs @ 12.12 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area = 1.73 ac, 14.87% Impervious, Inflow Depth > 0.80" for 1-yr event
Inflow = 1.48 cfs @ 12.10 hrs, Volume= 0.116 af
Outflow = 1.48 cfs @ 12.10 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area = 0.99 ac, 10.83% Impervious, Inflow Depth > 0.24" for 1-yr event
Inflow = 0.25 cfs @ 12.09 hrs, Volume= 0.020 af
Outflow = 0.25 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Drive Drainage

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

Inflow Area = 3.30 ac, 5.84% Impervious, Inflow Depth > 0.17" for 1-yr event
Inflow = 0.57 cfs @ 12.10 hrs, Volume= 0.048 af
Outflow = 0.57 cfs @ 12.10 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 7.30 ac, 6.17% Impervious, Inflow Depth > 0.44" for 1-yr event
Inflow = 3.44 cfs @ 12.10 hrs, Volume= 0.268 af
Primary = 3.44 cfs @ 12.10 hrs, Volume= 0.268 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: Detention Pond at Beginning of Development

Inflow Area = 3.76 ac, 6.47% Impervious, Inflow Depth > 0.58" for 1-yr event
Inflow = 2.28 cfs @ 12.11 hrs, Volume= 0.181 af
Primary = 2.28 cfs @ 12.11 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.63 ac, 2.41% Impervious, Inflow Depth > 0.56" for 1-yr event
Inflow = 3.89 cfs @ 12.31 hrs, Volume= 0.453 af
Primary = 3.89 cfs @ 12.31 hrs, Volume= 0.453 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=98,916 sf 0.00% Impervious Runoff Depth>2.73"
Flow Length=347' Tc=6.0 min AMC Adjusted CN=WQ Runoff=6.36 cfs 0.516 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=84,854 sf 4.63% Impervious Runoff Depth>2.73"
Flow Length=520' Tc=6.6 min AMC Adjusted CN=WQ Runoff=5.38 cfs 0.443 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=35,464 sf 5.56% Impervious Runoff Depth>2.73"
Flow Length=336' Tc=8.0 min AMC Adjusted CN=WQ Runoff=2.16 cfs 0.185 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=75,422 sf 14.87% Impervious Runoff Depth>2.73"
Flow Length=289' Tc=6.0 min AMC Adjusted CN=WQ Runoff=4.85 cfs 0.393 af

Subcatchment 5S: Canterberry Court Runoff Area=43,310 sf 10.83% Impervious Runoff Depth>2.73"
Flow Length=187' Tc=6.0 min AMC Adjusted CN=WQ Runoff=2.78 cfs 0.226 af

Subcatchment 6S: Lower Shadowbrook Runoff Area=143,549 sf 5.84% Impervious Runoff Depth>2.73"
Flow Length=392' Tc=7.2 min AMC Adjusted CN=WQ Runoff=8.96 cfs 0.749 af

Subcatchment 7S: Phase 3 Flow Runoff Area=419,415 sf 2.41% Impervious Runoff Depth>2.72"
Flow Length=1,000' Tc=20.9 min AMC Adjusted CN=WQ Runoff=18.46 cfs 2.183 af

Reach 1R: Flow Tammy Court Drainage Inflow=6.36 cfs 0.516 af
Outflow=6.36 cfs 0.516 af

Reach 2R: Existing CB 1 on Shadowbrook Inflow=5.38 cfs 0.443 af
Outflow=5.38 cfs 0.443 af

Reach 3R: Existing CB2 on Shadowbrook Inflow=2.16 cfs 0.185 af
Outflow=2.16 cfs 0.185 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=4.85 cfs 0.393 af
Outflow=4.85 cfs 0.393 af

Reach 5R: Canterberry Ct Drainage Inflow=2.78 cfs 0.226 af
Outflow=2.78 cfs 0.226 af

Reach 6R: Lower Shadowbrook Drive Drainage Inflow=8.96 cfs 0.749 af
Outflow=8.96 cfs 0.749 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=20.11 cfs 1.658 af
Primary=20.11 cfs 1.658 af

Link B: Detention Pond at Beginning of Development Inflow=10.29 cfs 0.853 af
Primary=10.29 cfs 0.853 af

Link C: Wetlands Inflow=18.46 cfs 2.183 af
Primary=18.46 cfs 2.183 af

Total Runoff Area = 20.68 ac Runoff Volume = 4.695 af Average Runoff Depth = 2.72"
95.52% Pervious = 19.76 ac 4.48% Impervious = 0.93 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 6.36 cfs @ 12.09 hrs, Volume= 0.516 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR FROZEN Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
48,545	80	98	>75% Grass cover, Good, HSG D
33,359	39	98	>75% Grass cover, Good, HSG A
13,097	77	98	Woods, Good, HSG D
3,915	76	98	Gravel roads, HSG A
98,916			Weighted Average
98,916			100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	50	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	191	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	56	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	347	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 5.38 cfs @ 12.09 hrs, Volume= 0.443 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR FROZEN Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
51,979	80	98	>75% Grass cover, Good, HSG D
24,417	39	98	>75% Grass cover, Good, HSG A
857	77	98	Woods, Good, HSG D
3,925	98	98	Paved parking, HSG A
3,626	76	98	Gravel roads, HSG A
50	91	98	Gravel roads, HSG D
84,854			Weighted Average
80,929			95.37% Pervious Area
3,925			4.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.4	65	0.1500	2.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	166	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.0900	4.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.8	76	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	117	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.6	520	Total			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 2.16 cfs @ 12.11 hrs, Volume= 0.185 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR FROZEN Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
257	98	98	Roofs, HSG A
15,078	80	98	>75% Grass cover, Good, HSG D
5,743	39	98	>75% Grass cover, Good, HSG A
12,265	77	98	Woods, Good, HSG D
406	30	98	Woods, Good, HSG A
1,715	98	98	Paved parking, HSG A
35,464			Weighted Average
33,492			94.44% Pervious Area
1,972			5.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.1400	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	70	0.0990	1.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	200	0.1600	2.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	16	0.0625	5.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.0	336	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 4.85 cfs @ 12.09 hrs, Volume= 0.393 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR FROZEN Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
27,749	80	98	>75% Grass cover, Good, HSG D
20,107	39	98	>75% Grass cover, Good, HSG A
5,085	74	98	>75% Grass cover, Good, HSG C
11,216	98	98	Paved parking, HSG A
2	91	98	Gravel roads, HSG D
2,816	76	98	Gravel roads, HSG A
8,447	77	98	Woods, Good, HSG D
75,422			Weighted Average
64,206			85.13% Pervious Area
11,216			14.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0600	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	59	0.2500	3.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	13	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	48	0.3800	3.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	44	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.6	289	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 5S: Canterberry Court

Runoff = 2.78 cfs @ 12.09 hrs, Volume= 0.226 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR FROZEN Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
38,619	39	98	>75% Grass cover, Good, HSG A
4,241	98	98	Paved parking, HSG A
450	98	98	Roofs, HSG A
43,310			Weighted Average
38,619			89.17% Pervious Area
4,691			10.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Drainage System Flow

Runoff = 8.96 cfs @ 12.10 hrs, Volume= 0.749 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR FROZEN Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
123,116	39	98	>75% Grass cover, Good, HSG A
3,236	30	98	Woods, Good, HSG A
8,809	76	98	Gravel roads, HSG A
8,388	98	98	Paved parking, HSG A
143,549			Weighted Average
135,161			94.16% Pervious Area
8,388			5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0700	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	25	0.2600	3.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	93	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	23	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.2	110	0.0450	1.48		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	52	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	39	0.0770	1.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	392	Total			

Summary for Subcatchment 7S: Phase 3 Flow

Runoff = 18.46 cfs @ 12.27 hrs, Volume= 2.183 af, Depth> 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR FROZEN Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
2,266	98	98	Paved parking, HSG A
110,852	80	98	>75% Grass cover, Good, HSG D
114,295	39	98	>75% Grass cover, Good, HSG A
2,976	74	98	>75% Grass cover, Good, HSG C
140,321	77	98	Woods, Good, HSG D
29,651	70	98	Woods, Good, HSG C
11,194	55	98	Woods, Good, HSG B
325	98	98	Paved parking, HSG D
7,535	98	98	Paved parking, HSG A
419,415			Weighted Average
409,289			97.59% Pervious Area
10,126			2.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.8	383	0.1150	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	397	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	170	0.2000	2.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.9	1,000	Total			

Summary for Reach 1R: Flow Tammy Court Drainage

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

Inflow Area = 2.27 ac, 0.00% Impervious, Inflow Depth > 2.73" for 2-YEAR FROZEN event
Inflow = 6.36 cfs @ 12.09 hrs, Volume= 0.516 af
Outflow = 6.36 cfs @ 12.09 hrs, Volume= 0.516 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Existing CB 1 on Shadowbrook

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

Inflow Area = 1.95 ac, 4.63% Impervious, Inflow Depth > 2.73" for 2-YEAR FROZEN event
Inflow = 5.38 cfs @ 12.09 hrs, Volume= 0.443 af
Outflow = 5.38 cfs @ 12.09 hrs, Volume= 0.443 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Existing CB2 on Shadowbrook

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

Inflow Area = 0.81 ac, 5.56% Impervious, Inflow Depth > 2.73" for 2-YEAR FROZEN event
Inflow = 2.16 cfs @ 12.11 hrs, Volume= 0.185 af
Outflow = 2.16 cfs @ 12.11 hrs, Volume= 0.185 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area = 1.73 ac, 14.87% Impervious, Inflow Depth > 2.73" for 2-YEAR FROZEN event
Inflow = 4.85 cfs @ 12.09 hrs, Volume= 0.393 af
Outflow = 4.85 cfs @ 12.09 hrs, Volume= 0.393 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area = 0.99 ac, 10.83% Impervious, Inflow Depth > 2.73" for 2-YEAR FROZEN event
Inflow = 2.78 cfs @ 12.09 hrs, Volume= 0.226 af
Outflow = 2.78 cfs @ 12.09 hrs, Volume= 0.226 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Drive Drainage

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

Inflow Area = 3.30 ac, 5.84% Impervious, Inflow Depth > 2.73" for 2-YEAR FROZEN event
Inflow = 8.96 cfs @ 12.10 hrs, Volume= 0.749 af
Outflow = 8.96 cfs @ 12.10 hrs, Volume= 0.749 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 7.30 ac, 6.17% Impervious, Inflow Depth > 2.73" for 2-YEAR FROZEN event
Inflow = 20.11 cfs @ 12.09 hrs, Volume= 1.658 af
Primary = 20.11 cfs @ 12.09 hrs, Volume= 1.658 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: Detention Pond at Beginning of Development

Inflow Area = 3.76 ac, 6.47% Impervious, Inflow Depth > 2.73" for 2-YEAR FROZEN event
Inflow = 10.29 cfs @ 12.10 hrs, Volume= 0.853 af
Primary = 10.29 cfs @ 12.10 hrs, Volume= 0.853 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.63 ac, 2.41% Impervious, Inflow Depth > 2.72" for 2-YEAR FROZEN event
Inflow = 18.46 cfs @ 12.27 hrs, Volume= 2.183 af
Primary = 18.46 cfs @ 12.27 hrs, Volume= 2.183 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=98,916 sf 0.00% Impervious Runoff Depth>0.78"
Flow Length=347' Tc=6.0 min CN=WQ Runoff=1.99 cfs 0.147 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=84,854 sf 4.63% Impervious Runoff Depth>0.93"
Flow Length=520' Tc=6.6 min CN=WQ Runoff=1.98 cfs 0.150 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=35,464 sf 5.56% Impervious Runoff Depth>1.03"
Flow Length=336' Tc=8.0 min CN=WQ Runoff=0.87 cfs 0.070 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=75,422 sf 14.87% Impervious Runoff Depth>1.07"
Flow Length=289' Tc=6.0 min CN=WQ Runoff=2.00 cfs 0.154 af

Subcatchment 5S: Canterberry Court Runoff Area=43,310 sf 10.83% Impervious Runoff Depth>0.30"
Flow Length=187' Tc=6.0 min CN=WQ Runoff=0.30 cfs 0.024 af

Subcatchment 6S: Lower Shadowbrook Runoff Area=143,549 sf 5.84% Impervious Runoff Depth>0.22"
Flow Length=392' Tc=7.2 min CN=WQ Runoff=0.73 cfs 0.060 af

Subcatchment 7S: Phase 3 Flow Runoff Area=419,415 sf 2.41% Impervious Runoff Depth>0.79"
Flow Length=1,000' Tc=20.9 min CN=WQ Runoff=5.64 cfs 0.637 af

Reach 1R: Flow Tammy Court Drainage Inflow=1.99 cfs 0.147 af
Outflow=1.99 cfs 0.147 af

Reach 2R: Existing CB 1 on Shadowbrook Inflow=1.98 cfs 0.150 af
Outflow=1.98 cfs 0.150 af

Reach 3R: Existing CB2 on Shadowbrook Inflow=0.87 cfs 0.070 af
Outflow=0.87 cfs 0.070 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=2.00 cfs 0.154 af
Outflow=2.00 cfs 0.154 af

Reach 5R: Canterberry Ct Drainage Inflow=0.30 cfs 0.024 af
Outflow=0.30 cfs 0.024 af

Reach 6R: Lower Shadowbrook Drive Drainage Inflow=0.73 cfs 0.060 af
Outflow=0.73 cfs 0.060 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=4.72 cfs 0.361 af
Primary=4.72 cfs 0.361 af

Link B: Detention Pond at Beginning of Development Inflow=3.14 cfs 0.245 af
Primary=3.14 cfs 0.245 af

Link C: Wetlands Inflow=5.64 cfs 0.637 af
Primary=5.64 cfs 0.637 af

Total Runoff Area = 20.68 ac Runoff Volume = 1.243 af Average Runoff Depth = 0.72"
95.52% Pervious = 19.76 ac 4.48% Impervious = 0.93 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 1.99 cfs @ 12.10 hrs, Volume= 0.147 af, Depth> 0.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
48,545	80	>75% Grass cover, Good, HSG D
33,359	39	>75% Grass cover, Good, HSG A
13,097	77	Woods, Good, HSG D
3,915	76	Gravel roads, HSG A
98,916		Weighted Average
98,916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	50	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	191	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	56	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	347	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 1.98 cfs @ 12.10 hrs, Volume= 0.150 af, Depth> 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
51,979	80	>75% Grass cover, Good, HSG D
24,417	39	>75% Grass cover, Good, HSG A
857	77	Woods, Good, HSG D
3,925	98	Paved parking, HSG A
3,626	76	Gravel roads, HSG A
50	91	Gravel roads, HSG D
84,854		Weighted Average
80,929		95.37% Pervious Area
3,925		4.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.4	65	0.1500	2.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	166	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.0900	4.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.8	76	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	117	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.6	520	Total			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 0.87 cfs @ 12.12 hrs, Volume= 0.070 af, Depth> 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
257	98	Roofs, HSG A
15,078	80	>75% Grass cover, Good, HSG D
5,743	39	>75% Grass cover, Good, HSG A
12,265	77	Woods, Good, HSG D
406	30	Woods, Good, HSG A
1,715	98	Paved parking, HSG A
35,464		Weighted Average
33,492		94.44% Pervious Area
1,972		5.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.1400	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	70	0.0990	1.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	200	0.1600	2.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	16	0.0625	5.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.0	336	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 2.00 cfs @ 12.09 hrs, Volume= 0.154 af, Depth> 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
27,749	80	>75% Grass cover, Good, HSG D
20,107	39	>75% Grass cover, Good, HSG A
5,085	74	>75% Grass cover, Good, HSG C
11,216	98	Paved parking, HSG A
2	91	Gravel roads, HSG D
2,816	76	Gravel roads, HSG A
8,447	77	Woods, Good, HSG D
75,422		Weighted Average
64,206		85.13% Pervious Area
11,216		14.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0600	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	59	0.2500	3.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	13	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	48	0.3800	3.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	44	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.6	289	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 5S: Canterberry Court

Runoff = 0.30 cfs @ 12.09 hrs, Volume= 0.024 af, Depth> 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
38,619	39	>75% Grass cover, Good, HSG A
4,241	98	Paved parking, HSG A
450	98	Roofs, HSG A
43,310		Weighted Average
38,619		89.17% Pervious Area
4,691		10.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Drainage System Flow

Runoff = 0.73 cfs @ 12.10 hrs, Volume= 0.060 af, Depth> 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
123,116	39	>75% Grass cover, Good, HSG A
3,236	30	Woods, Good, HSG A
8,809	76	Gravel roads, HSG A
8,388	98	Paved parking, HSG A
143,549		Weighted Average
135,161		94.16% Pervious Area
8,388		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0700	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	25	0.2600	3.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	93	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	23	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.2	110	0.0450	1.48		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	52	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	39	0.0770	1.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	392	Total			

Summary for Subcatchment 7S: Phase 3 Flow

Runoff = 5.64 cfs @ 12.31 hrs, Volume= 0.637 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
2,266	98	Paved parking, HSG A
110,852	80	>75% Grass cover, Good, HSG D
114,295	39	>75% Grass cover, Good, HSG A
2,976	74	>75% Grass cover, Good, HSG C
140,321	77	Woods, Good, HSG D
29,651	70	Woods, Good, HSG C
11,194	55	Woods, Good, HSG B
325	98	Paved parking, HSG D
7,535	98	Paved parking, HSG A
419,415		Weighted Average
409,289		97.59% Pervious Area
10,126		2.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.8	383	0.1150	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	397	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	170	0.2000	2.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.9	1,000	Total			

Summary for Reach 1R: Flow Tammy Court Drainage

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

Inflow Area = 2.27 ac, 0.00% Impervious, Inflow Depth > 0.78" for 2-yr event
Inflow = 1.99 cfs @ 12.10 hrs, Volume= 0.147 af
Outflow = 1.99 cfs @ 12.10 hrs, Volume= 0.147 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Existing CB 1 on Shadowbrook

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

Inflow Area = 1.95 ac, 4.63% Impervious, Inflow Depth > 0.93" for 2-yr event
Inflow = 1.98 cfs @ 12.10 hrs, Volume= 0.150 af
Outflow = 1.98 cfs @ 12.10 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Existing CB2 on Shadowbrook

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

Inflow Area = 0.81 ac, 5.56% Impervious, Inflow Depth > 1.03" for 2-yr event
Inflow = 0.87 cfs @ 12.12 hrs, Volume= 0.070 af
Outflow = 0.87 cfs @ 12.12 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area = 1.73 ac, 14.87% Impervious, Inflow Depth > 1.07" for 2-yr event
Inflow = 2.00 cfs @ 12.09 hrs, Volume= 0.154 af
Outflow = 2.00 cfs @ 12.09 hrs, Volume= 0.154 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area = 0.99 ac, 10.83% Impervious, Inflow Depth > 0.30" for 2-yr event
Inflow = 0.30 cfs @ 12.09 hrs, Volume= 0.024 af
Outflow = 0.30 cfs @ 12.09 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Drive Drainage

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

Inflow Area = 3.30 ac, 5.84% Impervious, Inflow Depth > 0.22" for 2-yr event
Inflow = 0.73 cfs @ 12.10 hrs, Volume= 0.060 af
Outflow = 0.73 cfs @ 12.10 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 7.30 ac, 6.17% Impervious, Inflow Depth > 0.59" for 2-yr event
Inflow = 4.72 cfs @ 12.10 hrs, Volume= 0.361 af
Primary = 4.72 cfs @ 12.10 hrs, Volume= 0.361 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: Detention Pond at Beginning of Development

Inflow Area = 3.76 ac, 6.47% Impervious, Inflow Depth > 0.78" for 2-yr event
Inflow = 3.14 cfs @ 12.11 hrs, Volume= 0.245 af
Primary = 3.14 cfs @ 12.11 hrs, Volume= 0.245 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.63 ac, 2.41% Impervious, Inflow Depth > 0.79" for 2-yr event
Inflow = 5.64 cfs @ 12.31 hrs, Volume= 0.637 af
Primary = 5.64 cfs @ 12.31 hrs, Volume= 0.637 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=98,916 sf 0.00% Impervious Runoff Depth>1.60"
Flow Length=347' Tc=6.0 min CN=WQ Runoff=4.09 cfs 0.303 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=84,854 sf 4.63% Impervious Runoff Depth>1.83"
Flow Length=520' Tc=6.6 min CN=WQ Runoff=3.92 cfs 0.297 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=35,464 sf 5.56% Impervious Runoff Depth>2.04"
Flow Length=336' Tc=8.0 min CN=WQ Runoff=1.76 cfs 0.139 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=75,422 sf 14.87% Impervious Runoff Depth>2.01"
Flow Length=289' Tc=6.0 min CN=WQ Runoff=3.78 cfs 0.290 af

Subcatchment 5S: Canterberry Court Runoff Area=43,310 sf 10.83% Impervious Runoff Depth>0.55"
Flow Length=187' Tc=6.0 min CN=WQ Runoff=0.46 cfs 0.046 af

Subcatchment 6S: Lower Shadowbrook Runoff Area=143,549 sf 5.84% Impervious Runoff Depth>0.47"
Flow Length=392' Tc=7.2 min CN=WQ Runoff=1.27 cfs 0.128 af

Subcatchment 7S: Phase 3 Flow Runoff Area=419,415 sf 2.41% Impervious Runoff Depth>1.65"
Flow Length=1,000' Tc=20.9 min CN=WQ Runoff=11.93 cfs 1.323 af

Reach 1R: Flow Tammy Court Drainage Inflow=4.09 cfs 0.303 af
Outflow=4.09 cfs 0.303 af

Reach 2R: Existing CB 1 on Shadowbrook Inflow=3.92 cfs 0.297 af
Outflow=3.92 cfs 0.297 af

Reach 3R: Existing CB2 on Shadowbrook Inflow=1.76 cfs 0.139 af
Outflow=1.76 cfs 0.139 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=3.78 cfs 0.290 af
Outflow=3.78 cfs 0.290 af

Reach 5R: Canterberry Ct Drainage Inflow=0.46 cfs 0.046 af
Outflow=0.46 cfs 0.046 af

Reach 6R: Lower Shadowbrook Drive Drainage Inflow=1.27 cfs 0.128 af
Outflow=1.27 cfs 0.128 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=9.13 cfs 0.721 af
Primary=9.13 cfs 0.721 af

Link B: Detention Pond at Beginning of Development Inflow=6.11 cfs 0.481 af
Primary=6.11 cfs 0.481 af

Link C: Wetlands Inflow=11.93 cfs 1.323 af
Primary=11.93 cfs 1.323 af

Total Runoff Area = 20.68 ac Runoff Volume = 2.526 af Average Runoff Depth = 1.47"
95.52% Pervious = 19.76 ac 4.48% Impervious = 0.93 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 4.09 cfs @ 12.09 hrs, Volume= 0.303 af, Depth> 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
48,545	80	>75% Grass cover, Good, HSG D
33,359	39	>75% Grass cover, Good, HSG A
13,097	77	Woods, Good, HSG D
3,915	76	Gravel roads, HSG A
98,916		Weighted Average
98,916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	50	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	191	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	56	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	347	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 3.92 cfs @ 12.10 hrs, Volume= 0.297 af, Depth> 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
51,979	80	>75% Grass cover, Good, HSG D
24,417	39	>75% Grass cover, Good, HSG A
857	77	Woods, Good, HSG D
3,925	98	Paved parking, HSG A
3,626	76	Gravel roads, HSG A
50	91	Gravel roads, HSG D
84,854		Weighted Average
80,929		95.37% Pervious Area
3,925		4.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.4	65	0.1500	2.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	166	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.0900	4.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.8	76	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	117	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.6	520	Total			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 1.76 cfs @ 12.12 hrs, Volume= 0.139 af, Depth> 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
257	98	Roofs, HSG A
15,078	80	>75% Grass cover, Good, HSG D
5,743	39	>75% Grass cover, Good, HSG A
12,265	77	Woods, Good, HSG D
406	30	Woods, Good, HSG A
1,715	98	Paved parking, HSG A
35,464		Weighted Average
33,492		94.44% Pervious Area
1,972		5.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.1400	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	70	0.0990	1.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	200	0.1600	2.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	16	0.0625	5.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.0	336	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 3.78 cfs @ 12.09 hrs, Volume= 0.290 af, Depth> 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
27,749	80	>75% Grass cover, Good, HSG D
20,107	39	>75% Grass cover, Good, HSG A
5,085	74	>75% Grass cover, Good, HSG C
11,216	98	Paved parking, HSG A
2	91	Gravel roads, HSG D
2,816	76	Gravel roads, HSG A
8,447	77	Woods, Good, HSG D
75,422		Weighted Average
64,206		85.13% Pervious Area
11,216		14.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0600	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	59	0.2500	3.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	13	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	48	0.3800	3.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	44	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.6	289	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 5S: Canterberry Court

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
38,619	39	>75% Grass cover, Good, HSG A
4,241	98	Paved parking, HSG A
450	98	Roofs, HSG A
43,310		Weighted Average
38,619		89.17% Pervious Area
4,691		10.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Drainage System Flow

Runoff = 1.27 cfs @ 12.10 hrs, Volume= 0.128 af, Depth> 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
123,116	39	>75% Grass cover, Good, HSG A
3,236	30	Woods, Good, HSG A
8,809	76	Gravel roads, HSG A
8,388	98	Paved parking, HSG A
143,549		Weighted Average
135,161		94.16% Pervious Area
8,388		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0700	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	25	0.2600	3.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	93	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	23	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.2	110	0.0450	1.48		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	52	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	39	0.0770	1.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	392	Total			

Summary for Subcatchment 7S: Phase 3 Flow

Runoff = 11.93 cfs @ 12.30 hrs, Volume= 1.323 af, Depth> 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
2,266	98	Paved parking, HSG A
110,852	80	>75% Grass cover, Good, HSG D
114,295	39	>75% Grass cover, Good, HSG A
2,976	74	>75% Grass cover, Good, HSG C
140,321	77	Woods, Good, HSG D
29,651	70	Woods, Good, HSG C
11,194	55	Woods, Good, HSG B
325	98	Paved parking, HSG D
7,535	98	Paved parking, HSG A
419,415		Weighted Average
409,289		97.59% Pervious Area
10,126		2.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.8	383	0.1150	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	397	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	170	0.2000	2.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.9	1,000	Total			

Summary for Reach 1R: Flow Tammy Court Drainage

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

Inflow Area = 2.27 ac, 0.00% Impervious, Inflow Depth > 1.60" for 10-yr event
Inflow = 4.09 cfs @ 12.09 hrs, Volume= 0.303 af
Outflow = 4.09 cfs @ 12.09 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Existing CB 1 on Shadowbrook

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

Inflow Area = 1.95 ac, 4.63% Impervious, Inflow Depth > 1.83" for 10-yr event
Inflow = 3.92 cfs @ 12.10 hrs, Volume= 0.297 af
Outflow = 3.92 cfs @ 12.10 hrs, Volume= 0.297 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Existing CB2 on Shadowbrook

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

Inflow Area = 0.81 ac, 5.56% Impervious, Inflow Depth > 2.04" for 10-yr event
Inflow = 1.76 cfs @ 12.12 hrs, Volume= 0.139 af
Outflow = 1.76 cfs @ 12.12 hrs, Volume= 0.139 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area = 1.73 ac, 14.87% Impervious, Inflow Depth > 2.01" for 10-yr event
Inflow = 3.78 cfs @ 12.09 hrs, Volume= 0.290 af
Outflow = 3.78 cfs @ 12.09 hrs, Volume= 0.290 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area = 0.99 ac, 10.83% Impervious, Inflow Depth > 0.55" for 10-yr event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.046 af
Outflow = 0.46 cfs @ 12.09 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Drive Drainage

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

Inflow Area = 3.30 ac, 5.84% Impervious, Inflow Depth > 0.47" for 10-yr event
Inflow = 1.27 cfs @ 12.10 hrs, Volume= 0.128 af
Outflow = 1.27 cfs @ 12.10 hrs, Volume= 0.128 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 7.30 ac, 6.17% Impervious, Inflow Depth > 1.19" for 10-yr event
Inflow = 9.13 cfs @ 12.09 hrs, Volume= 0.721 af
Primary = 9.13 cfs @ 12.09 hrs, Volume= 0.721 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: Detention Pond at Beginning of Development

Inflow Area = 3.76 ac, 6.47% Impervious, Inflow Depth > 1.54" for 10-yr event
Inflow = 6.11 cfs @ 12.10 hrs, Volume= 0.481 af
Primary = 6.11 cfs @ 12.10 hrs, Volume= 0.481 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.63 ac, 2.41% Impervious, Inflow Depth > 1.65" for 10-yr event
Inflow = 11.93 cfs @ 12.30 hrs, Volume= 1.323 af
Primary = 11.93 cfs @ 12.30 hrs, Volume= 1.323 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=98,916 sf 0.00% Impervious Runoff Depth>2.37"
Flow Length=347' Tc=6.0 min CN=WQ Runoff=5.86 cfs 0.448 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=84,854 sf 4.63% Impervious Runoff Depth>2.65"
Flow Length=520' Tc=6.6 min CN=WQ Runoff=5.53 cfs 0.429 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=35,464 sf 5.56% Impervious Runoff Depth>2.93"
Flow Length=336' Tc=8.0 min CN=WQ Runoff=2.50 cfs 0.199 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=75,422 sf 14.87% Impervious Runoff Depth>2.84"
Flow Length=289' Tc=6.0 min CN=WQ Runoff=5.26 cfs 0.410 af

Subcatchment 5S: Canterberry Court Runoff Area=43,310 sf 10.83% Impervious Runoff Depth>0.90"
Flow Length=187' Tc=6.0 min CN=WQ Runoff=0.58 cfs 0.075 af

Subcatchment 6S: Lower Shadowbrook Runoff Area=143,549 sf 5.84% Impervious Runoff Depth>0.81"
Flow Length=392' Tc=7.2 min CN=WQ Runoff=1.72 cfs 0.222 af

Subcatchment 7S: Phase 3 Flow Runoff Area=419,415 sf 2.41% Impervious Runoff Depth>2.44"
Flow Length=1,000' Tc=20.9 min CN=WQ Runoff=17.38 cfs 1.955 af

Reach 1R: Flow Tammy Court Drainage Inflow=5.86 cfs 0.448 af
Outflow=5.86 cfs 0.448 af

Reach 2R: Existing CB 1 on Shadowbrook Inflow=5.53 cfs 0.429 af
Outflow=5.53 cfs 0.429 af

Reach 3R: Existing CB2 on Shadowbrook Inflow=2.50 cfs 0.199 af
Outflow=2.50 cfs 0.199 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=5.26 cfs 0.410 af
Outflow=5.26 cfs 0.410 af

Reach 5R: Canterberry Ct Drainage Inflow=0.58 cfs 0.075 af
Outflow=0.58 cfs 0.075 af

Reach 6R: Lower Shadowbrook Drive Drainage Inflow=1.72 cfs 0.222 af
Outflow=1.72 cfs 0.222 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=12.81 cfs 1.080 af
Primary=12.81 cfs 1.080 af

Link B: Detention Pond at Beginning of Development Inflow=8.58 cfs 0.703 af
Primary=8.58 cfs 0.703 af

Link C: Wetlands Inflow=17.38 cfs 1.955 af
Primary=17.38 cfs 1.955 af

Total Runoff Area = 20.68 ac Runoff Volume = 3.738 af Average Runoff Depth = 2.17"
95.52% Pervious = 19.76 ac 4.48% Impervious = 0.93 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 5.86 cfs @ 12.09 hrs, Volume= 0.448 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
48,545	80	>75% Grass cover, Good, HSG D
33,359	39	>75% Grass cover, Good, HSG A
13,097	77	Woods, Good, HSG D
3,915	76	Gravel roads, HSG A
98,916		Weighted Average
98,916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	50	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	191	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	56	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	347	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 5.53 cfs @ 12.10 hrs, Volume= 0.429 af, Depth> 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
51,979	80	>75% Grass cover, Good, HSG D
24,417	39	>75% Grass cover, Good, HSG A
857	77	Woods, Good, HSG D
3,925	98	Paved parking, HSG A
3,626	76	Gravel roads, HSG A
50	91	Gravel roads, HSG D
84,854		Weighted Average
80,929		95.37% Pervious Area
3,925		4.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.4	65	0.1500	2.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	166	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.0900	4.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.8	76	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	117	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.6	520	Total			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 2.50 cfs @ 12.11 hrs, Volume= 0.199 af, Depth> 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
257	98	Roofs, HSG A
15,078	80	>75% Grass cover, Good, HSG D
5,743	39	>75% Grass cover, Good, HSG A
12,265	77	Woods, Good, HSG D
406	30	Woods, Good, HSG A
1,715	98	Paved parking, HSG A
35,464		Weighted Average
33,492		94.44% Pervious Area
1,972		5.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.1400	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	70	0.0990	1.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	200	0.1600	2.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	16	0.0625	5.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.0	336	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 5.26 cfs @ 12.09 hrs, Volume= 0.410 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
27,749	80	>75% Grass cover, Good, HSG D
20,107	39	>75% Grass cover, Good, HSG A
5,085	74	>75% Grass cover, Good, HSG C
11,216	98	Paved parking, HSG A
2	91	Gravel roads, HSG D
2,816	76	Gravel roads, HSG A
8,447	77	Woods, Good, HSG D
75,422		Weighted Average
64,206		85.13% Pervious Area
11,216		14.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0600	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	59	0.2500	3.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	13	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	48	0.3800	3.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	44	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.6	289	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 5S: Canterberry Court

Runoff = 0.58 cfs @ 12.09 hrs, Volume= 0.075 af, Depth> 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
38,619	39	>75% Grass cover, Good, HSG A
4,241	98	Paved parking, HSG A
450	98	Roofs, HSG A
43,310		Weighted Average
38,619		89.17% Pervious Area
4,691		10.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Drainage System Flow

Runoff = 1.72 cfs @ 12.11 hrs, Volume= 0.222 af, Depth> 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
123,116	39	>75% Grass cover, Good, HSG A
3,236	30	Woods, Good, HSG A
8,809	76	Gravel roads, HSG A
8,388	98	Paved parking, HSG A
143,549		Weighted Average
135,161		94.16% Pervious Area
8,388		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0700	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	25	0.2600	3.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	93	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	23	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.2	110	0.0450	1.48		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	52	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	39	0.0770	1.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	392	Total			

Summary for Subcatchment 7S: Phase 3 Flow

Runoff = 17.38 cfs @ 12.29 hrs, Volume= 1.955 af, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
2,266	98	Paved parking, HSG A
110,852	80	>75% Grass cover, Good, HSG D
114,295	39	>75% Grass cover, Good, HSG A
2,976	74	>75% Grass cover, Good, HSG C
140,321	77	Woods, Good, HSG D
29,651	70	Woods, Good, HSG C
11,194	55	Woods, Good, HSG B
325	98	Paved parking, HSG D
7,535	98	Paved parking, HSG A
419,415		Weighted Average
409,289		97.59% Pervious Area
10,126		2.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.8	383	0.1150	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	397	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	170	0.2000	2.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.9	1,000	Total			

Summary for Reach 1R: Flow Tammy Court Drainage

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

Inflow Area = 2.27 ac, 0.00% Impervious, Inflow Depth > 2.37" for 25-yr event
Inflow = 5.86 cfs @ 12.09 hrs, Volume= 0.448 af
Outflow = 5.86 cfs @ 12.09 hrs, Volume= 0.448 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Existing CB 1 on Shadowbrook

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

Inflow Area = 1.95 ac, 4.63% Impervious, Inflow Depth > 2.65" for 25-yr event
Inflow = 5.53 cfs @ 12.10 hrs, Volume= 0.429 af
Outflow = 5.53 cfs @ 12.10 hrs, Volume= 0.429 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Existing CB2 on Shadowbrook

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

Inflow Area = 0.81 ac, 5.56% Impervious, Inflow Depth > 2.93" for 25-yr event
Inflow = 2.50 cfs @ 12.11 hrs, Volume= 0.199 af
Outflow = 2.50 cfs @ 12.11 hrs, Volume= 0.199 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area = 1.73 ac, 14.87% Impervious, Inflow Depth > 2.84" for 25-yr event
Inflow = 5.26 cfs @ 12.09 hrs, Volume= 0.410 af
Outflow = 5.26 cfs @ 12.09 hrs, Volume= 0.410 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area = 0.99 ac, 10.83% Impervious, Inflow Depth > 0.90" for 25-yr event
Inflow = 0.58 cfs @ 12.09 hrs, Volume= 0.075 af
Outflow = 0.58 cfs @ 12.09 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Drive Drainage

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

Inflow Area = 3.30 ac, 5.84% Impervious, Inflow Depth > 0.81" for 25-yr event
Inflow = 1.72 cfs @ 12.11 hrs, Volume= 0.222 af
Outflow = 1.72 cfs @ 12.11 hrs, Volume= 0.222 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 7.30 ac, 6.17% Impervious, Inflow Depth > 1.78" for 25-yr event
Inflow = 12.81 cfs @ 12.09 hrs, Volume= 1.080 af
Primary = 12.81 cfs @ 12.09 hrs, Volume= 1.080 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: Detention Pond at Beginning of Development

Inflow Area = 3.76 ac, 6.47% Impervious, Inflow Depth > 2.25" for 25-yr event
Inflow = 8.58 cfs @ 12.10 hrs, Volume= 0.703 af
Primary = 8.58 cfs @ 12.10 hrs, Volume= 0.703 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.63 ac, 2.41% Impervious, Inflow Depth > 2.44" for 25-yr event
Inflow = 17.38 cfs @ 12.29 hrs, Volume= 1.955 af
Primary = 17.38 cfs @ 12.29 hrs, Volume= 1.955 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=98,916 sf 0.00% Impervious Runoff Depth>3.14"
Flow Length=347' Tc=6.0 min CN=WQ Runoff=7.72 cfs 0.594 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=84,854 sf 4.63% Impervious Runoff Depth>3.46"
Flow Length=520' Tc=6.6 min CN=WQ Runoff=7.19 cfs 0.562 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=35,464 sf 5.56% Impervious Runoff Depth>3.82"
Flow Length=336' Tc=8.0 min CN=WQ Runoff=3.23 cfs 0.259 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=75,422 sf 14.87% Impervious Runoff Depth>3.68"
Flow Length=289' Tc=6.0 min CN=WQ Runoff=6.77 cfs 0.531 af

Subcatchment 5S: Canterberry Court Runoff Area=43,310 sf 10.83% Impervious Runoff Depth>1.32"
Flow Length=187' Tc=6.0 min CN=WQ Runoff=0.93 cfs 0.109 af

Subcatchment 6S: Lower Shadowbrook Runoff Area=143,549 sf 5.84% Impervious Runoff Depth>1.22"
Flow Length=392' Tc=7.2 min CN=WQ Runoff=2.79 cfs 0.336 af

Subcatchment 7S: Phase 3 Flow Runoff Area=419,415 sf 2.41% Impervious Runoff Depth>3.23"
Flow Length=1,000' Tc=20.9 min CN=WQ Runoff=23.00 cfs 2.592 af

Reach 1R: Flow Tammy Court Drainage Inflow=7.72 cfs 0.594 af
Outflow=7.72 cfs 0.594 af

Reach 2R: Existing CB 1 on Shadowbrook Inflow=7.19 cfs 0.562 af
Outflow=7.19 cfs 0.562 af

Reach 3R: Existing CB2 on Shadowbrook Inflow=3.23 cfs 0.259 af
Outflow=3.23 cfs 0.259 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=6.77 cfs 0.531 af
Outflow=6.77 cfs 0.531 af

Reach 5R: Canterberry Ct Drainage Inflow=0.93 cfs 0.109 af
Outflow=0.93 cfs 0.109 af

Reach 6R: Lower Shadowbrook Drive Drainage Inflow=2.79 cfs 0.336 af
Outflow=2.79 cfs 0.336 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=17.16 cfs 1.460 af
Primary=17.16 cfs 1.460 af

Link B: Detention Pond at Beginning of Development Inflow=11.32 cfs 0.930 af
Primary=11.32 cfs 0.930 af

Link C: Wetlands Inflow=23.00 cfs 2.592 af
Primary=23.00 cfs 2.592 af

Total Runoff Area = 20.68 ac Runoff Volume = 4.983 af Average Runoff Depth = 2.89"
95.52% Pervious = 19.76 ac 4.48% Impervious = 0.93 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 7.72 cfs @ 12.09 hrs, Volume= 0.594 af, Depth> 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
48,545	80	>75% Grass cover, Good, HSG D
33,359	39	>75% Grass cover, Good, HSG A
13,097	77	Woods, Good, HSG D
3,915	76	Gravel roads, HSG A
98,916		Weighted Average
98,916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	50	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	191	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	56	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	347	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 7.19 cfs @ 12.10 hrs, Volume= 0.562 af, Depth> 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
51,979	80	>75% Grass cover, Good, HSG D
24,417	39	>75% Grass cover, Good, HSG A
857	77	Woods, Good, HSG D
3,925	98	Paved parking, HSG A
3,626	76	Gravel roads, HSG A
50	91	Gravel roads, HSG D
84,854		Weighted Average
80,929		95.37% Pervious Area
3,925		4.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.4	65	0.1500	2.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	166	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	46	0.0900	4.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.8	76	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	117	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.6	520	Total			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 3.23 cfs @ 12.11 hrs, Volume= 0.259 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
257	98	Roofs, HSG A
15,078	80	>75% Grass cover, Good, HSG D
5,743	39	>75% Grass cover, Good, HSG A
12,265	77	Woods, Good, HSG D
406	30	Woods, Good, HSG A
1,715	98	Paved parking, HSG A
35,464		Weighted Average
33,492		94.44% Pervious Area
1,972		5.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.1400	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	70	0.0990	1.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	200	0.1600	2.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	16	0.0625	5.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.0	336	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 6.77 cfs @ 12.09 hrs, Volume= 0.531 af, Depth> 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
27,749	80	>75% Grass cover, Good, HSG D
20,107	39	>75% Grass cover, Good, HSG A
5,085	74	>75% Grass cover, Good, HSG C
11,216	98	Paved parking, HSG A
2	91	Gravel roads, HSG D
2,816	76	Gravel roads, HSG A
8,447	77	Woods, Good, HSG D
75,422		Weighted Average
64,206		85.13% Pervious Area
11,216		14.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0600	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	59	0.2500	3.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	13	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	48	0.3800	3.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	44	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.6	289	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 5S: Canterberry Court

Runoff = 0.93 cfs @ 12.11 hrs, Volume= 0.109 af, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
38,619	39	>75% Grass cover, Good, HSG A
4,241	98	Paved parking, HSG A
450	98	Roofs, HSG A
43,310		Weighted Average
38,619		89.17% Pervious Area
4,691		10.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Drainage System Flow

Runoff = 2.79 cfs @ 12.13 hrs, Volume= 0.336 af, Depth> 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
123,116	39	>75% Grass cover, Good, HSG A
3,236	30	Woods, Good, HSG A
8,809	76	Gravel roads, HSG A
8,388	98	Paved parking, HSG A
143,549		Weighted Average
135,161		94.16% Pervious Area
8,388		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	50	0.0700	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	25	0.2600	3.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	93	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	23	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.2	110	0.0450	1.48		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	52	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	39	0.0770	1.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.2	392	Total			

Summary for Subcatchment 7S: Phase 3 Flow

Runoff = 23.00 cfs @ 12.29 hrs, Volume= 2.592 af, Depth> 3.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
2,266	98	Paved parking, HSG A
110,852	80	>75% Grass cover, Good, HSG D
114,295	39	>75% Grass cover, Good, HSG A
2,976	74	>75% Grass cover, Good, HSG C
140,321	77	Woods, Good, HSG D
29,651	70	Woods, Good, HSG C
11,194	55	Woods, Good, HSG B
325	98	Paved parking, HSG D
7,535	98	Paved parking, HSG A
419,415		Weighted Average
409,289		97.59% Pervious Area
10,126		2.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.8	383	0.1150	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.0	397	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	170	0.2000	2.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.9	1,000	Total			

Summary for Reach 1R: Flow Tammy Court Drainage

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

Inflow Area = 2.27 ac, 0.00% Impervious, Inflow Depth > 3.14" for 50-yr event
Inflow = 7.72 cfs @ 12.09 hrs, Volume= 0.594 af
Outflow = 7.72 cfs @ 12.09 hrs, Volume= 0.594 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Existing CB 1 on Shadowbrook

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

Inflow Area = 1.95 ac, 4.63% Impervious, Inflow Depth > 3.46" for 50-yr event
Inflow = 7.19 cfs @ 12.10 hrs, Volume= 0.562 af
Outflow = 7.19 cfs @ 12.10 hrs, Volume= 0.562 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Existing CB2 on Shadowbrook

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

Inflow Area = 0.81 ac, 5.56% Impervious, Inflow Depth > 3.82" for 50-yr event
Inflow = 3.23 cfs @ 12.11 hrs, Volume= 0.259 af
Outflow = 3.23 cfs @ 12.11 hrs, Volume= 0.259 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area = 1.73 ac, 14.87% Impervious, Inflow Depth > 3.68" for 50-yr event
Inflow = 6.77 cfs @ 12.09 hrs, Volume= 0.531 af
Outflow = 6.77 cfs @ 12.09 hrs, Volume= 0.531 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area = 0.99 ac, 10.83% Impervious, Inflow Depth > 1.32" for 50-yr event
Inflow = 0.93 cfs @ 12.11 hrs, Volume= 0.109 af
Outflow = 0.93 cfs @ 12.11 hrs, Volume= 0.109 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Drive Drainage

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

Inflow Area = 3.30 ac, 5.84% Impervious, Inflow Depth > 1.22" for 50-yr event
Inflow = 2.79 cfs @ 12.13 hrs, Volume= 0.336 af
Outflow = 2.79 cfs @ 12.13 hrs, Volume= 0.336 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 7.30 ac, 6.17% Impervious, Inflow Depth > 2.40" for 50-yr event
Inflow = 17.16 cfs @ 12.10 hrs, Volume= 1.460 af
Primary = 17.16 cfs @ 12.10 hrs, Volume= 1.460 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: Detention Pond at Beginning of Development

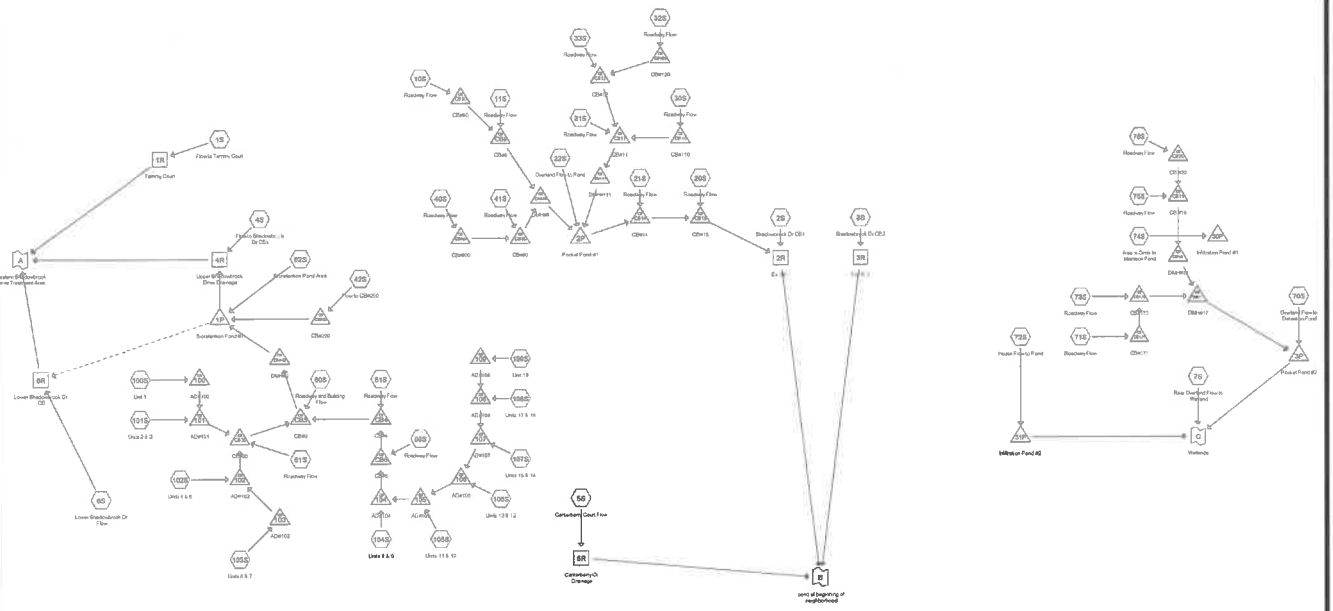
Inflow Area = 3.76 ac, 6.47% Impervious, Inflow Depth > 2.97" for 50-yr event
Inflow = 11.32 cfs @ 12.10 hrs, Volume= 0.930 af
Primary = 11.32 cfs @ 12.10 hrs, Volume= 0.930 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.63 ac, 2.41% Impervious, Inflow Depth > 3.23" for 50-yr event
Inflow = 23.00 cfs @ 12.29 hrs, Volume= 2.592 af
Primary = 23.00 cfs @ 12.29 hrs, Volume= 2.592 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for 1708241-POST-DEVELOPMENT
Prepared by Keach Nordstrom Associates, Inc. , Printed 5/2/2022
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
5.55	39	>75% Grass cover, Good, HSG A (1S, 2S, 3S, 4S, 5S, 6S, 7S, 10S, 11S, 20S, 21S, 22S, 30S, 31S, 32S, 33S, 40S, 41S, 42S, 50S, 51S, 60S, 61S, 62S, 70S, 71S, 72S, 73S, 74S, 75S, 76S)
0.23	74	>75% Grass cover, Good, HSG C (7S, 40S, 42S, 72S, 74S)
4.24	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S, 7S, 10S, 11S, 20S, 21S, 22S, 30S, 31S, 32S, 33S, 40S, 41S, 42S, 70S, 71S, 72S, 74S, 75S, 76S)
2.36	98	Paved parking, HSG A (2S, 3S, 4S, 5S, 6S, 20S, 21S, 22S, 30S, 31S, 32S, 33S, 40S, 41S, 42S, 50S, 51S, 60S, 61S, 71S, 72S, 73S, 75S, 76S)
0.00	98	Paved parking, HSG C (40S)
0.65	98	Paved parking, HSG D (10S, 21S, 30S, 31S, 32S, 40S, 41S, 71S, 72S, 75S, 76S)
1.71	98	Roofs, HSG A (1S, 3S, 5S, 6S, 7S, 10S, 11S, 21S, 22S, 33S, 40S, 41S, 42S, 51S, 60S, 70S, 71S, 72S, 74S, 75S, 76S, 100S, 101S, 102S, 103S, 104S, 105S, 106S, 107S, 108S, 109S)
0.04	98	Roofs, HSG C (7S, 40S, 42S, 74S)
1.21	98	Roofs, HSG D (1S, 2S, 7S, 11S, 20S, 21S, 22S, 32S, 33S, 40S, 41S, 42S, 70S, 71S, 72S, 74S, 75S, 76S)
0.08	30	Woods, Good, HSG A (3S, 6S)
0.26	55	Woods, Good, HSG B (7S)
0.60	70	Woods, Good, HSG C (7S)
3.74	77	Woods, Good, HSG D (1S, 3S, 4S, 7S, 32S, 42S, 70S, 76S)
20.68	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
9.70	HSG A	1S, 2S, 3S, 4S, 5S, 6S, 7S, 10S, 11S, 20S, 21S, 22S, 30S, 31S, 32S, 33S, 40S, 41S, 42S, 50S, 51S, 60S, 61S, 62S, 70S, 71S, 72S, 73S, 74S, 75S, 76S, 100S, 101S, 102S, 103S, 104S, 105S, 106S, 107S, 108S, 109S
0.26	HSG B	7S
0.87	HSG C	7S, 40S, 42S, 72S, 74S
9.85	HSG D	1S, 2S, 3S, 4S, 7S, 10S, 11S, 20S, 21S, 22S, 30S, 31S, 32S, 33S, 40S, 41S, 42S, 70S, 71S, 72S, 74S, 75S, 76S
0.00	Other	
20.68		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=57,559 sf 17.28% Impervious Runoff Depth>1.29"
Flow Length=263' Slope=0.6600 '/' Tc=6.0 min CN=WQ Runoff=1.86 cfs 0.142 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=7,546 sf 57.32% Impervious Runoff Depth>1.79"
Flow Length=300' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.32 cfs 0.026 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=24,663 sf 8.93% Impervious Runoff Depth>0.99"
Flow Length=344' Tc=8.6 min CN=WQ Runoff=0.56 cfs 0.047 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=11,312 sf 38.41% Impervious Runoff Depth>1.69"
Tc=6.0 min CN=WQ Runoff=0.47 cfs 0.037 af

Subcatchment 5S: Canterberry Court Flow Runoff Area=36,412 sf 15.94% Impervious Runoff Depth>0.43"
Flow Length=187' Tc=6.0 min CN=WQ Runoff=0.37 cfs 0.030 af

Subcatchment 6S: Lower Shadowbrook Dr Runoff Area=72,715 sf 12.69% Impervious Runoff Depth>0.35"
Flow Length=137' Tc=6.0 min CN=WQ Runoff=0.59 cfs 0.048 af

Subcatchment 7S: Rear Overland Flow to Runoff Area=85,028 sf 6.43% Impervious Runoff Depth>0.84"
Flow Length=183' Tc=11.5 min CN=WQ Runoff=1.43 cfs 0.137 af

Subcatchment 10S: Roadway Flow Runoff Area=13,692 sf 72.11% Impervious Runoff Depth>1.97"
Flow Length=307' Slope=0.0150 '/' Tc=6.0 min CN=WQ Runoff=0.64 cfs 0.052 af

Subcatchment 11S: Roadway Flow Runoff Area=25,722 sf 45.39% Impervious Runoff Depth>1.80"
Flow Length=279' Tc=6.0 min CN=WQ Runoff=1.13 cfs 0.089 af

Subcatchment 20S: Roadway Flow Runoff Area=2,774 sf 40.41% Impervious Runoff Depth>1.54"
Flow Length=65' Tc=6.0 min CN=WQ Runoff=0.10 cfs 0.008 af

Subcatchment 21S: Roadway Flow Runoff Area=9,904 sf 37.65% Impervious Runoff Depth>1.50"
Flow Length=203' Tc=6.0 min CN=WQ Runoff=0.36 cfs 0.028 af

Subcatchment 22S: Overland Flow to Pond Runoff Area=17,710 sf 12.85% Impervious Runoff Depth>0.90"
Flow Length=47' Slope=0.2127 '/' Tc=6.0 min CN=WQ Runoff=0.40 cfs 0.031 af

Subcatchment 30S: Roadway Flow Runoff Area=14,714 sf 52.43% Impervious Runoff Depth>2.00"
Flow Length=276' Tc=6.0 min CN=WQ Runoff=0.72 cfs 0.056 af

Subcatchment 31S: Roadway Flow Runoff Area=17,194 sf 38.30% Impervious Runoff Depth>1.52"
Flow Length=230' Tc=6.0 min CN=WQ Runoff=0.64 cfs 0.050 af

Subcatchment 32S: Roadway Flow Runoff Area=21,651 sf 47.90% Impervious Runoff Depth>1.87"
Flow Length=223' Tc=6.0 min CN=WQ Runoff=0.98 cfs 0.077 af

Subcatchment 33S: Roadway Flow Runoff Area=10,356 sf 52.43% Impervious Runoff Depth>1.63"
Flow Length=257' Tc=6.0 min CN=WQ Runoff=0.40 cfs 0.032 af

Subcatchment 40S: Roadway Flow Runoff Area=11,686 sf 72.99% Impervious Runoff Depth>2.08"
Flow Length=263' Slope=0.0150 '/' Tc=6.0 min CN=WQ Runoff=0.57 cfs 0.046 af

Subcatchment 41S: Roadway Flow Runoff Area=16,070 sf 43.83% Impervious Runoff Depth>1.82"
Flow Length=268' Tc=6.5 min CN=WQ Runoff=0.71 cfs 0.056 af

Subcatchment 42S: Flow to CB#200 Runoff Area=29,920 sf 35.58% Impervious Runoff Depth>1.57"
Flow Length=385' Tc=6.0 min CN=WQ Runoff=1.15 cfs 0.090 af

Subcatchment 50S: Roadway Flow Runoff Area=12,898 sf 58.95% Impervious Runoff Depth>1.61"
Flow Length=300' Tc=6.0 min CN=WQ Runoff=0.49 cfs 0.040 af

Subcatchment 51S: Roadway Flow Runoff Area=12,915 sf 65.19% Impervious Runoff Depth>1.78"
Flow Length=163' Tc=6.0 min CN=WQ Runoff=0.54 cfs 0.044 af

Subcatchment 60S: Roadway and Building Runoff Area=23,012 sf 40.57% Impervious Runoff Depth>1.11"
Flow Length=220' Tc=6.0 min CN=WQ Runoff=0.60 cfs 0.049 af

Subcatchment 61S: Roadway Flow Runoff Area=7,564 sf 83.43% Impervious Runoff Depth>2.28"
Flow Length=152' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.41 cfs 0.033 af

Subcatchment 62S: Bioretention Pond Area Runoff Area=6,453 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 70S: Overland Flow to Runoff Area=128,858 sf 1.40% Impervious Runoff Depth>0.99"
Flow Length=745' Tc=14.6 min CN=WQ Runoff=2.52 cfs 0.244 af

Subcatchment 71S: Roadway Flow Runoff Area=26,495 sf 66.16% Impervious Runoff Depth>1.97"
Flow Length=300' Tc=6.0 min CN=WQ Runoff=1.24 cfs 0.100 af

Subcatchment 72S: House Flow to Pond Runoff Area=49,031 sf 39.15% Impervious Runoff Depth>1.21"
Flow Length=127' Tc=6.0 min CN=WQ Runoff=1.41 cfs 0.113 af

Subcatchment 73S: Roadway Flow Runoff Area=5,932 sf 76.82% Impervious Runoff Depth>2.09"
Flow Length=200' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.29 cfs 0.024 af

Subcatchment 74S: Area in Circle to Runoff Area=17,656 sf 37.64% Impervious Runoff Depth>1.18"
Flow Length=40' Slope=0.1000 '/' Tc=6.0 min CN=WQ Runoff=0.50 cfs 0.040 af

Subcatchment 75S: Roadway Flow Runoff Area=13,639 sf 67.50% Impervious Runoff Depth>2.04"
Flow Length=196' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.66 cfs 0.053 af

Subcatchment 76S: Roadway Flow Runoff Area=93,020 sf 28.84% Impervious Runoff Depth>1.46"
Flow Length=468' Tc=9.0 min CN=WQ Runoff=3.01 cfs 0.260 af

Subcatchment 100S: Unit 1 Runoff Area=920 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment 101S: Units 2 & 3 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 102S: Units 4 & 5 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 103S: Units 6 & 7 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 104S: Units 8 & 9 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 105S: Units 11 & 10 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 106S: Units 13 & 12 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 107S: Units 15 & 14 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 108S: Units 17 & 16 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 109S: Unit 18 Runoff Area=920 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Reach 1R: Tammy Court Inflow=1.86 cfs 0.142 af
Outflow=1.86 cfs 0.142 af

Reach 2R: Ex CB1 Inflow=1.37 cfs 0.538 af
Outflow=1.37 cfs 0.538 af

Reach 3R: Ex CB 2 Inflow=0.56 cfs 0.047 af
Outflow=0.56 cfs 0.047 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=1.02 cfs 0.378 af
Outflow=1.02 cfs 0.378 af

Reach 5R: Canterberry Ct Drainage Inflow=0.37 cfs 0.030 af
Outflow=0.37 cfs 0.030 af

Reach 6R: Lower Shadowbrook Dr CB Inflow=0.59 cfs 0.048 af
Outflow=0.59 cfs 0.048 af

Pond 1P: Bioretention Pond #1 Peak Elev=292.26' Storage=5,577 cf Inflow=4.25 cfs 0.342 af
Primary=0.85 cfs 0.342 af Secondary=0.00 cfs 0.000 af Outflow=0.85 cfs 0.342 af

Pond 2P: Pocket Pond #1 Peak Elev=311.76' Storage=14,665 cf Inflow=6.17 cfs 0.489 af
Outflow=1.01 cfs 0.476 af

Pond 3P: Pocket Pond #2 Peak Elev=273.96' Storage=13,156 cf Inflow=7.01 cfs 0.681 af
Primary=3.08 cfs 0.667 af Secondary=0.00 cfs 0.000 af Outflow=3.08 cfs 0.667 af

Pond 30P: Infiltration Pond #1 Peak Elev=280.44' Storage=675 cf Inflow=0.50 cfs 0.040 af
Outflow=0.04 cfs 0.040 af

Pond 31P: Infiltration Pond #2 Peak Elev=274.65' Storage=2,155 cf Inflow=1.41 cfs 0.113 af
Discarded=0.08 cfs 0.104 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.104 af

Pond 100: AD#100 Peak Elev=295.94' Inflow=0.06 cfs 0.005 af
8.0" Round Culvert n=0.013 L=58.1' S=0.0251 '/' Outflow=0.06 cfs 0.005 af

Pond 101: AD#101 Peak Elev=294.48' Inflow=0.18 cfs 0.014 af
8.0" Round Culvert n=0.013 L=37.0' S=0.0500 '/' Outflow=0.18 cfs 0.014 af

Pond 102: AD#102 Peak Elev=293.24' Inflow=0.24 cfs 0.019 af
8.0" Round Culvert n=0.013 L=27.4' S=0.0201 '/' Outflow=0.24 cfs 0.019 af

Pond 103: AD#103 Peak Elev=294.42' Inflow=0.12 cfs 0.010 af
8.0" Round Culvert n=0.013 L=59.0' S=0.0200 '/' Outflow=0.12 cfs 0.010 af

Pond 104: AD#104 Peak Elev=295.76' Inflow=0.65 cfs 0.053 af
8.0" Round Culvert n=0.013 L=16.6' S=0.0367 '/' Outflow=0.65 cfs 0.053 af

Pond 105: AD#105 Peak Elev=297.96' Inflow=0.53 cfs 0.043 af
8.0" Round Culvert n=0.013 L=53.8' S=0.0400 '/' Outflow=0.53 cfs 0.043 af

Pond 106: AD#106 Peak Elev=300.24' Inflow=0.41 cfs 0.034 af
8.0" Round Culvert n=0.013 L=55.9' S=0.0401 '/' Outflow=0.41 cfs 0.034 af

Pond 107: AD#107 Peak Elev=303.18' Inflow=0.30 cfs 0.024 af
8.0" Round Culvert n=0.013 L=64.0' S=0.0450 '/' Outflow=0.30 cfs 0.024 af

Pond 108: AD#108 Peak Elev=306.08' Inflow=0.18 cfs 0.014 af
8.0" Round Culvert n=0.013 L=64.5' S=0.0448 '/' Outflow=0.18 cfs 0.014 af

Pond 109: AD#109 Peak Elev=308.82' Inflow=0.06 cfs 0.005 af
8.0" Round Culvert n=0.013 L=49.9' S=0.0549 '/' Outflow=0.06 cfs 0.005 af

Pond CB11: CB#11 Peak Elev=311.76' Inflow=2.74 cfs 0.216 af
18.0" Round Culvert n=0.013 L=30.3' S=0.0050 '/' Outflow=2.74 cfs 0.216 af

Pond CB110: CB#110 Peak Elev=311.76' Inflow=0.72 cfs 0.056 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=0.72 cfs 0.056 af

Pond CB12: CB#12 Peak Elev=313.57' Inflow=1.38 cfs 0.110 af
15.0" Round Culvert n=0.013 L=106.0' S=0.0263 '/' Outflow=1.38 cfs 0.110 af

Pond CB120: CB#120 Peak Elev=313.85' Inflow=0.98 cfs 0.077 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=0.98 cfs 0.077 af

Pond CB14: CB#14 Peak Elev=308.28' Inflow=1.08 cfs 0.504 af
15.0" Round Culvert n=0.013 L=37.9' S=0.0150 '/' Outflow=1.08 cfs 0.504 af

Pond CB15: CB#15 Peak Elev=307.62' Inflow=1.10 cfs 0.512 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0539 '/' Outflow=1.10 cfs 0.512 af

Pond CB170: CB#170 Peak Elev=278.50' Inflow=1.53 cfs 0.124 af
15.0" Round Culvert n=0.013 L=36.7' S=0.0199 '/' Outflow=1.53 cfs 0.124 af

Pond CB171: CB#171 Peak Elev=278.81' Inflow=1.24 cfs 0.100 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=1.24 cfs 0.100 af

Pond CB19: CB #19 Peak Elev=277.60' Inflow=3.64 cfs 0.313 af
18.0" Round Culvert n=0.013 L=33.8' S=0.0151 '/' Outflow=3.64 cfs 0.313 af

Pond CB20: CB #20 Peak Elev=278.07' Inflow=3.01 cfs 0.260 af
18.0" Round Culvert n=0.013 L=22.0' S=0.0200 '/' Outflow=3.01 cfs 0.260 af

Pond CB200: CB#200 Peak Elev=292.47' Inflow=1.15 cfs 0.090 af
15.0" Round Culvert n=0.013 L=85.3' S=0.0050 '/' Outflow=1.15 cfs 0.090 af

Pond CB3: CB#3 Peak Elev=293.05' Inflow=3.10 cfs 0.252 af
15.0" Round Culvert n=0.013 L=80.0' S=0.0100 '/' Outflow=3.10 cfs 0.252 af

Pond CB30: CB#30 Peak Elev=293.09' Inflow=0.82 cfs 0.067 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=0.82 cfs 0.067 af

Pond CB4: CB#4 Peak Elev=294.87' Inflow=1.68 cfs 0.136 af
15.0" Round Culvert n=0.013 L=80.9' S=0.0205 '/' Outflow=1.68 cfs 0.136 af

Pond CB5: CB#5 Peak Elev=295.14' Inflow=1.14 cfs 0.092 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=1.14 cfs 0.092 af

Pond CB80: CB#80 Peak Elev=311.76' Inflow=1.28 cfs 0.102 af
15.0" Round Culvert n=0.013 L=15.1' S=0.0053 '/' Outflow=1.28 cfs 0.102 af

Pond CB800: CB#800 Peak Elev=311.76' Inflow=0.57 cfs 0.046 af
15.0" Round Culvert n=0.013 L=22.7' S=0.0048 '/' Outflow=0.57 cfs 0.046 af

Pond CB9: CB#9 Peak Elev=314.69' Inflow=1.76 cfs 0.140 af
15.0" Round Culvert n=0.013 L=203.6' S=0.0174 '/' Outflow=1.76 cfs 0.140 af

Pond CB90: CB#90 Peak Elev=315.11' Inflow=0.64 cfs 0.052 af
15.0" Round Culvert n=0.013 L=29.8' S=0.0201 '/' Outflow=0.64 cfs 0.052 af

Pond DMH111: DMH#111 Peak Elev=311.76' Inflow=2.74 cfs 0.216 af
24.0" Round Culvert n=0.013 L=40.3' S=0.0050 '/' Outflow=2.74 cfs 0.216 af

Pond DMH17: DMH#17 Peak Elev=275.87' Inflow=5.11 cfs 0.437 af
24.0" Round Culvert n=0.013 L=279.8' S=0.0100 '/' Outflow=5.11 cfs 0.437 af

Pond DMH18: DMH#18 Peak Elev=276.97' Inflow=3.64 cfs 0.313 af
18.0" Round Culvert n=0.013 L=71.6' S=0.0149 '/' Outflow=3.64 cfs 0.313 af

Pond DMH2: DMH#2 Peak Elev=292.27' Inflow=3.10 cfs 0.252 af
18.0" Round Culvert n=0.013 L=50.2' S=0.0030 '/' Outflow=3.10 cfs 0.252 af

Pond DMH8: DMH#8 Peak Elev=311.76' Inflow=3.04 cfs 0.243 af
18.0" Round Culvert n=0.013 L=13.4' S=0.0052 '/' Outflow=3.04 cfs 0.243 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=3.44 cfs 0.568 af
Primary=3.44 cfs 0.568 af

Link B: pond at beginning of neighborhood Inflow=2.28 cfs 0.615 af
Primary=2.28 cfs 0.615 af

Link C: Wetlands Inflow=3.83 cfs 0.804 af
Primary=3.83 cfs 0.804 af

Total Runoff Area = 20.68 ac Runoff Volume = 2.168 af Average Runoff Depth = 1.26"
71.10% Pervious = 14.70 ac 28.90% Impervious = 5.98 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 1.86 cfs @ 12.09 hrs, Volume= 0.142 af, Depth> 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
3,365	98	Roofs, HSG D
6,582	98	Roofs, HSG A
34,775	80	>75% Grass cover, Good, HSG D
8,430	39	>75% Grass cover, Good, HSG A
4,407	77	Woods, Good, HSG D
57,559		Weighted Average
47,612		82.72% Pervious Area
9,947		17.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	50	0.6600	0.57		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	213	0.6600	5.69		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	263	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.026 af, Depth> 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
4,085	98	Paved parking, HSG A
240	98	Roofs, HSG D
1,432	80	>75% Grass cover, Good, HSG D
1,789	39	>75% Grass cover, Good, HSG A
7,546		Weighted Average
3,221		42.68% Pervious Area
4,325		57.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.5	250	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 0.56 cfs @ 12.13 hrs, Volume= 0.047 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
257	98	Roofs, HSG A
6,196	80	>75% Grass cover, Good, HSG D
5,530	39	>75% Grass cover, Good, HSG A
10,329	77	Woods, Good, HSG D
405	30	Woods, Good, HSG A
1,946	98	Paved parking, HSG A
24,663		Weighted Average
22,460		91.07% Pervious Area
2,203		8.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1200	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
1.9	226	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	48	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	20	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.6	344	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 0.47 cfs @ 12.09 hrs, Volume= 0.037 af, Depth> 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
2,537	80	>75% Grass cover, Good, HSG D
400	39	>75% Grass cover, Good, HSG A
0	74	>75% Grass cover, Good, HSG C
4,345	98	Paved parking, HSG A
4,030	77	Woods, Good, HSG D
11,312		Weighted Average
6,967		61.59% Pervious Area
4,345		38.41% Impervious Area

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

Summary for Subcatchment 5S: Canterberry Court Flow

Runoff = 0.37 cfs @ 12.09 hrs, Volume= 0.030 af, Depth> 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,564	98	Roofs, HSG A
30,607	39	>75% Grass cover, Good, HSG A
4,241	98	Paved parking, HSG A
36,412		Weighted Average
30,607		84.06% Pervious Area
5,805		15.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Dr Flow

Runoff = 0.59 cfs @ 12.09 hrs, Volume= 0.048 af, Depth> 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,440	98	Roofs, HSG A
3,236	30	Woods, Good, HSG A
60,250	39	>75% Grass cover, Good, HSG A
7,789	98	Paved parking, HSG A
72,715		Weighted Average
63,486		87.31% Pervious Area
9,229		12.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	38	0.4500	4.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.3600	3.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.0	137	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 7S: Rear Overland Flow to Wetland

Runoff = 1.43 cfs @ 12.17 hrs, Volume= 0.137 af, Depth> 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
2,935	98	Roofs, HSG D
2,417	98	Roofs, HSG A
118	98	Roofs, HSG C
10,710	80	>75% Grass cover, Good, HSG D
8,039	39	>75% Grass cover, Good, HSG A
4,292	74	>75% Grass cover, Good, HSG C
19,271	77	Woods, Good, HSG D
26,053	70	Woods, Good, HSG C
11,193	55	Woods, Good, HSG B
85,028		Weighted Average
79,558		93.57% Pervious Area
5,470		6.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
1.7	133	0.0650	1.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.5	183	Total			

Summary for Subcatchment 10S: Roadway Flow

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 0.052 af, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
3,052	98	Roofs, HSG A
12	80	>75% Grass cover, Good, HSG D
3,807	39	>75% Grass cover, Good, HSG A
506	98	Paved parking, HSG D
6,315	98	Roofs, HSG A
13,692		Weighted Average
3,819		27.89% Pervious Area
9,873		72.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0150	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.7	257	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.5	307	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 11S: Roadway Flow

Runoff = 1.13 cfs @ 12.09 hrs, Volume= 0.089 af, Depth> 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
6,240	98	Roofs, HSG D
11,906	80	>75% Grass cover, Good, HSG D
2,142	39	>75% Grass cover, Good, HSG A
1,643	98	Roofs, HSG D
3,791	98	Roofs, HSG A
25,722		Weighted Average
14,048		54.61% Pervious Area
11,674		45.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	24	0.3300	0.37		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.3	26	0.0600	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.8	46	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	183	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	279	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 20S: Roadway Flow

Runoff = 0.10 cfs @ 12.09 hrs, Volume= 0.008 af, Depth> 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
396	98	Roofs, HSG D
993	80	>75% Grass cover, Good, HSG D
660	39	>75% Grass cover, Good, HSG A
725	98	Paved parking, HSG A
2,774		Weighted Average
1,653		59.59% Pervious Area
1,121		40.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	65	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 21S: Roadway Flow

Runoff = 0.36 cfs @ 12.09 hrs, Volume= 0.028 af, Depth> 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,651	98	Roofs, HSG D
365	98	Roofs, HSG A
3,879	80	>75% Grass cover, Good, HSG D
2,296	39	>75% Grass cover, Good, HSG A
4	98	Paved parking, HSG D
1,709	98	Paved parking, HSG A
9,904		Weighted Average
6,175		62.35% Pervious Area
3,729		37.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.9	98	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	55	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.1	203	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 22S: Overland Flow to Pond

Runoff = 0.40 cfs @ 12.09 hrs, Volume= 0.031 af, Depth> 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,512	98	Roofs, HSG D
645	98	Roofs, HSG A
8,034	80	>75% Grass cover, Good, HSG D
7,400	39	>75% Grass cover, Good, HSG A
119	98	Paved parking, HSG A
17,710		Weighted Average
15,434		87.15% Pervious Area
2,276		12.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	47	0.2127	0.36		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.2	47	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 30S: Roadway Flow

Runoff = 0.72 cfs @ 12.09 hrs, Volume= 0.056 af, Depth> 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
4,540	98	Paved parking, HSG D
6,935	80	>75% Grass cover, Good, HSG D
65	39	>75% Grass cover, Good, HSG A
1,636	98	Paved parking, HSG D
1,538	98	Paved parking, HSG A
14,714		Weighted Average
7,000		47.57% Pervious Area
7,714		52.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
1.1	64	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	162	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.6	276	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 31S: Roadway Flow

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 0.050 af, Depth> 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
2,626	98	Paved parking, HSG D
1,214	98	Paved parking, HSG A
6,749	80	>75% Grass cover, Good, HSG D
3,860	39	>75% Grass cover, Good, HSG A
2,745	98	Paved parking, HSG A
17,194		Weighted Average
10,609		61.70% Pervious Area
6,585		38.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	50	0.2800	0.40		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	60	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	120	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	230	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 32S: Roadway Flow

Runoff = 0.98 cfs @ 12.09 hrs, Volume= 0.077 af, Depth> 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
5,015	98	Roofs, HSG D
8,256	80	>75% Grass cover, Good, HSG D
991	39	>75% Grass cover, Good, HSG A
1,964	98	Paved parking, HSG D
3,391	98	Paved parking, HSG A
2,034	77	Woods, Good, HSG D
21,651		Weighted Average
11,281		52.10% Pervious Area
10,370		47.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2500	0.17		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	10	0.2000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	63	0.3300	4.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	110	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.6	223	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 33S: Roadway Flow

Runoff = 0.40 cfs @ 12.09 hrs, Volume= 0.032 af, Depth> 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
948	98	Roofs, HSG D
395	98	Roofs, HSG A
1,701	80	>75% Grass cover, Good, HSG D
3,225	39	>75% Grass cover, Good, HSG A
4,087	98	Paved parking, HSG A
10,356		Weighted Average
4,926		47.57% Pervious Area
5,430		52.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.2	37	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.8	257	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 40S: Roadway Flow

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
752	98	Roofs, HSG D
1,321	98	Roofs, HSG A
391	98	Roofs, HSG C
780	80	>75% Grass cover, Good, HSG D
2,326	39	>75% Grass cover, Good, HSG A
50	74	>75% Grass cover, Good, HSG C
1,115	98	Paved parking, HSG D
4,921	98	Paved parking, HSG A
30	98	Paved parking, HSG C
11,686		Weighted Average
3,156		27.01% Pervious Area
8,530		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0150	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.4	213	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	263	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 41S: Roadway Flow

Runoff = 0.71 cfs @ 12.10 hrs, Volume= 0.056 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
2,949	98	Roofs, HSG D
157	98	Roofs, HSG A
8,262	80	>75% Grass cover, Good, HSG D
765	39	>75% Grass cover, Good, HSG A
1,393	98	Paved parking, HSG D
2,544	98	Paved parking, HSG A
16,070		Weighted Average
9,027		56.17% Pervious Area
7,043		43.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0250	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.5	10	0.3300	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	80	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	138	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.5	268	Total			

Summary for Subcatchment 42S: Flow to CB#200

Runoff = 1.15 cfs @ 12.09 hrs, Volume= 0.090 af, Depth> 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
3,134	39	>75% Grass cover, Good, HSG A
10,383	80	>75% Grass cover, Good, HSG D
3,530	74	>75% Grass cover, Good, HSG C
5,484	98	Paved parking, HSG A
2,228	77	Woods, Good, HSG D
170	98	Roofs, HSG A
90	98	Roofs, HSG C
2,670	98	Roofs, HSG D
1,237	98	Roofs, HSG A
994	98	Roofs, HSG C
29,920		Weighted Average
19,275		64.42% Pervious Area
10,645		35.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.2	335	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.9	385	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 50S: Roadway Flow

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
5,295	39	>75% Grass cover, Good, HSG A
7,603	98	Paved parking, HSG A
12,898		Weighted Average
5,295		41.05% Pervious Area
7,603		58.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0550	1.71		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.9	250	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 51S: Roadway Flow

Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.044 af, Depth> 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
3,027	98	Roofs, HSG A
4,496	39	>75% Grass cover, Good, HSG A
5,392	98	Paved parking, HSG A
12,915		Weighted Average
4,496		34.81% Pervious Area
8,419		65.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	76	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.1	163	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 60S: Roadway and Building Flow

Runoff = 0.60 cfs @ 12.09 hrs, Volume= 0.049 af, Depth> 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
3,213	98	Roofs, HSG A
13,675	39	>75% Grass cover, Good, HSG A
6,124	98	Paved parking, HSG A
23,012		Weighted Average
13,675		59.43% Pervious Area
9,337		40.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.6	155	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.3	220	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 61S: Roadway Flow

Runoff = 0.41 cfs @ 12.09 hrs, Volume= 0.033 af, Depth> 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,253	39	>75% Grass cover, Good, HSG A
6,311	98	Paved parking, HSG A
7,564		Weighted Average
1,253		16.57% Pervious Area
6,311		83.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.6	102	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	152	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 62S: Bioretention Pond Area

[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-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
6,453	39	>75% Grass cover, Good, HSG A
6,453		100.00% Pervious Area

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

Summary for Subcatchment 70S: Overland Flow to Detention Pond

Runoff = 2.52 cfs @ 12.21 hrs, Volume= 0.244 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
607	98	Roofs, HSG D
1,192	98	Roofs, HSG A
24,819	80	>75% Grass cover, Good, HSG D
13,185	39	>75% Grass cover, Good, HSG A
89,055	77	Woods, Good, HSG D
128,858		Weighted Average
127,059		98.60% Pervious Area
1,799		1.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0800	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.6	391	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	304	0.0430	1.45		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.6	745	Total			

Summary for Subcatchment 71S: Roadway Flow

Runoff = 1.24 cfs @ 12.09 hrs, Volume= 0.100 af, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
2,572	98	Roofs, HSG D
3,565	98	Roofs, HSG A
3,581	80	>75% Grass cover, Good, HSG D
5,385	39	>75% Grass cover, Good, HSG A
1,533	98	Paved parking, HSG D
9,859	98	Paved parking, HSG A
26,495		Weighted Average
8,966		33.84% Pervious Area
17,529		66.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
1.5	250	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.9	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 72S: House Flow to Pond

Runoff = 1.41 cfs @ 12.09 hrs, Volume= 0.113 af, Depth> 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
2,848	98	Roofs, HSG D
9,725	98	Roofs, HSG A
23,884	39	>75% Grass cover, Good, HSG A
4,734	80	>75% Grass cover, Good, HSG D
1,216	74	>75% Grass cover, Good, HSG C
1,330	98	Paved parking, HSG D
5,294	98	Paved parking, HSG A
49,031		Weighted Average
29,834		60.85% Pervious Area
19,197		39.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.3	77	0.3100	3.90		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	127	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 73S: Roadway Flow

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 0.024 af, Depth> 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,375	39	>75% Grass cover, Good, HSG A
4,557	98	Paved parking, HSG A
5,932		Weighted Average
1,375		23.18% Pervious Area
4,557		76.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.9	150	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	200	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 74S: Area in Circle to Infiltration Pond

Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
4,851	98	Roofs, HSG A
8,558	39	>75% Grass cover, Good, HSG A
1,547	98	Roofs, HSG D
248	98	Roofs, HSG C
1,588	80	>75% Grass cover, Good, HSG D
864	74	>75% Grass cover, Good, HSG C
17,656		Weighted Average
11,010		62.36% Pervious Area
6,646		37.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	40	0.1000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.6	40	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 75S: Roadway Flow

Runoff = 0.66 cfs @ 12.09 hrs, Volume= 0.053 af, Depth> 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
295	98	Roofs, HSG D
1,380	98	Roofs, HSG A
2,209	80	>75% Grass cover, Good, HSG D
2,224	39	>75% Grass cover, Good, HSG A
4,186	98	Paved parking, HSG D
3,345	98	Paved parking, HSG A
13,639		Weighted Average
4,433		32.50% Pervious Area
9,206		67.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.8	146	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	196	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 76S: Roadway Flow

Runoff = 3.01 cfs @ 12.13 hrs, Volume= 0.260 af, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
14,560	98	Roofs, HSG D
1,133	98	Roofs, HSG A
24,384	80	>75% Grass cover, Good, HSG D
10,102	39	>75% Grass cover, Good, HSG A
31,709	77	Woods, Good, HSG D
7,686	98	Paved parking, HSG D
3,446	98	Paved parking, HSG A
93,020		Weighted Average
66,195		71.16% Pervious Area
26,825		28.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1200	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.9	130	0.2150	2.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.0	120	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	168	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.0	468	Total			

Summary for Subcatchment 100S: Unit 1

Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
920	98	Roofs, HSG A
920		100.00% Impervious Area

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

Summary for Subcatchment 101S: Units 2 & 3

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 102S: Units 4 & 5

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 103S: Units 6 & 7

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 104S: Units 8 & 9

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 105S: Units 11 & 10

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 106S: Units 13 & 12

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 107S: Units 15 & 14

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 108S: Units 17 & 16

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 109S: Unit 18

Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=2.96"

Area (sf)	CN	Description
920	98	Roofs, HSG A
920		100.00% Impervious Area

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

Summary for Reach 1R: Tammy Court

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

Inflow Area = 1.32 ac, 17.28% Impervious, Inflow Depth > 1.29" for 2-yr event
Inflow = 1.86 cfs @ 12.09 hrs, Volume= 0.142 af
Outflow = 1.86 cfs @ 12.09 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Ex CB1

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

Inflow Area = 3.88 ac, 46.55% Impervious, Inflow Depth > 1.66" for 2-yr event
Inflow = 1.37 cfs @ 12.10 hrs, Volume= 0.538 af
Outflow = 1.37 cfs @ 12.10 hrs, Volume= 0.538 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Ex CB 2

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

Inflow Area = 0.57 ac, 8.93% Impervious, Inflow Depth > 0.99" for 2-yr event
Inflow = 0.56 cfs @ 12.13 hrs, Volume= 0.047 af
Outflow = 0.56 cfs @ 12.13 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area = 2.77 ac, 52.41% Impervious, Inflow Depth > 1.64" for 2-yr event
Inflow = 1.02 cfs @ 12.12 hrs, Volume= 0.378 af
Outflow = 1.02 cfs @ 12.12 hrs, Volume= 0.378 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area = 0.84 ac, 15.94% Impervious, Inflow Depth > 0.43" for 2-yr event
Inflow = 0.37 cfs @ 12.09 hrs, Volume= 0.030 af
Outflow = 0.37 cfs @ 12.09 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Dr CB

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

Inflow Area = 1.67 ac, 12.69% Impervious, Inflow Depth > 0.35" for 2-yr event
Inflow = 0.59 cfs @ 12.09 hrs, Volume= 0.048 af
Outflow = 0.59 cfs @ 12.09 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Bioretention Pond #1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=18)

Inflow Area = 2.51 ac, 53.85% Impervious, Inflow Depth > 1.63" for 2-yr event
Inflow = 4.25 cfs @ 12.09 hrs, Volume= 0.342 af
Outflow = 0.85 cfs @ 12.52 hrs, Volume= 0.342 af, Atten= 80%, Lag= 26.0 min
Primary = 0.85 cfs @ 12.52 hrs, Volume= 0.342 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 292.26' @ 12.52 hrs Surf.Area= 3,125 sf Storage= 5,577 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 88.6 min (855.7 - 767.1)

Volume	Invert	Avail.Storage	Storage Description
#1	288.00'	12,114 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
288.00	349	0	0
290.00	1,016	1,365	1,365
291.00	1,441	1,229	2,594
292.00	2,931	2,186	4,780
294.00	4,403	7,334	12,114

Device	Routing	Invert	Outlet Devices
#1	Secondary	293.80'	**4.0' 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	Device 5	288.00'	**10.000 in/hr Exfiltration over Surface area**
#3	Device 5	292.10'	**15.0" Vert. Orifice/Grate** C= 0.600
#4	Device 5	293.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	285.00'	**12.0" Round Culvert** L= 55.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 285.00' / 283.04' S= 0.0354 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.85 cfs @ 12.52 hrs HW=292.26' TW=0.00' (Dynamic Tailwater)
↑└─**5=Culvert** (Passes 0.85 cfs of 9.83 cfs potential flow)
↑ ├─**2=Exfiltration** (Exfiltration Controls 0.72 cfs)
 ├─**3=Orifice/Grate** (Orifice Controls 0.13 cfs @ 1.37 fps)
 └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=288.00' TW=0.00' (Dynamic Tailwater)
↑└─**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Pocket Pond #1

[80] Warning: Exceeded Pond DMH111 by 0.12' @ 12.15 hrs (3.79 cfs 0.134 af)
[80] Warning: Exceeded Pond DMH8 by 0.08' @ 12.15 hrs (2.35 cfs 0.061 af)

Inflow Area = 3.42 ac, 46.71% Impervious, Inflow Depth > 1.72" for 2-yr event
Inflow = 6.17 cfs @ 12.09 hrs, Volume= 0.489 af
Outflow = 1.01 cfs @ 12.58 hrs, Volume= 0.476 af, Atten= 84%, Lag= 29.3 min
Primary = 1.01 cfs @ 12.58 hrs, Volume= 0.476 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 309.79' Surf.Area= 3,009 sf Storage= 5,826 cf
Peak Elev= 311.76' @ 12.58 hrs Surf.Area= 6,282 sf Storage= 14,665 cf (8,839 cf above start)

Plug-Flow detention time= 309.6 min calculated for 0.342 af (70% of inflow)
Center-of-Mass det. time= 122.4 min (903.1 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1	306.00'	27,930 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
306.00	306	196.0	0	0	306
308.00	1,616	240.0	1,750	1,750	1,894
310.00	3,201	285.0	4,728	6,478	3,846
312.00	6,785	438.0	9,764	16,242	12,678
313.50	8,844	470.0	11,688	27,930	15,088

Device	Routing	Invert	Outlet Devices
#1	Device 4	309.80'	**4.5" Vert. Orifice/Grate** C= 0.600
#2	Device 4	311.50'	**14.0" Vert. Orifice/Grate** C= 0.600
#3	Device 4	313.10'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	309.75'	**15.0" Round Culvert** L= 93.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.75' / 307.89' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.01 cfs @ 12.58 hrs HW=311.76' TW=308.28' (Dynamic Tailwater)
- **4=Culvert** (Passes 1.01 cfs of 6.95 cfs potential flow)
  - **1=Orifice/Grate** (Orifice Controls 0.71 cfs @ 6.41 fps)
  - **2=Orifice/Grate** (Orifice Controls 0.30 cfs @ 1.73 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 3P: Pocket Pond #2

Inflow Area = 6.15 ac, 22.36% Impervious, Inflow Depth > 1.33" for 2-yr event
Inflow = 7.01 cfs @ 12.13 hrs, Volume= 0.681 af
Outflow = 3.08 cfs @ 12.47 hrs, Volume= 0.667 af, Atten= 56%, Lag= 20.6 min
Primary = 3.08 cfs @ 12.47 hrs, Volume= 0.667 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 271.98' Surf.Area= 2,847 sf Storage= 5,675 cf
Peak Elev= 273.96' @ 12.47 hrs Surf.Area= 4,722 sf Storage= 13,156 cf (7,481 cf above start)

Plug-Flow detention time= 162.2 min calculated for 0.536 af (79% of inflow)
Center-of-Mass det. time= 34.9 min (847.3 - 812.4)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	25,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	408	0	0
269.00	790	599	599
270.00	1,250	1,020	1,619
272.00	2,863	4,113	5,732
274.00	4,762	7,625	13,357
276.00	6,894	11,656	25,013

Device	Routing	Invert	Outlet Devices
#1	Device 4	272.00'	**9.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	275.35'	**10.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#3	Device 4	273.80'	**24.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600
#4	Primary	272.00'	**18.0" Round Culvert** L= 105.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.57' S= 0.0041 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#5	Primary	275.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.07 cfs @ 12.47 hrs HW=273.96' TW=0.00' (Dynamic Tailwater)
- 4=**Culvert** (Passes 3.07 cfs of 7.55 cfs potential flow)
  - 1=**Orifice/Grate** (Orifice Controls 2.67 cfs @ 6.05 fps)
  - 3=**Orifice/Grate** (Orifice Controls 0.39 cfs @ 1.26 fps)
- 5=**Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=271.98' TW=0.00' (Dynamic Tailwater)
- 2=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 30P: Infiltration Pond #1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=19)

Inflow Area = 0.41 ac, 37.64% Impervious, Inflow Depth > 1.18" for 2-yr event
Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.040 af
Outflow = 0.04 cfs @ 13.06 hrs, Volume= 0.040 af, Atten= 91%, Lag= 58.5 min
Discarded = 0.04 cfs @ 13.06 hrs, Volume= 0.040 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 280.44' @ 13.06 hrs Surf.Area= 1,822 sf Storage= 675 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 135.6 min (905.5 - 769.9)

Volume	Invert	Avail.Storage	Storage Description
#1	280.00'	5,166 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
280.00	1,214	0	0
282.00	3,952	5,166	5,166

Device	Routing	Invert	Outlet Devices
#1	Discarded	280.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.04 cfs @ 13.06 hrs HW=280.44' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Summary for Pond 31P: Infiltration Pond #2

[92] Warning: Device #4 is above defined storage

Inflow Area = 1.13 ac, 39.15% Impervious, Inflow Depth > 1.21" for 2-yr event
Inflow = 1.41 cfs @ 12.09 hrs, Volume= 0.113 af
Outflow = 0.08 cfs @ 13.90 hrs, Volume= 0.104 af, Atten= 94%, Lag= 108.7 min
Discarded = 0.08 cfs @ 13.90 hrs, Volume= 0.104 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 274.65' @ 13.90 hrs Surf.Area= 3,637 sf Storage= 2,155 cf

Plug-Flow detention time= 222.4 min calculated for 0.104 af (92% of inflow)
Center-of-Mass det. time= 180.9 min (949.1 - 768.2)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	7,938 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	3,030	0	0
276.00	4,908	7,938	7,938

Device	Routing	Invert	Outlet Devices
#1	Device 3	275.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	274.00'	**1.000 in/hr Exfiltration over Surface area**
#3	Primary	274.16'	**15.0" Round Culvert** L= 32.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 274.16' / 274.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Primary	276.40'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.08 cfs @ 13.90 hrs HW=274.65' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=274.00' TW=0.00' (Dynamic Tailwater)
├**3=Culvert** (Controls 0.00 cfs)
│└**1=Orifice/Grate** (Controls 0.00 cfs)
└**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 100: AD#100

Inflow Area = 0.02 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr event
Inflow = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af
Outflow = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.94' @ 12.09 hrs
Flood Elev= 297.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	295.81'	**8.0" Round Culvert** L= 58.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 295.81' / 294.35' S= 0.0251 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.06 cfs @ 12.09 hrs HW=295.94' TW=294.48' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.06 cfs @ 1.22 fps)

Summary for Pond 101: AD#101

Inflow Area = 0.06 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr event
Inflow = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af
Outflow = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.48' @ 12.09 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.25'	**8.0" Round Culvert** L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.25' / 292.40' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.17 cfs @ 12.09 hrs HW=294.48' TW=293.01' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.17 cfs @ 1.63 fps)

Summary for Pond 102: AD#102

Inflow Area = 0.08 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr event
Inflow = 0.24 cfs @ 12.09 hrs, Volume= 0.019 af
Outflow = 0.24 cfs @ 12.09 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.09 hrs, Volume= 0.019 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.24' @ 12.13 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.95'	**8.0" Round Culvert** L= 27.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.95' / 292.40' S= 0.0201 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.18 cfs @ 12.09 hrs HW=293.23' TW=293.01' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.18 cfs @ 1.93 fps)

Summary for Pond 103: AD#103

Inflow Area = 0.04 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr event
Inflow = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af
Outflow = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
Primary = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.42' @ 12.09 hrs
Flood Elev= 297.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.23'	**8.0" Round Culvert** L= 59.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.23' / 293.05' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.12 cfs @ 12.09 hrs HW=294.41' TW=293.23' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.12 cfs @ 1.46 fps)

Summary for Pond 104: AD#104

Inflow Area = 0.23 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr event
Inflow = 0.65 cfs @ 12.09 hrs, Volume= 0.053 af
Outflow = 0.65 cfs @ 12.09 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
Primary = 0.65 cfs @ 12.09 hrs, Volume= 0.053 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.76' @ 12.09 hrs
Flood Elev= 299.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	295.27'	**8.0" Round Culvert** L= 16.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 295.27' / 294.66' S= 0.0367 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.63 cfs @ 12.09 hrs HW=295.75' TW=295.13' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.63 cfs @ 2.36 fps)

Summary for Pond 105: AD#105

Inflow Area = 0.19 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr event
Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.043 af
Outflow = 0.53 cfs @ 12.09 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min
Primary = 0.53 cfs @ 12.09 hrs, Volume= 0.043 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 297.96' @ 12.09 hrs
Flood Elev= 301.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	297.53'	**8.0" Round Culvert** L= 53.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 297.53' / 295.38' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.52 cfs @ 12.09 hrs HW=297.95' TW=295.75' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.52 cfs @ 2.22 fps)

Summary for Pond 106: AD#106

Inflow Area = 0.15 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr event
Inflow = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af
Outflow = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
Primary = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 300.24' @ 12.09 hrs
Flood Elev= 303.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	299.87'	**8.0" Round Culvert** L= 55.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 299.87' / 297.63' S= 0.0401 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.40 cfs @ 12.09 hrs HW=300.24' TW=297.95' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.40 cfs @ 2.06 fps)

Summary for Pond 107: AD#107

Inflow Area = 0.11 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr event
Inflow = 0.30 cfs @ 12.09 hrs, Volume= 0.024 af
Outflow = 0.30 cfs @ 12.09 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.09 hrs, Volume= 0.024 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 303.18' @ 12.09 hrs
Flood Elev= 306.63'

Device	Routing	Invert	Outlet Devices
#1	Primary	302.85'	**8.0" Round Culvert** L= 64.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 302.85' / 299.97' S= 0.0450 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.29 cfs @ 12.09 hrs HW=303.17' TW=300.24' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.29 cfs @ 1.71 fps)

Summary for Pond 108: AD#108

Inflow Area = 0.06 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr event
Inflow = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af
Outflow = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 306.08' @ 12.09 hrs
Flood Elev= 309.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	305.85'	**8.0" Round Culvert** L= 64.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 305.85' / 302.96' S= 0.0448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.17 cfs @ 12.09 hrs HW=306.08' TW=303.17' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.17 cfs @ 1.63 fps)

Summary for Pond 109: AD#109

Inflow Area = 0.02 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr event
Inflow = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af
Outflow = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.82' @ 12.09 hrs
Flood Elev= 311.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	308.69'	**8.0" Round Culvert** L= 49.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 308.69' / 305.95' S= 0.0549 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.06 cfs @ 12.09 hrs HW=308.82' TW=306.08' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.06 cfs @ 1.22 fps)

Summary for Pond CB11: CB#11

[80] Warning: Exceeded Pond CB110 by 0.11' @ 12.25 hrs (1.73 cfs 0.067 af)

Inflow Area =	1.47 ac, 47.09% Impervious, Inflow Depth > 1.77" for 2-yr event				
Inflow	=	2.74 cfs @	12.09 hrs, Volume=	0.216 af	
Outflow	=	2.74 cfs @	12.09 hrs, Volume=	0.216 af, Atten= 0%, Lag= 0.0 min	
Primary	=	2.74 cfs @	12.09 hrs, Volume=	0.216 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 311.76' @ 12.67 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.04'	**18.0" Round Culvert** L= 30.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.04' / 309.89' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.59 cfs @ 12.09 hrs HW=311.14' TW=311.06' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.59 cfs @ 1.60 fps)

Summary for Pond CB110: CB#110

Inflow Area =	0.34 ac, 52.43% Impervious, Inflow Depth > 2.00" for 2-yr event				
Inflow	=	0.72 cfs @	12.09 hrs, Volume=	0.056 af	
Outflow	=	0.72 cfs @	12.09 hrs, Volume=	0.056 af, Atten= 0%, Lag= 0.0 min	
Primary	=	0.72 cfs @	12.09 hrs, Volume=	0.056 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 311.76' @ 12.72 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.25'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.25' / 310.14' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.06' TW=311.14' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB12: CB#12

Inflow Area = 0.73 ac, 49.36% Impervious, Inflow Depth > 1.79" for 2-yr event
Inflow = 1.38 cfs @ 12.09 hrs, Volume= 0.110 af
Outflow = 1.38 cfs @ 12.09 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min
Primary = 1.38 cfs @ 12.09 hrs, Volume= 0.110 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.57' @ 12.09 hrs
Flood Elev= 317.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	313.00'	**15.0" Round Culvert** L= 106.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 313.00' / 310.21' S= 0.0263 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.35 cfs @ 12.09 hrs HW=313.56' TW=311.14' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.35 cfs @ 2.55 fps)

Summary for Pond CB120: CB#120

Inflow Area = 0.50 ac, 47.90% Impervious, Inflow Depth > 1.87" for 2-yr event
Inflow = 0.98 cfs @ 12.09 hrs, Volume= 0.077 af
Outflow = 0.98 cfs @ 12.09 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min
Primary = 0.98 cfs @ 12.09 hrs, Volume= 0.077 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.85' @ 12.10 hrs
Flood Elev= 317.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	313.32'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 313.32' / 313.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.90 cfs @ 12.09 hrs HW=313.84' TW=313.56' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.90 cfs @ 2.78 fps)

Summary for Pond CB14: CB#14

Inflow Area = 3.64 ac, 46.14% Impervious, Inflow Depth > 1.66" for 2-yr event
Inflow = 1.08 cfs @ 12.53 hrs, Volume= 0.504 af
Outflow = 1.08 cfs @ 12.53 hrs, Volume= 0.504 af, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 12.53 hrs, Volume= 0.504 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.28' @ 12.53 hrs
Flood Elev= 312.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	307.79'	**15.0" Round Culvert** L= 37.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 307.79' / 307.22' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.08 cfs @ 12.53 hrs HW=308.28' TW=307.62' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.08 cfs @ 2.39 fps)

Summary for Pond CB15: CB#15

Inflow Area = 3.71 ac, 46.04% Impervious, Inflow Depth > 1.66" for 2-yr event
Inflow = 1.10 cfs @ 12.52 hrs, Volume= 0.512 af
Outflow = 1.10 cfs @ 12.52 hrs, Volume= 0.512 af, Atten= 0%, Lag= 0.0 min
Primary = 1.10 cfs @ 12.52 hrs, Volume= 0.512 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 307.62' @ 12.52 hrs
Flood Elev= 312.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	307.12'	**15.0" Round Culvert** L= 120.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 307.12' / 300.65' S= 0.0539 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.10 cfs @ 12.52 hrs HW=307.62' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.10 cfs @ 2.40 fps)

Summary for Pond CB170: CB#170

Inflow Area = 0.74 ac, 68.11% Impervious, Inflow Depth > 1.99" for 2-yr event
Inflow = 1.53 cfs @ 12.09 hrs, Volume= 0.124 af
Outflow = 1.53 cfs @ 12.09 hrs, Volume= 0.124 af, Atten= 0%, Lag= 0.0 min
Primary = 1.53 cfs @ 12.09 hrs, Volume= 0.124 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.50' @ 12.09 hrs
Flood Elev= 281.97'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.90'	**15.0" Round Culvert** L= 36.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 277.90' / 277.17' S= 0.0199 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.49 cfs @ 12.09 hrs HW=278.49' TW=275.84' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.49 cfs @ 2.62 fps)

Summary for Pond CB171: CB#171

Inflow Area = 0.61 ac, 66.16% Impervious, Inflow Depth > 1.97" for 2-yr event
Inflow = 1.24 cfs @ 12.09 hrs, Volume= 0.100 af
Outflow = 1.24 cfs @ 12.09 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min
Primary = 1.24 cfs @ 12.09 hrs, Volume= 0.100 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.81' @ 12.10 hrs
Flood Elev= 281.97'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.22'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.22' / 278.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.15 cfs @ 12.09 hrs HW=278.80' TW=278.49' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.15 cfs @ 3.01 fps)

Summary for Pond CB19: CB #19

Inflow Area = 2.45 ac, 33.78% Impervious, Inflow Depth > 1.53" for 2-yr event
Inflow = 3.64 cfs @ 12.12 hrs, Volume= 0.313 af
Outflow = 3.64 cfs @ 12.12 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.0 min
Primary = 3.64 cfs @ 12.12 hrs, Volume= 0.313 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 277.60' @ 12.14 hrs
Flood Elev= 281.21'

Device	Routing	Invert	Outlet Devices
#1	Primary	276.67'	**18.0" Round Culvert** L= 33.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.67' / 276.16' S= 0.0151 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.38 cfs @ 12.12 hrs HW=277.58' TW=276.95' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 3.38 cfs @ 4.31 fps)

Summary for Pond CB20: CB #20

Inflow Area = 2.14 ac, 28.84% Impervious, Inflow Depth > 1.46" for 2-yr event
Inflow = 3.01 cfs @ 12.13 hrs, Volume= 0.260 af
Outflow = 3.01 cfs @ 12.13 hrs, Volume= 0.260 af, Atten= 0%, Lag= 0.0 min
Primary = 3.01 cfs @ 12.13 hrs, Volume= 0.260 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.07' @ 12.15 hrs
Flood Elev= 281.21'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.21'	**18.0" Round Culvert** L= 22.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 277.21' / 276.77' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.78 cfs @ 12.13 hrs HW=278.05' TW=277.59' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 2.78 cfs @ 3.91 fps)

Summary for Pond CB200: CB#200

Inflow Area = 0.69 ac, 35.58% Impervious, Inflow Depth > 1.57" for 2-yr event
Inflow = 1.15 cfs @ 12.09 hrs, Volume= 0.090 af
Outflow = 1.15 cfs @ 12.09 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min
Primary = 1.15 cfs @ 12.09 hrs, Volume= 0.090 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 292.47' @ 12.09 hrs
Flood Elev= 300.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.88'	**15.0" Round Culvert** L= 85.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 291.88' / 291.45' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.12 cfs @ 12.09 hrs HW=292.46' TW=291.53' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.12 cfs @ 2.94 fps)

Summary for Pond CB3: CB#3

[80] Warning: Exceeded Pond CB30 by 0.06' @ 12.05 hrs (0.61 cfs 0.004 af)

Inflow Area = 1.67 ac, 66.11% Impervious, Inflow Depth > 1.80" for 2-yr event
Inflow = 3.10 cfs @ 12.09 hrs, Volume= 0.252 af
Outflow = 3.10 cfs @ 12.09 hrs, Volume= 0.252 af, Atten= 0%, Lag= 0.0 min
Primary = 3.10 cfs @ 12.09 hrs, Volume= 0.252 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.05' @ 12.10 hrs
Flood Elev= 296.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.09'	**15.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.09' / 291.29' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.89 cfs @ 12.09 hrs HW=293.03' TW=292.22' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 2.89 cfs @ 4.05 fps)

Summary for Pond CB30: CB#30

Inflow Area = 0.32 ac, 91.05% Impervious, Inflow Depth > 2.48" for 2-yr event
Inflow = 0.82 cfs @ 12.09 hrs, Volume= 0.067 af
Outflow = 0.82 cfs @ 12.09 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 12.09 hrs, Volume= 0.067 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.09' @ 12.14 hrs
Flood Elev= 296.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.30'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.30' / 292.19' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=293.01' TW=293.03' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB4: CB#4

Inflow Area = 0.82 ac, 72.75% Impervious, Inflow Depth > 1.98" for 2-yr event
Inflow = 1.68 cfs @ 12.09 hrs, Volume= 0.136 af
Outflow = 1.68 cfs @ 12.09 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min
Primary = 1.68 cfs @ 12.09 hrs, Volume= 0.136 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.87' @ 12.09 hrs
Flood Elev= 298.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.24'	**15.0" Round Culvert** L= 80.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.24' / 292.58' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.64 cfs @ 12.09 hrs HW=294.86' TW=293.03' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.64 cfs @ 2.68 fps)

Summary for Pond CB5: CB#5

Inflow Area = 0.53 ac, 77.00% Impervious, Inflow Depth > 2.10" for 2-yr event
Inflow = 1.14 cfs @ 12.09 hrs, Volume= 0.092 af
Outflow = 1.14 cfs @ 12.09 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min
Primary = 1.14 cfs @ 12.09 hrs, Volume= 0.092 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.14' @ 12.10 hrs
Flood Elev= 298.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.56'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.56' / 294.34' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.03 cfs @ 12.09 hrs HW=295.13' TW=294.86' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.03 cfs @ 2.78 fps)

Summary for Pond CB80: CB#80

[80] Warning: Exceeded Pond CB800 by 0.61' @ 16.90 hrs (1.11 cfs 0.105 af)

Inflow Area =	0.64 ac, 56.11% Impervious, Inflow Depth > 1.93" for 2-yr event				
Inflow	=	1.28 cfs @	12.09 hrs, Volume=	0.102 af	
Outflow	=	1.28 cfs @	12.09 hrs, Volume=	0.102 af, Atten= 0%, Lag= 0.0 min	
Primary	=	1.28 cfs @	12.09 hrs, Volume=	0.102 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 311.76' @ 12.67 hrs
Flood Elev= 314.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.06'	**15.0" Round Culvert** L= 15.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.06' / 309.98' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.07' TW=311.14' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB800: CB#800

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=93)

Inflow Area =	0.27 ac, 72.99% Impervious, Inflow Depth > 2.08" for 2-yr event				
Inflow	=	0.57 cfs @	12.09 hrs, Volume=	0.046 af	
Outflow	=	0.57 cfs @	12.09 hrs, Volume=	0.046 af, Atten= 0%, Lag= 0.0 min	
Primary	=	0.57 cfs @	12.09 hrs, Volume=	0.046 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 311.76' @ 12.72 hrs
Flood Elev= 314.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.27'	**15.0" Round Culvert** L= 22.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.27' / 310.16' S= 0.0048 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=310.95' TW=311.05' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB9: CB#9

Inflow Area = 0.90 ac, 54.67% Impervious, Inflow Depth > 1.86" for 2-yr event
Inflow = 1.76 cfs @ 12.09 hrs, Volume= 0.140 af
Outflow = 1.76 cfs @ 12.09 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min
Primary = 1.76 cfs @ 12.09 hrs, Volume= 0.140 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 314.69' @ 12.09 hrs
Flood Elev= 317.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	314.04'	**15.0" Round Culvert** L= 203.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 314.04' / 310.50' S= 0.0174 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.72 cfs @ 12.09 hrs HW=314.68' TW=311.13' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.72 cfs @ 2.72 fps)

Summary for Pond CB90: CB#90

Inflow Area = 0.31 ac, 72.11% Impervious, Inflow Depth > 1.97" for 2-yr event
Inflow = 0.64 cfs @ 12.09 hrs, Volume= 0.052 af
Outflow = 0.64 cfs @ 12.09 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.64 cfs @ 12.09 hrs, Volume= 0.052 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 315.11' @ 12.09 hrs
Flood Elev= 317.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	314.74'	**15.0" Round Culvert** L= 29.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 314.74' / 314.14' S= 0.0201 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.60 cfs @ 12.09 hrs HW=315.11' TW=314.68' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.60 cfs @ 2.97 fps)

Summary for Pond DMH111: DMH#111

[80] Warning: Exceeded Pond CB11 by 0.08' @ 12.20 hrs (2.03 cfs 0.061 af)

Inflow Area = 1.47 ac, 47.09% Impervious, Inflow Depth > 1.77" for 2-yr event
Inflow = 2.74 cfs @ 12.09 hrs, Volume= 0.216 af
Outflow = 2.74 cfs @ 12.09 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min
Primary = 2.74 cfs @ 12.09 hrs, Volume= 0.216 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 311.76' @ 12.63 hrs
Flood Elev= 314.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	309.79'	**24.0" Round Culvert** L= 40.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.79' / 309.59' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.06' TW=311.14' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond DMH17: DMH#17

Inflow Area = 3.19 ac, 41.78% Impervious, Inflow Depth > 1.64" for 2-yr event
Inflow = 5.11 cfs @ 12.11 hrs, Volume= 0.437 af
Outflow = 5.11 cfs @ 12.11 hrs, Volume= 0.437 af, Atten= 0%, Lag= 0.0 min
Primary = 5.11 cfs @ 12.11 hrs, Volume= 0.437 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 275.87' @ 12.11 hrs
Flood Elev= 279.48'

Device	Routing	Invert	Outlet Devices
#1	Primary	274.89'	**24.0" Round Culvert** L= 279.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 274.89' / 272.09' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.02 cfs @ 12.11 hrs HW=275.86' TW=273.21' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 5.02 cfs @ 3.35 fps)

Summary for Pond DMH18: DMH#18

Inflow Area = 2.45 ac, 33.78% Impervious, Inflow Depth > 1.53" for 2-yr event
Inflow = 3.64 cfs @ 12.12 hrs, Volume= 0.313 af
Outflow = 3.64 cfs @ 12.12 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.0 min
Primary = 3.64 cfs @ 12.12 hrs, Volume= 0.313 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 276.97' @ 12.12 hrs
Flood Elev= 281.88'

Device	Routing	Invert	Outlet Devices
#1	Primary	276.06'	**18.0" Round Culvert**

L= 71.6' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 276.06' / 274.99' S= 0.0149 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.54 cfs @ 12.12 hrs HW=276.95' TW=275.85' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.54 cfs @ 3.22 fps)

Summary for Pond DMH2: DMH#2

Inflow Area = 1.67 ac, 66.11% Impervious, Inflow Depth > 1.80" for 2-yr event
Inflow = 3.10 cfs @ 12.09 hrs, Volume= 0.252 af
Outflow = 3.10 cfs @ 12.09 hrs, Volume= 0.252 af, Atten= 0%, Lag= 0.0 min
Primary = 3.10 cfs @ 12.09 hrs, Volume= 0.252 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 292.27' @ 12.55 hrs
Flood Elev= 297.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.19'	**18.0" Round Culvert** L= 50.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 291.19' / 291.04' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.02 cfs @ 12.09 hrs HW=292.22' TW=291.51' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 3.02 cfs @ 3.30 fps)

Summary for Pond DMH8: DMH#8

[80] Warning: Exceeded Pond CB80 by 0.10' @ 12.20 hrs (1.91 cfs 0.069 af)

Inflow Area = 1.54 ac, 55.26% Impervious, Inflow Depth > 1.89" for 2-yr event
Inflow = 3.04 cfs @ 12.09 hrs, Volume= 0.243 af
Outflow = 3.04 cfs @ 12.09 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.09 hrs, Volume= 0.243 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 311.76' @ 12.62 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	309.88'	**18.0" Round Culvert** L= 13.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.88' / 309.81' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.13' TW=311.15' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 5.76 ac, 32.84% Impervious, Inflow Depth > 1.18" for 2-yr event
Inflow = 3.44 cfs @ 12.10 hrs, Volume= 0.568 af
Primary = 3.44 cfs @ 12.10 hrs, Volume= 0.568 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: pond at beginning of neighborhood

Inflow Area = 5.28 ac, 37.67% Impervious, Inflow Depth > 1.40" for 2-yr event
Inflow = 2.28 cfs @ 12.10 hrs, Volume= 0.615 af
Primary = 2.28 cfs @ 12.10 hrs, Volume= 0.615 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.23 ac, 21.04% Impervious, Inflow Depth > 1.05" for 2-yr event
Inflow = 3.83 cfs @ 12.42 hrs, Volume= 0.804 af
Primary = 3.83 cfs @ 12.42 hrs, Volume= 0.804 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=57,559 sf 17.28% Impervious Runoff Depth>2.73"
Flow Length=263' Slope=0.6600 '/' Tc=6.0 min AMC Adjusted CN=WQ Runoff=3.70 cfs 0.300 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=7,546 sf 57.32% Impervious Runoff Depth>2.73"
Flow Length=300' Slope=0.0200 '/' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.49 cfs 0.039 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=24,663 sf 8.93% Impervious Runoff Depth>2.73"
Flow Length=344' Tc=8.6 min AMC Adjusted CN=WQ Runoff=1.47 cfs 0.129 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=11,312 sf 38.41% Impervious Runoff Depth>2.73"
Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.73 cfs 0.059 af

Subcatchment 5S: Canterberry Court Flow Runoff Area=36,412 sf 15.94% Impervious Runoff Depth>2.73"
Flow Length=187' Tc=6.0 min AMC Adjusted CN=WQ Runoff=2.34 cfs 0.190 af

Subcatchment 6S: Lower Shadowbrook Dr Runoff Area=72,715 sf 12.69% Impervious Runoff Depth>2.73"
Flow Length=137' Tc=6.0 min AMC Adjusted CN=WQ Runoff=4.67 cfs 0.379 af

Subcatchment 7S: Rear Overland Flow to Runoff Area=85,028 sf 6.43% Impervious Runoff Depth>2.72"
Flow Length=183' Tc=11.5 min AMC Adjusted CN=WQ Runoff=4.66 cfs 0.443 af

Subcatchment 10S: Roadway Flow Runoff Area=13,692 sf 72.11% Impervious Runoff Depth>2.73"
Flow Length=307' Slope=0.0150 '/' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.88 cfs 0.071 af

Subcatchment 11S: Roadway Flow Runoff Area=25,722 sf 45.39% Impervious Runoff Depth>2.73"
Flow Length=279' Tc=6.0 min AMC Adjusted CN=WQ Runoff=1.65 cfs 0.134 af

Subcatchment 20S: Roadway Flow Runoff Area=2,774 sf 40.41% Impervious Runoff Depth>2.73"
Flow Length=65' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.18 cfs 0.014 af

Subcatchment 21S: Roadway Flow Runoff Area=9,904 sf 37.65% Impervious Runoff Depth>2.73"
Flow Length=203' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.64 cfs 0.052 af

Subcatchment 22S: Overland Flow to Pond Runoff Area=17,710 sf 12.85% Impervious Runoff Depth>2.73"
Flow Length=47' Slope=0.2127 '/' Tc=6.0 min AMC Adjusted CN=WQ Runoff=1.14 cfs 0.092 af

Subcatchment 30S: Roadway Flow Runoff Area=14,714 sf 52.43% Impervious Runoff Depth>2.73"
Flow Length=276' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.95 cfs 0.077 af

Subcatchment 31S: Roadway Flow Runoff Area=17,194 sf 38.30% Impervious Runoff Depth>2.73"
Flow Length=230' Tc=6.0 min AMC Adjusted CN=WQ Runoff=1.11 cfs 0.090 af

Subcatchment 32S: Roadway Flow Runoff Area=21,651 sf 47.90% Impervious Runoff Depth>2.73"
Flow Length=223' Tc=6.0 min AMC Adjusted CN=WQ Runoff=1.39 cfs 0.113 af

Subcatchment 33S: Roadway Flow Runoff Area=10,356 sf 52.43% Impervious Runoff Depth>2.73"
Flow Length=257' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.67 cfs 0.054 af

Subcatchment 40S: Roadway Flow Runoff Area=11,686 sf 72.99% Impervious Runoff Depth>2.73"
Flow Length=263' Slope=0.0150 '/' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.75 cfs 0.061 af

Subcatchment 41S: Roadway Flow Runoff Area=16,070 sf 43.83% Impervious Runoff Depth>2.73"
Flow Length=268' Tc=6.5 min AMC Adjusted CN=WQ Runoff=1.02 cfs 0.084 af

Subcatchment 42S: Flow to CB#200 Runoff Area=29,920 sf 35.58% Impervious Runoff Depth>2.73"
Flow Length=385' Tc=6.0 min AMC Adjusted CN=WQ Runoff=1.92 cfs 0.156 af

Subcatchment 50S: Roadway Flow Runoff Area=12,898 sf 58.95% Impervious Runoff Depth>2.73"
Flow Length=300' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.83 cfs 0.067 af

Subcatchment 51S: Roadway Flow Runoff Area=12,915 sf 65.19% Impervious Runoff Depth>2.73"
Flow Length=163' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.83 cfs 0.067 af

Subcatchment 60S: Roadway and Building Runoff Area=23,012 sf 40.57% Impervious Runoff Depth>2.73"
Flow Length=220' Tc=6.0 min AMC Adjusted CN=WQ Runoff=1.48 cfs 0.120 af

Subcatchment 61S: Roadway Flow Runoff Area=7,564 sf 83.43% Impervious Runoff Depth>2.73"
Flow Length=152' Slope=0.0200 '/' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.49 cfs 0.039 af

Subcatchment 62S: Bioretention Pond Area Runoff Area=6,453 sf 0.00% Impervious Runoff Depth>2.73"
Tc=6.0 min AMC Adjusted CN=98 Runoff=0.41 cfs 0.034 af

Subcatchment 70S: Overland Flow to Runoff Area=128,858 sf 1.40% Impervious Runoff Depth>2.72"
Flow Length=745' Tc=14.6 min AMC Adjusted CN=WQ Runoff=6.50 cfs 0.671 af

Subcatchment 71S: Roadway Flow Runoff Area=26,495 sf 66.16% Impervious Runoff Depth>2.73"
Flow Length=300' Tc=6.0 min AMC Adjusted CN=WQ Runoff=1.70 cfs 0.138 af

Subcatchment 72S: House Flow to Pond Runoff Area=49,031 sf 39.15% Impervious Runoff Depth>2.73"
Flow Length=127' Tc=6.0 min AMC Adjusted CN=WQ Runoff=3.15 cfs 0.256 af

Subcatchment 73S: Roadway Flow Runoff Area=5,932 sf 76.82% Impervious Runoff Depth>2.73"
Flow Length=200' Slope=0.0200 '/' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.38 cfs 0.031 af

Subcatchment 74S: Area in Circle to Runoff Area=17,656 sf 37.64% Impervious Runoff Depth>2.73"
Flow Length=40' Slope=0.1000 '/' Tc=6.0 min AMC Adjusted CN=WQ Runoff=1.13 cfs 0.092 af

Subcatchment 75S: Roadway Flow Runoff Area=13,639 sf 67.50% Impervious Runoff Depth>2.73"
Flow Length=196' Slope=0.0200 '/' Tc=6.0 min AMC Adjusted CN=WQ Runoff=0.88 cfs 0.071 af

Subcatchment 76S: Roadway Flow Runoff Area=93,020 sf 28.84% Impervious Runoff Depth>2.73"
Flow Length=468' Tc=9.0 min AMC Adjusted CN=WQ Runoff=5.47 cfs 0.485 af

Subcatchment 100S: Unit 1 Runoff Area=920 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment 101S: Units 2 & 3 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 102S: Units 4 & 5 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 103S: Units 6 & 7 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 104S: Units 8 & 9 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 105S: Units 11 & 10 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 106S: Units 13 & 12 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 107S: Units 15 & 14 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 108S: Units 17 & 16 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 109S: Unit 18 Runoff Area=920 sf 100.00% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=98 Runoff=0.06 cfs 0.005 af

Reach 1R: Tammy Court Inflow=3.70 cfs 0.300 af
Outflow=3.70 cfs 0.300 af

Reach 2R: Ex CB1 Inflow=3.63 cfs 0.865 af
Outflow=3.63 cfs 0.865 af

Reach 3R: Ex CB 2 Inflow=1.47 cfs 0.129 af
Outflow=1.47 cfs 0.129 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=3.83 cfs 0.628 af
Outflow=3.83 cfs 0.628 af

Reach 5R: Canterberry Ct Drainage Inflow=2.34 cfs 0.190 af
Outflow=2.34 cfs 0.190 af

Reach 6R: Lower Shadowbrook Dr CB Inflow=4.67 cfs 0.379 af
Outflow=4.67 cfs 0.379 af

Pond 1P: Bioretention Pond #1 Peak Elev=292.92' Storage=7,774 cf Inflow=7.03 cfs 0.570 af
Primary=3.45 cfs 0.569 af Secondary=0.00 cfs 0.000 af Outflow=3.45 cfs 0.569 af

Pond 2P: Pocket Pond #1 Peak Elev=312.30' Storage=18,307 cf Inflow=9.55 cfs 0.776 af
Outflow=3.17 cfs 0.760 af

Pond 3P: Pocket Pond #2 Peak Elev=274.83' Storage=17,656 cf Inflow=13.87 cfs 1.397 af
Primary=9.46 cfs 1.380 af Secondary=0.00 cfs 0.000 af Outflow=9.46 cfs 1.380 af

Pond 30P: Infiltration Pond #1 Peak Elev=281.06' Storage=2,049 cf Inflow=1.13 cfs 0.092 af
Outflow=0.06 cfs 0.071 af

Pond 31P: Infiltration Pond #2 Peak Elev=275.49' Storage=5,574 cf Inflow=3.15 cfs 0.256 af
Discarded=0.10 cfs 0.135 af Primary=0.14 cfs 0.055 af Outflow=0.25 cfs 0.190 af

Pond 100: AD#100 Peak Elev=295.94' Inflow=0.06 cfs 0.005 af
8.0" Round Culvert n=0.013 L=58.1' S=0.0251 '/' Outflow=0.06 cfs 0.005 af

Pond 101: AD#101 Peak Elev=294.48' Inflow=0.18 cfs 0.014 af
8.0" Round Culvert n=0.013 L=37.0' S=0.0500 '/' Outflow=0.18 cfs 0.014 af

Pond 102: AD#102 Peak Elev=293.45' Inflow=0.24 cfs 0.019 af
8.0" Round Culvert n=0.013 L=27.4' S=0.0201 '/' Outflow=0.24 cfs 0.019 af

Pond 103: AD#103 Peak Elev=294.42' Inflow=0.12 cfs 0.010 af
8.0" Round Culvert n=0.013 L=59.0' S=0.0200 '/' Outflow=0.12 cfs 0.010 af

Pond 104: AD#104 Peak Elev=295.76' Inflow=0.65 cfs 0.053 af
8.0" Round Culvert n=0.013 L=16.6' S=0.0367 '/' Outflow=0.65 cfs 0.053 af

Pond 105: AD#105 Peak Elev=297.96' Inflow=0.53 cfs 0.043 af
8.0" Round Culvert n=0.013 L=53.8' S=0.0400 '/' Outflow=0.53 cfs 0.043 af

Pond 106: AD#106 Peak Elev=300.24' Inflow=0.41 cfs 0.034 af
8.0" Round Culvert n=0.013 L=55.9' S=0.0401 '/' Outflow=0.41 cfs 0.034 af

Pond 107: AD#107 Peak Elev=303.18' Inflow=0.30 cfs 0.024 af
8.0" Round Culvert n=0.013 L=64.0' S=0.0450 '/' Outflow=0.30 cfs 0.024 af

Pond 108: AD#108 Peak Elev=306.08' Inflow=0.18 cfs 0.014 af
8.0" Round Culvert n=0.013 L=64.5' S=0.0448 '/' Outflow=0.18 cfs 0.014 af

Pond 109: AD#109 Peak Elev=308.82' Inflow=0.06 cfs 0.005 af
8.0" Round Culvert n=0.013 L=49.9' S=0.0549 '/' Outflow=0.06 cfs 0.005 af

Pond CB11: CB#11 Peak Elev=312.32' Inflow=4.11 cfs 0.333 af
18.0" Round Culvert n=0.013 L=30.3' S=0.0050 '/' Outflow=4.11 cfs 0.333 af

Pond CB110: CB#110 Peak Elev=312.32' Inflow=0.95 cfs 0.077 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=0.95 cfs 0.077 af

Pond CB12: CB#12 Peak Elev=313.71' Inflow=2.06 cfs 0.167 af
15.0" Round Culvert n=0.013 L=106.0' S=0.0263 '/' Outflow=2.06 cfs 0.167 af

Pond CB120: CB#120 Peak Elev=313.98' Inflow=1.39 cfs 0.113 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=1.39 cfs 0.113 af

Pond CB14: CB#14 Peak Elev=308.78' Inflow=3.39 cfs 0.811 af
15.0" Round Culvert n=0.013 L=37.9' S=0.0150 '/' Outflow=3.39 cfs 0.811 af

Pond CB15: CB#15 Peak Elev=308.09' Inflow=3.45 cfs 0.826 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0539 '/' Outflow=3.45 cfs 0.826 af

Pond CB170: CB#170 Peak Elev=278.61' Inflow=2.08 cfs 0.169 af
15.0" Round Culvert n=0.013 L=36.7' S=0.0199 '/' Outflow=2.08 cfs 0.169 af

Pond CB171: CB#171 Peak Elev=278.94' Inflow=1.70 cfs 0.138 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=1.70 cfs 0.138 af

Pond CB19: CB #19 Peak Elev=278.03' Inflow=6.29 cfs 0.556 af
18.0" Round Culvert n=0.013 L=33.8' S=0.0151 '/' Outflow=6.29 cfs 0.556 af

Pond CB20: CB #20 Peak Elev=278.51' Inflow=5.47 cfs 0.485 af
18.0" Round Culvert n=0.013 L=22.0' S=0.0200 '/' Outflow=5.47 cfs 0.485 af

Pond CB200: CB#200 Peak Elev=292.96' Inflow=1.92 cfs 0.156 af
15.0" Round Culvert n=0.013 L=85.3' S=0.0050 '/' Outflow=1.92 cfs 0.156 af

Pond CB3: CB#3 Peak Elev=293.41' Inflow=4.69 cfs 0.381 af
15.0" Round Culvert n=0.013 L=80.0' S=0.0100 '/' Outflow=4.69 cfs 0.381 af

Pond CB30: CB#30 Peak Elev=293.43' Inflow=0.90 cfs 0.073 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=0.90 cfs 0.073 af

Pond CB4: CB#4 Peak Elev=295.00' Inflow=2.31 cfs 0.187 af
15.0" Round Culvert n=0.013 L=80.9' S=0.0205 '/' Outflow=2.31 cfs 0.187 af

Pond CB5: CB#5 Peak Elev=295.26' Inflow=1.48 cfs 0.120 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=1.48 cfs 0.120 af

Pond CB80: CB#80 Peak Elev=312.33' Inflow=1.77 cfs 0.145 af
15.0" Round Culvert n=0.013 L=15.1' S=0.0053 '/' Outflow=1.77 cfs 0.145 af

Pond CB800: CB#800 Peak Elev=312.33' Inflow=0.75 cfs 0.061 af
15.0" Round Culvert n=0.013 L=22.7' S=0.0048 '/' Outflow=0.75 cfs 0.061 af

Pond CB9: CB#9 Peak Elev=314.84' Inflow=2.53 cfs 0.206 af
15.0" Round Culvert n=0.013 L=203.6' S=0.0174 '/' Outflow=2.53 cfs 0.206 af

Pond CB90: CB#90 Peak Elev=315.21' Inflow=0.88 cfs 0.071 af
15.0" Round Culvert n=0.013 L=29.8' S=0.0201 '/' Outflow=0.88 cfs 0.071 af

Pond DMH111: DMH#111 Peak Elev=312.30' Inflow=4.11 cfs 0.333 af
24.0" Round Culvert n=0.013 L=40.3' S=0.0050 '/' Outflow=4.11 cfs 0.333 af

Pond DMH17: DMH#17 Peak Elev=276.23' Inflow=8.31 cfs 0.725 af
24.0" Round Culvert n=0.013 L=279.8' S=0.0100 '/' Outflow=8.31 cfs 0.725 af

Pond DMH18: DMH#18 Peak Elev=277.36' Inflow=6.29 cfs 0.556 af
18.0" Round Culvert n=0.013 L=71.6' S=0.0149 '/' Outflow=6.29 cfs 0.556 af

Pond DMH2: DMH#2 Peak Elev=292.97' Inflow=4.69 cfs 0.381 af
18.0" Round Culvert n=0.013 L=50.2' S=0.0030 '/' Outflow=4.69 cfs 0.381 af

Pond DMH8: DMH#8 Peak Elev=312.32' Inflow=4.30 cfs 0.350 af
18.0" Round Culvert n=0.013 L=13.4' S=0.0052 '/' Outflow=4.30 cfs 0.350 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=11.04 cfs 1.308 af
Primary=11.04 cfs 1.308 af

Link B: pond at beginning of neighborhood Inflow=6.65 cfs 1.184 af
Primary=6.65 cfs 1.184 af

Link C: Wetlands Inflow=13.25 cfs 1.879 af
Primary=13.25 cfs 1.879 af

Total Runoff Area = 20.68 ac Runoff Volume = 4.697 af Average Runoff Depth = 2.73"
71.10% Pervious = 14.70 ac 28.90% Impervious = 5.98 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 3.70 cfs @ 12.09 hrs, Volume= 0.300 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
3,365	98	98	Roofs, HSG D
6,582	98	98	Roofs, HSG A
34,775	80	98	>75% Grass cover, Good, HSG D
8,430	39	98	>75% Grass cover, Good, HSG A
4,407	77	98	Woods, Good, HSG D
57,559			Weighted Average
47,612			82.72% Pervious Area
9,947			17.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	50	0.6600	0.57		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	213	0.6600	5.69		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	263	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 0.039 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
4,085	98	98	Paved parking, HSG A
240	98	98	Roofs, HSG D
1,432	80	98	>75% Grass cover, Good, HSG D
1,789	39	98	>75% Grass cover, Good, HSG A
7,546			Weighted Average
3,221			42.68% Pervious Area
4,325			57.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.5	250	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 1.47 cfs @ 12.12 hrs, Volume= 0.129 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
257	98	98	Roofs, HSG A
6,196	80	98	>75% Grass cover, Good, HSG D
5,530	39	98	>75% Grass cover, Good, HSG A
10,329	77	98	Woods, Good, HSG D
405	30	98	Woods, Good, HSG A
1,946	98	98	Paved parking, HSG A
24,663			Weighted Average
22,460			91.07% Pervious Area
2,203			8.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1200	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
1.9	226	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	48	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	20	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.6	344	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 0.73 cfs @ 12.09 hrs, Volume= 0.059 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
2,537	80	98	>75% Grass cover, Good, HSG D
400	39	98	>75% Grass cover, Good, HSG A
0	74	98	>75% Grass cover, Good, HSG C
4,345	98	98	Paved parking, HSG A
4,030	77	98	Woods, Good, HSG D
11,312			Weighted Average
6,967			61.59% Pervious Area
4,345			38.41% Impervious Area

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

Summary for Subcatchment 5S: Canterberry Court Flow

Runoff = 2.34 cfs @ 12.09 hrs, Volume= 0.190 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
1,564	98	98	Roofs, HSG A
30,607	39	98	>75% Grass cover, Good, HSG A
4,241	98	98	Paved parking, HSG A
36,412			Weighted Average
30,607			84.06% Pervious Area
5,805			15.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Dr Flow

Runoff = 4.67 cfs @ 12.09 hrs, Volume= 0.379 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
1,440	98	98	Roofs, HSG A
3,236	30	98	Woods, Good, HSG A
60,250	39	98	>75% Grass cover, Good, HSG A
7,789	98	98	Paved parking, HSG A
72,715			Weighted Average
63,486			87.31% Pervious Area
9,229			12.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	38	0.4500	4.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.3600	3.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.0	137	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 7S: Rear Overland Flow to Wetland

Runoff = 4.66 cfs @ 12.15 hrs, Volume= 0.443 af, Depth> 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
2,935	98	98	Roofs, HSG D
2,417	98	98	Roofs, HSG A
118	98	98	Roofs, HSG C
10,710	80	98	>75% Grass cover, Good, HSG D
8,039	39	98	>75% Grass cover, Good, HSG A
4,292	74	98	>75% Grass cover, Good, HSG C
19,271	77	98	Woods, Good, HSG D
26,053	70	98	Woods, Good, HSG C
11,193	55	98	Woods, Good, HSG B
85,028			Weighted Average
79,558			93.57% Pervious Area
5,470			6.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
1.7	133	0.0650	1.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.5	183	Total			

Summary for Subcatchment 10S: Roadway Flow

Runoff = 0.88 cfs @ 12.09 hrs, Volume= 0.071 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
3,052	98	98	Roofs, HSG A
12	80	98	>75% Grass cover, Good, HSG D
3,807	39	98	>75% Grass cover, Good, HSG A
506	98	98	Paved parking, HSG D
6,315	98	98	Roofs, HSG A
13,692			Weighted Average
3,819			27.89% Pervious Area
9,873			72.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0150	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.7	257	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.5	307	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 11S: Roadway Flow

Runoff = 1.65 cfs @ 12.09 hrs, Volume= 0.134 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
6,240	98	98	Roofs, HSG D
11,906	80	98	>75% Grass cover, Good, HSG D
2,142	39	98	>75% Grass cover, Good, HSG A
1,643	98	98	Roofs, HSG D
3,791	98	98	Roofs, HSG A
25,722			Weighted Average
14,048			54.61% Pervious Area
11,674			45.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	24	0.3300	0.37		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.3	26	0.0600	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.8	46	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	183	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	279	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 20S: Roadway Flow

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
396	98	98	Roofs, HSG D
993	80	98	>75% Grass cover, Good, HSG D
660	39	98	>75% Grass cover, Good, HSG A
725	98	98	Paved parking, HSG A
2,774			Weighted Average
1,653			59.59% Pervious Area
1,121			40.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	65	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 21S: Roadway Flow

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 0.052 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
1,651	98	98	Roofs, HSG D
365	98	98	Roofs, HSG A
3,879	80	98	>75% Grass cover, Good, HSG D
2,296	39	98	>75% Grass cover, Good, HSG A
4	98	98	Paved parking, HSG D
1,709	98	98	Paved parking, HSG A
9,904			Weighted Average
6,175			62.35% Pervious Area
3,729			37.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.9	98	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	55	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.1	203	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 22S: Overland Flow to Pond

Runoff = 1.14 cfs @ 12.09 hrs, Volume= 0.092 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
1,512	98	98	Roofs, HSG D
645	98	98	Roofs, HSG A
8,034	80	98	>75% Grass cover, Good, HSG D
7,400	39	98	>75% Grass cover, Good, HSG A
119	98	98	Paved parking, HSG A
17,710			Weighted Average
15,434			87.15% Pervious Area
2,276			12.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	47	0.2127	0.36		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.2	47	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 30S: Roadway Flow

Runoff = 0.95 cfs @ 12.09 hrs, Volume= 0.077 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
4,540	98	98	Paved parking, HSG D
6,935	80	98	>75% Grass cover, Good, HSG D
65	39	98	>75% Grass cover, Good, HSG A
1,636	98	98	Paved parking, HSG D
1,538	98	98	Paved parking, HSG A
14,714			Weighted Average
7,000			47.57% Pervious Area
7,714			52.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
1.1	64	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	162	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.6	276	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 31S: Roadway Flow

Runoff = 1.11 cfs @ 12.09 hrs, Volume= 0.090 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
2,626	98	98	Paved parking, HSG D
1,214	98	98	Paved parking, HSG A
6,749	80	98	>75% Grass cover, Good, HSG D
3,860	39	98	>75% Grass cover, Good, HSG A
2,745	98	98	Paved parking, HSG A
17,194			Weighted Average
10,609			61.70% Pervious Area
6,585			38.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	50	0.2800	0.40		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	60	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	120	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	230	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 32S: Roadway Flow

Runoff = 1.39 cfs @ 12.09 hrs, Volume= 0.113 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
5,015	98	98	Roofs, HSG D
8,256	80	98	>75% Grass cover, Good, HSG D
991	39	98	>75% Grass cover, Good, HSG A
1,964	98	98	Paved parking, HSG D
3,391	98	98	Paved parking, HSG A
2,034	77	98	Woods, Good, HSG D
21,651			Weighted Average
11,281			52.10% Pervious Area
10,370			47.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2500	0.17		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	10	0.2000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	63	0.3300	4.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	110	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.6	223	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 33S: Roadway Flow

Runoff = 0.67 cfs @ 12.09 hrs, Volume= 0.054 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
948	98	98	Roofs, HSG D
395	98	98	Roofs, HSG A
1,701	80	98	>75% Grass cover, Good, HSG D
3,225	39	98	>75% Grass cover, Good, HSG A
4,087	98	98	Paved parking, HSG A
10,356			Weighted Average
4,926			47.57% Pervious Area
5,430			52.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.2	37	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.8	257	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 40S: Roadway Flow

Runoff = 0.75 cfs @ 12.09 hrs, Volume= 0.061 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
752	98	98	Roofs, HSG D
1,321	98	98	Roofs, HSG A
391	98	98	Roofs, HSG C
780	80	98	>75% Grass cover, Good, HSG D
2,326	39	98	>75% Grass cover, Good, HSG A
50	74	98	>75% Grass cover, Good, HSG C
1,115	98	98	Paved parking, HSG D
4,921	98	98	Paved parking, HSG A
30	98	98	Paved parking, HSG C
11,686			Weighted Average
3,156			27.01% Pervious Area
8,530			72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0150	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.4	213	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	263	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 41S: Roadway Flow

Runoff = 1.02 cfs @ 12.09 hrs, Volume= 0.084 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
2,949	98	98	Roofs, HSG D
157	98	98	Roofs, HSG A
8,262	80	98	>75% Grass cover, Good, HSG D
765	39	98	>75% Grass cover, Good, HSG A
1,393	98	98	Paved parking, HSG D
2,544	98	98	Paved parking, HSG A
16,070			Weighted Average
9,027			56.17% Pervious Area
7,043			43.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0250	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.5	10	0.3300	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	80	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	138	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.5	268	Total			

Summary for Subcatchment 42S: Flow to CB#200

Runoff = 1.92 cfs @ 12.09 hrs, Volume= 0.156 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
3,134	39	98	>75% Grass cover, Good, HSG A
10,383	80	98	>75% Grass cover, Good, HSG D
3,530	74	98	>75% Grass cover, Good, HSG C
5,484	98	98	Paved parking, HSG A
2,228	77	98	Woods, Good, HSG D
170	98	98	Roofs, HSG A
90	98	98	Roofs, HSG C
2,670	98	98	Roofs, HSG D
1,237	98	98	Roofs, HSG A
994	98	98	Roofs, HSG C
29,920			Weighted Average
19,275			64.42% Pervious Area
10,645			35.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.2	335	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.9	385	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 50S: Roadway Flow

Runoff = 0.83 cfs @ 12.09 hrs, Volume= 0.067 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
5,295	39	98	>75% Grass cover, Good, HSG A
7,603	98	98	Paved parking, HSG A
12,898			Weighted Average
5,295			41.05% Pervious Area
7,603			58.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0550	1.71		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.9	250	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 51S: Roadway Flow

Runoff = 0.83 cfs @ 12.09 hrs, Volume= 0.067 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
3,027	98	98	Roofs, HSG A
4,496	39	98	>75% Grass cover, Good, HSG A
5,392	98	98	Paved parking, HSG A
12,915			Weighted Average
4,496			34.81% Pervious Area
8,419			65.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	76	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.1	163	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 60S: Roadway and Building Flow

Runoff = 1.48 cfs @ 12.09 hrs, Volume= 0.120 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
3,213	98	98	Roofs, HSG A
13,675	39	98	>75% Grass cover, Good, HSG A
6,124	98	98	Paved parking, HSG A
23,012			Weighted Average
13,675			59.43% Pervious Area
9,337			40.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.6	155	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.3	220	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 61S: Roadway Flow

Runoff = 0.49 cfs @ 12.09 hrs, Volume= 0.039 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
1,253	39	98	>75% Grass cover, Good, HSG A
6,311	98	98	Paved parking, HSG A
7,564			Weighted Average
1,253			16.57% Pervious Area
6,311			83.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.6	102	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	152	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 62S: Bioretention Pond Area

Runoff = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
6,453	39	98	>75% Grass cover, Good, HSG A
6,453			Weighted Average
6,453			100.00% Pervious Area

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

Summary for Subcatchment 70S: Overland Flow to Detention Pond

Runoff = 6.50 cfs @ 12.19 hrs, Volume= 0.671 af, Depth> 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
607	98	98	Roofs, HSG D
1,192	98	98	Roofs, HSG A
24,819	80	98	>75% Grass cover, Good, HSG D
13,185	39	98	>75% Grass cover, Good, HSG A
89,055	77	98	Woods, Good, HSG D
128,858			Weighted Average
127,059			98.60% Pervious Area
1,799			1.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0800	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.6	391	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	304	0.0430	1.45		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.6	745	Total			

Summary for Subcatchment 71S: Roadway Flow

Runoff = 1.70 cfs @ 12.09 hrs, Volume= 0.138 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
2,572	98	98	Roofs, HSG D
3,565	98	98	Roofs, HSG A
3,581	80	98	>75% Grass cover, Good, HSG D
5,385	39	98	>75% Grass cover, Good, HSG A
1,533	98	98	Paved parking, HSG D
9,859	98	98	Paved parking, HSG A
26,495			Weighted Average
8,966			33.84% Pervious Area
17,529			66.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
1.5	250	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.9	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 72S: House Flow to Pond

Runoff = 3.15 cfs @ 12.09 hrs, Volume= 0.256 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
2,848	98	98	Roofs, HSG D
9,725	98	98	Roofs, HSG A
23,884	39	98	>75% Grass cover, Good, HSG A
4,734	80	98	>75% Grass cover, Good, HSG D
1,216	74	98	>75% Grass cover, Good, HSG C
1,330	98	98	Paved parking, HSG D
5,294	98	98	Paved parking, HSG A
49,031			Weighted Average
29,834			60.85% Pervious Area
19,197			39.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.3	77	0.3100	3.90		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	127	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 73S: Roadway Flow

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.031 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
1,375	39	98	>75% Grass cover, Good, HSG A
4,557	98	98	Paved parking, HSG A
5,932			Weighted Average
1,375			23.18% Pervious Area
4,557			76.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.9	150	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	200	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 74S: Area in Circle to Infiltration Pond

Runoff = 1.13 cfs @ 12.09 hrs, Volume= 0.092 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
4,851	98	98	Roofs, HSG A
8,558	39	98	>75% Grass cover, Good, HSG A
1,547	98	98	Roofs, HSG D
248	98	98	Roofs, HSG C
1,588	80	98	>75% Grass cover, Good, HSG D
864	74	98	>75% Grass cover, Good, HSG C
17,656			Weighted Average
11,010			62.36% Pervious Area
6,646			37.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	40	0.1000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.6	40	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 75S: Roadway Flow

Runoff = 0.88 cfs @ 12.09 hrs, Volume= 0.071 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
295	98	98	Roofs, HSG D
1,380	98	98	Roofs, HSG A
2,209	80	98	>75% Grass cover, Good, HSG D
2,224	39	98	>75% Grass cover, Good, HSG A
4,186	98	98	Paved parking, HSG D
3,345	98	98	Paved parking, HSG A
13,639			Weighted Average
4,433			32.50% Pervious Area
9,206			67.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.8	146	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	196	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 76S: Roadway Flow

Runoff = 5.47 cfs @ 12.12 hrs, Volume= 0.485 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Adj	Description
14,560	98	98	Roofs, HSG D
1,133	98	98	Roofs, HSG A
24,384	80	98	>75% Grass cover, Good, HSG D
10,102	39	98	>75% Grass cover, Good, HSG A
31,709	77	98	Woods, Good, HSG D
7,686	98	98	Paved parking, HSG D
3,446	98	98	Paved parking, HSG A
93,020			Weighted Average
66,195			71.16% Pervious Area
26,825			28.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1200	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.9	130	0.2150	2.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.0	120	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	168	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.0	468	Total			

Summary for Subcatchment 100S: Unit 1

Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Description
920	98	Roofs, HSG A
920		100.00% Impervious Area

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

Summary for Subcatchment 101S: Units 2 & 3

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 102S: Units 4 & 5

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 103S: Units 6 & 7

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 104S: Units 8 & 9

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 105S: Units 11 & 10

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 106S: Units 13 & 12

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 107S: Units 15 & 14

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 108S: Units 17 & 16

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 109S: Unit 18

Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr-frozen Rainfall=2.96", AMC=4

Area (sf)	CN	Description
920	98	Roofs, HSG A
920		100.00% Impervious Area

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

Summary for Reach 1R: Tammy Court

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

Inflow Area = 1.32 ac, 17.28% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 3.70 cfs @ 12.09 hrs, Volume= 0.300 af
Outflow = 3.70 cfs @ 12.09 hrs, Volume= 0.300 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Ex CB1

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

Inflow Area = 3.88 ac, 46.55% Impervious, Inflow Depth > 2.68" for 2-yr-frozen event
Inflow = 3.63 cfs @ 12.32 hrs, Volume= 0.865 af
Outflow = 3.63 cfs @ 12.32 hrs, Volume= 0.865 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Ex CB 2

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

Inflow Area = 0.57 ac, 8.93% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 1.47 cfs @ 12.12 hrs, Volume= 0.129 af
Outflow = 1.47 cfs @ 12.12 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area =	2.77 ac, 52.41% Impervious, Inflow Depth > 2.72"	for 2-yr-frozen event		
Inflow =	3.83 cfs @ 12.22 hrs, Volume=	0.628 af		
Outflow =	3.83 cfs @ 12.22 hrs, Volume=	0.628 af, Atten= 0%, Lag= 0.0 min		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area =	0.84 ac, 15.94% Impervious, Inflow Depth > 2.73"	for 2-yr-frozen event		
Inflow =	2.34 cfs @ 12.09 hrs, Volume=	0.190 af		
Outflow =	2.34 cfs @ 12.09 hrs, Volume=	0.190 af, Atten= 0%, Lag= 0.0 min		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Dr CB

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

Inflow Area =	1.67 ac, 12.69% Impervious, Inflow Depth > 2.73"	for 2-yr-frozen event		
Inflow =	4.67 cfs @ 12.09 hrs, Volume=	0.379 af		
Outflow =	4.67 cfs @ 12.09 hrs, Volume=	0.379 af, Atten= 0%, Lag= 0.0 min		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Bioretention Pond #1

Inflow Area =	2.51 ac, 53.85% Impervious, Inflow Depth > 2.73"	for 2-yr-frozen event		
Inflow =	7.03 cfs @ 12.09 hrs, Volume=	0.570 af		
Outflow =	3.45 cfs @ 12.25 hrs, Volume=	0.569 af, Atten= 51%, Lag= 9.6 min		
Primary =	3.45 cfs @ 12.25 hrs, Volume=	0.569 af		
Secondary =	0.00 cfs @ 0.00 hrs, Volume=	0.000 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 292.92' @ 12.25 hrs Surf.Area= 3,605 sf Storage= 7,774 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 78.8 min (836.4 - 757.6)

Volume	Invert	Avail.Storage	Storage Description
#1	288.00'	12,114 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
288.00	349	0	0
290.00	1,016	1,365	1,365
291.00	1,441	1,229	2,594
292.00	2,931	2,186	4,780
294.00	4,403	7,334	12,114

Device	Routing	Invert	Outlet Devices
#1	Secondary	293.80'	**4.0' 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	Device 5	288.00'	**10.000 in/hr Exfiltration over Surface area**
#3	Device 5	292.10'	**15.0" Vert. Orifice/Grate** C= 0.600
#4	Device 5	293.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	285.00'	**12.0" Round Culvert** L= 55.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 285.00' / 283.04' S= 0.0354 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.44 cfs @ 12.25 hrs HW=292.92' TW=0.00' (Dynamic Tailwater)
- **5=Culvert** (Passes 3.44 cfs of 10.30 cfs potential flow)
  - **2=Exfiltration** (Exfiltration Controls 0.83 cfs)
  - **3=Orifice/Grate** (Orifice Controls 2.61 cfs @ 3.07 fps)
  - **4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=288.00' TW=0.00' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Pocket Pond #1

[80] Warning: Exceeded Pond DMH111 by 0.15' @ 12.10 hrs (5.80 cfs 0.214 af)
[80] Warning: Exceeded Pond DMH8 by 0.06' @ 11.95 hrs (2.05 cfs 0.068 af)

Inflow Area =	3.42 ac, 46.71% Impervious, Inflow Depth > 2.73"	for 2-yr-frozen event		
Inflow =	9.55 cfs @ 12.09 hrs, Volume=	0.776 af		
Outflow =	3.17 cfs @ 12.37 hrs, Volume=	0.760 af, Atten= 67%, Lag= 17.2 min		
Primary =	3.17 cfs @ 12.37 hrs, Volume=	0.760 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 309.79' Surf.Area= 3,009 sf Storage= 5,826 cf
Peak Elev= 312.30' @ 12.37 hrs Surf.Area= 7,170 sf Storage= 18,307 cf (12,482 cf above start)

Plug-Flow detention time= 240.3 min calculated for 0.626 af (81% of inflow)
Center-of-Mass det. time= 104.9 min (862.6 - 757.7)

Volume	Invert	Avail.Storage	Storage Description
#1	306.00'	27,930 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
306.00	306	196.0	0	0	306
308.00	1,616	240.0	1,750	1,750	1,894
310.00	3,201	285.0	4,728	6,478	3,846
312.00	6,785	438.0	9,764	16,242	12,678
313.50	8,844	470.0	11,688	27,930	15,088

Device	Routing	Invert	Outlet Devices
#1	Device 4	309.80'	**4.5" Vert. Orifice/Grate** C= 0.600
#2	Device 4	311.50'	**14.0" Vert. Orifice/Grate** C= 0.600
#3	Device 4	313.10'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	309.75'	**15.0" Round Culvert** L= 93.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.75' / 307.89' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.16 cfs @ 12.37 hrs HW=312.29' TW=308.78' (Dynamic Tailwater)
└─**4=Culvert** (Passes 3.16 cfs of 8.19 cfs potential flow)
  ├─**1=Orifice/Grate** (Orifice Controls 0.81 cfs @ 7.31 fps)
  ├─**2=Orifice/Grate** (Orifice Controls 2.35 cfs @ 3.03 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 3P: Pocket Pond #2

Inflow Area = 6.15 ac, 22.36% Impervious, Inflow Depth > 2.72" for 2-yr-frozen event
Inflow = 13.87 cfs @ 12.14 hrs, Volume= 1.397 af
Outflow = 9.46 cfs @ 12.30 hrs, Volume= 1.380 af, Atten= 32%, Lag= 9.8 min
Primary = 9.46 cfs @ 12.30 hrs, Volume= 1.380 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 271.98' Surf.Area= 2,847 sf Storage= 5,675 cf
Peak Elev= 274.83' @ 12.30 hrs Surf.Area= 5,643 sf Storage= 17,656 cf (11,981 cf above start)

Plug-Flow detention time= 112.8 min calculated for 1.248 af (89% of inflow)
Center-of-Mass det. time= 28.8 min (790.7 - 761.9)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	25,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	408	0	0
269.00	790	599	599
270.00	1,250	1,020	1,619
272.00	2,863	4,113	5,732
274.00	4,762	7,625	13,357
276.00	6,894	11,656	25,013

Device	Routing	Invert	Outlet Devices
#1	Device 4	272.00'	**9.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	275.35'	**10.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#3	Device 4	273.80'	**24.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600
#4	Primary	272.00'	**18.0" Round Culvert** L= 105.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.57' S= 0.0041 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#5	Primary	275.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.46 cfs @ 12.30 hrs HW=274.83' TW=0.00' (Dynamic Tailwater)
- **4=Culvert** (Passes 9.46 cfs of 10.14 cfs potential flow)
  - **1=Orifice/Grate** (Orifice Controls 3.33 cfs @ 7.54 fps)
  - **3=Orifice/Grate** (Orifice Controls 6.13 cfs @ 3.68 fps)
- **5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=271.98' TW=0.00' (Dynamic Tailwater)
- **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 30P: Infiltration Pond #1

Inflow Area = 0.41 ac, 37.64% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 1.13 cfs @ 12.09 hrs, Volume= 0.092 af
Outflow = 0.06 cfs @ 14.00 hrs, Volume= 0.071 af, Atten= 95%, Lag= 114.8 min
Discarded = 0.06 cfs @ 14.00 hrs, Volume= 0.071 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 281.06' @ 14.00 hrs Surf.Area= 2,661 sf Storage= 2,049 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 184.2 min (941.8 - 757.6)

Volume	Invert	Avail.Storage	Storage Description
#1	280.00'	5,166 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
280.00	1,214	0	0
282.00	3,952	5,166	5,166

Device	Routing	Invert	Outlet Devices
#1	Discarded	280.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 14.00 hrs HW=281.06' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Summary for Pond 31P: Infiltration Pond #2

[92] Warning: Device #4 is above defined storage

Inflow Area = 1.13 ac, 39.15% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 3.15 cfs @ 12.09 hrs, Volume= 0.256 af
Outflow = 0.25 cfs @ 13.11 hrs, Volume= 0.190 af, Atten= 92%, Lag= 61.2 min
Discarded = 0.10 cfs @ 13.11 hrs, Volume= 0.135 af
Primary = 0.14 cfs @ 13.11 hrs, Volume= 0.055 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 275.49' @ 13.11 hrs Surf.Area= 4,433 sf Storage= 5,574 cf

Plug-Flow detention time= 227.9 min calculated for 0.190 af (74% of inflow)
Center-of-Mass det. time= 142.3 min (900.0 - 757.6)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	7,938 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	3,030	0	0
276.00	4,908	7,938	7,938

Device	Routing	Invert	Outlet Devices
#1	Device 3	275.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	274.00'	**1.000 in/hr Exfiltration over Surface area**
#3	Primary	274.16'	**15.0" Round Culvert** L= 32.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 274.16' / 274.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Primary	276.40'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.10 cfs @ 13.11 hrs HW=275.49' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=0.14 cfs @ 13.11 hrs HW=275.49' TW=0.00' (Dynamic Tailwater)
├**3=Culvert** (Passes 0.14 cfs of 4.12 cfs potential flow)
│└**1=Orifice/Grate** (Orifice Controls 0.14 cfs @ 2.92 fps)
└**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 100: AD#100

Inflow Area = 0.02 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af
Outflow = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.94' @ 12.09 hrs
Flood Elev= 297.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	295.81'	**8.0" Round Culvert** L= 58.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 295.81' / 294.35' S= 0.0251 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.06 cfs @ 12.09 hrs HW=295.94' TW=294.48' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.06 cfs @ 1.22 fps)

Summary for Pond 101: AD#101

Inflow Area = 0.06 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af
Outflow = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.48' @ 12.09 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.25'	**8.0" Round Culvert** L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.25' / 292.40' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.17 cfs @ 12.09 hrs HW=294.48' TW=293.25' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.17 cfs @ 1.63 fps)

Summary for Pond 102: AD#102

Inflow Area = 0.08 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.24 cfs @ 12.09 hrs, Volume= 0.019 af
Outflow = 0.24 cfs @ 12.09 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 12.09 hrs, Volume= 0.019 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.45' @ 12.20 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.95'	**8.0" Round Culvert** L= 27.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.95' / 292.40' S= 0.0201 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.08 cfs @ 12.09 hrs HW=293.27' TW=293.25' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.08 cfs @ 0.67 fps)

Summary for Pond 103: AD#103

Inflow Area = 0.04 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af
Outflow = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
Primary = 0.12 cfs @ 12.09 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.42' @ 12.09 hrs
Flood Elev= 297.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.23'	**8.0" Round Culvert** L= 59.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.23' / 293.05' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.12 cfs @ 12.09 hrs HW=294.41' TW=293.27' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.12 cfs @ 1.46 fps)

Summary for Pond 104: AD#104

Inflow Area = 0.23 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.65 cfs @ 12.09 hrs, Volume= 0.053 af
Outflow = 0.65 cfs @ 12.09 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
Primary = 0.65 cfs @ 12.09 hrs, Volume= 0.053 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.76' @ 12.09 hrs
Flood Elev= 299.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	295.27'	**8.0" Round Culvert** L= 16.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 295.27' / 294.66' S= 0.0367 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.63 cfs @ 12.09 hrs HW=295.75' TW=295.24' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.63 cfs @ 2.36 fps)

Summary for Pond 105: AD#105

Inflow Area = 0.19 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.043 af
Outflow = 0.53 cfs @ 12.09 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min
Primary = 0.53 cfs @ 12.09 hrs, Volume= 0.043 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 297.96' @ 12.09 hrs
Flood Elev= 301.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	297.53'	**8.0" Round Culvert** L= 53.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 297.53' / 295.38' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.52 cfs @ 12.09 hrs HW=297.95' TW=295.75' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.52 cfs @ 2.22 fps)

Summary for Pond 106: AD#106

Inflow Area = 0.15 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af
Outflow = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
Primary = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 300.24' @ 12.09 hrs
Flood Elev= 303.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	299.87'	**8.0" Round Culvert** L= 55.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 299.87' / 297.63' S= 0.0401 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.40 cfs @ 12.09 hrs HW=300.24' TW=297.95' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.40 cfs @ 2.06 fps)

Summary for Pond 107: AD#107

Inflow Area = 0.11 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.30 cfs @ 12.09 hrs, Volume= 0.024 af
Outflow = 0.30 cfs @ 12.09 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.09 hrs, Volume= 0.024 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 303.18' @ 12.09 hrs
Flood Elev= 306.63'

Device	Routing	Invert	Outlet Devices
#1	Primary	302.85'	**8.0" Round Culvert** L= 64.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 302.85' / 299.97' S= 0.0450 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.29 cfs @ 12.09 hrs HW=303.17' TW=300.24' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.29 cfs @ 1.71 fps)

Summary for Pond 108: AD#108

Inflow Area = 0.06 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af
Outflow = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.09 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 306.08' @ 12.09 hrs
Flood Elev= 309.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	305.85'	**8.0" Round Culvert** L= 64.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 305.85' / 302.96' S= 0.0448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.17 cfs @ 12.09 hrs HW=306.08' TW=303.17' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.17 cfs @ 1.63 fps)

Summary for Pond 109: AD#109

Inflow Area = 0.02 ac,100.00% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af
Outflow = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.06 cfs @ 12.09 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.82' @ 12.09 hrs
Flood Elev= 311.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	308.69'	**8.0" Round Culvert** L= 49.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 308.69' / 305.95' S= 0.0549 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.06 cfs @ 12.09 hrs HW=308.82' TW=306.08' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.06 cfs @ 1.22 fps)

Summary for Pond CB11: CB#11

[80] Warning: Exceeded Pond CB110 by 0.18' @ 12.10 hrs (2.54 cfs 0.095 af)

Inflow Area =	1.47 ac, 47.09% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event				
Inflow	=	4.11 cfs @	12.09 hrs,	Volume=	0.333 af
Outflow	=	4.11 cfs @	12.09 hrs,	Volume=	0.333 af, Atten= 0%, Lag= 0.0 min
Primary	=	4.11 cfs @	12.09 hrs,	Volume=	0.333 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.32' @ 12.44 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.04'	**18.0" Round Culvert** L= 30.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.04' / 309.89' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.45 cfs @ 12.09 hrs HW=311.75' TW=311.72' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 1.45 cfs @ 0.82 fps)

Summary for Pond CB110: CB#110

Inflow Area =	0.34 ac, 52.43% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event				
Inflow	=	0.95 cfs @	12.09 hrs,	Volume=	0.077 af
Outflow	=	0.95 cfs @	12.09 hrs,	Volume=	0.077 af, Atten= 0%, Lag= 0.0 min
Primary	=	0.95 cfs @	12.09 hrs,	Volume=	0.077 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.32' @ 12.49 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.25'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.25' / 310.14' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.56' TW=311.75' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB12: CB#12

Inflow Area = 0.73 ac, 49.36% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 2.06 cfs @ 12.09 hrs, Volume= 0.167 af
Outflow = 2.06 cfs @ 12.09 hrs, Volume= 0.167 af, Atten= 0%, Lag= 0.0 min
Primary = 2.06 cfs @ 12.09 hrs, Volume= 0.167 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.71' @ 12.09 hrs
Flood Elev= 317.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	313.00'	**15.0" Round Culvert** L= 106.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 313.00' / 310.21' S= 0.0263 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.00 cfs @ 12.09 hrs HW=313.70' TW=311.75' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.00 cfs @ 2.84 fps)

Summary for Pond CB120: CB#120

Inflow Area = 0.50 ac, 47.90% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 1.39 cfs @ 12.09 hrs, Volume= 0.113 af
Outflow = 1.39 cfs @ 12.09 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min
Primary = 1.39 cfs @ 12.09 hrs, Volume= 0.113 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.98' @ 12.10 hrs
Flood Elev= 317.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	313.32'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 313.32' / 313.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.24 cfs @ 12.09 hrs HW=313.97' TW=313.70' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.24 cfs @ 2.83 fps)

Summary for Pond CB14: CB#14

Inflow Area = 3.64 ac, 46.14% Impervious, Inflow Depth > 2.67" for 2-yr-frozen event
Inflow = 3.39 cfs @ 12.35 hrs, Volume= 0.811 af
Outflow = 3.39 cfs @ 12.35 hrs, Volume= 0.811 af, Atten= 0%, Lag= 0.0 min
Primary = 3.39 cfs @ 12.35 hrs, Volume= 0.811 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.78' @ 12.36 hrs
Flood Elev= 312.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	307.79'	**15.0" Round Culvert** L= 37.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 307.79' / 307.22' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.38 cfs @ 12.35 hrs HW=308.78' TW=308.09' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.38 cfs @ 4.42 fps)

Summary for Pond CB15: CB#15

Inflow Area = 3.71 ac, 46.04% Impervious, Inflow Depth > 2.67" for 2-yr-frozen event
Inflow = 3.45 cfs @ 12.34 hrs, Volume= 0.826 af
Outflow = 3.45 cfs @ 12.34 hrs, Volume= 0.826 af, Atten= 0%, Lag= 0.0 min
Primary = 3.45 cfs @ 12.34 hrs, Volume= 0.826 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.09' @ 12.34 hrs
Flood Elev= 312.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	307.12'	**15.0" Round Culvert** L= 120.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 307.12' / 300.65' S= 0.0539 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.45 cfs @ 12.34 hrs HW=308.09' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 3.45 cfs @ 3.36 fps)

Summary for Pond CB170: CB#170

Inflow Area = 0.74 ac, 68.11% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 2.08 cfs @ 12.09 hrs, Volume= 0.169 af
Outflow = 2.08 cfs @ 12.09 hrs, Volume= 0.169 af, Atten= 0%, Lag= 0.0 min
Primary = 2.08 cfs @ 12.09 hrs, Volume= 0.169 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.61' @ 12.09 hrs
Flood Elev= 281.97'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.90'	**15.0" Round Culvert** L= 36.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 277.90' / 277.17' S= 0.0199 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.03 cfs @ 12.09 hrs HW=278.60' TW=276.17' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 2.03 cfs @ 2.85 fps)

Summary for Pond CB171: CB#171

Inflow Area = 0.61 ac, 66.16% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 1.70 cfs @ 12.09 hrs, Volume= 0.138 af
Outflow = 1.70 cfs @ 12.09 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min
Primary = 1.70 cfs @ 12.09 hrs, Volume= 0.138 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.94' @ 12.10 hrs
Flood Elev= 281.97'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.22'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.22' / 278.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.56 cfs @ 12.09 hrs HW=278.93' TW=278.60' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.56 cfs @ 3.15 fps)

Summary for Pond CB19: CB #19

Inflow Area = 2.45 ac, 33.78% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 6.29 cfs @ 12.12 hrs, Volume= 0.556 af
Outflow = 6.29 cfs @ 12.12 hrs, Volume= 0.556 af, Atten= 0%, Lag= 0.0 min
Primary = 6.29 cfs @ 12.12 hrs, Volume= 0.556 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.03' @ 12.14 hrs
Flood Elev= 281.21'

Device	Routing	Invert	Outlet Devices
#1	Primary	276.67'	**18.0" Round Culvert** L= 33.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.67' / 276.16' S= 0.0151 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.72 cfs @ 12.12 hrs HW=277.99' TW=277.33' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 5.72 cfs @ 4.61 fps)

Summary for Pond CB20: CB #20

Inflow Area = 2.14 ac, 28.84% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 5.47 cfs @ 12.12 hrs, Volume= 0.485 af
Outflow = 5.47 cfs @ 12.12 hrs, Volume= 0.485 af, Atten= 0%, Lag= 0.0 min
Primary = 5.47 cfs @ 12.12 hrs, Volume= 0.485 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.51' @ 12.15 hrs
Flood Elev= 281.21'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.21'	**18.0" Round Culvert** L= 22.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 277.21' / 276.77' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.74 cfs @ 12.12 hrs HW=278.47' TW=278.00' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.74 cfs @ 4.05 fps)

Summary for Pond CB200: CB#200

Inflow Area = 0.69 ac, 35.58% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 1.92 cfs @ 12.09 hrs, Volume= 0.156 af
Outflow = 1.92 cfs @ 12.09 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min
Primary = 1.92 cfs @ 12.09 hrs, Volume= 0.156 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 292.96' @ 12.27 hrs
Flood Elev= 300.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.88'	**15.0" Round Culvert** L= 85.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 291.88' / 291.45' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.19 cfs @ 12.09 hrs HW=292.74' TW=292.55' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.19 cfs @ 1.87 fps)

Summary for Pond CB3: CB#3

[80] Warning: Exceeded Pond CB30 by 0.19' @ 12.05 hrs (1.83 cfs 0.019 af)

Inflow Area = 1.67 ac, 66.11% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 4.69 cfs @ 12.09 hrs, Volume= 0.381 af
Outflow = 4.69 cfs @ 12.09 hrs, Volume= 0.381 af, Atten= 0%, Lag= 0.0 min
Primary = 4.69 cfs @ 12.09 hrs, Volume= 0.381 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.41' @ 12.11 hrs
Flood Elev= 296.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.09'	**15.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.09' / 291.29' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.02 cfs @ 12.09 hrs HW=293.37' TW=292.65' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.02 cfs @ 3.97 fps)

Summary for Pond CB30: CB#30

[80] Warning: Exceeded Pond 102 by 0.06' @ 12.15 hrs (0.22 cfs 0.001 af)

Inflow Area =	0.32 ac, 91.05% Impervious, Inflow Depth > 2.73"	for 2-yr-frozen event			
Inflow =	0.90 cfs @	12.09 hrs, Volume=	0.073 af		
Outflow =	0.90 cfs @	12.09 hrs, Volume=	0.073 af,	Atten= 0%,	Lag= 0.0 min
Primary =	0.90 cfs @	12.09 hrs, Volume=	0.073 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.43' @ 12.16 hrs
Flood Elev= 296.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.30'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.30' / 292.19' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=293.25' TW=293.37' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB4: CB#4

Inflow Area =	0.82 ac, 72.75% Impervious, Inflow Depth > 2.73"	for 2-yr-frozen event			
Inflow =	2.31 cfs @	12.09 hrs, Volume=	0.187 af		
Outflow =	2.31 cfs @	12.09 hrs, Volume=	0.187 af,	Atten= 0%,	Lag= 0.0 min
Primary =	2.31 cfs @	12.09 hrs, Volume=	0.187 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.00' @ 12.09 hrs
Flood Elev= 298.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.24'	**15.0" Round Culvert** L= 80.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.24' / 292.58' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.25 cfs @ 12.09 hrs HW=294.99' TW=293.37' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.25 cfs @ 2.94 fps)

Summary for Pond CB5: CB#5

Inflow Area =	0.53 ac, 77.00% Impervious, Inflow Depth > 2.73"	for 2-yr-frozen event			
Inflow =	1.48 cfs @	12.09 hrs, Volume=	0.120 af		
Outflow =	1.48 cfs @	12.09 hrs, Volume=	0.120 af,	Atten= 0%,	Lag= 0.0 min
Primary =	1.48 cfs @	12.09 hrs, Volume=	0.120 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 295.26' @ 12.11 hrs
Flood Elev= 298.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.56'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.56' / 294.34' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.31 cfs @ 12.09 hrs HW=295.24' TW=294.99' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.31 cfs @ 2.78 fps)

Summary for Pond CB80: CB#80

[80] Warning: Exceeded Pond CB800 by 0.54' @ 18.20 hrs (0.89 cfs 0.127 af)

Inflow Area =	0.64 ac, 56.11% Impervious, Inflow Depth > 2.73"	for 2-yr-frozen event		
Inflow =	1.77 cfs @ 12.09 hrs, Volume=	0.145 af		
Outflow =	1.77 cfs @ 12.09 hrs, Volume=	0.145 af, Atten= 0%, Lag= 0.0 min		
Primary =	1.77 cfs @ 12.09 hrs, Volume=	0.145 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.33' @ 12.43 hrs
Flood Elev= 314.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.06'	**15.0" Round Culvert** L= 15.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.06' / 309.98' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.74' TW=311.90' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB800: CB#800

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=84)

Inflow Area =	0.27 ac, 72.99% Impervious, Inflow Depth > 2.73"	for 2-yr-frozen event		
Inflow =	0.75 cfs @ 12.09 hrs, Volume=	0.061 af		
Outflow =	0.75 cfs @ 12.09 hrs, Volume=	0.061 af, Atten= 0%, Lag= 0.0 min		
Primary =	0.75 cfs @ 12.09 hrs, Volume=	0.061 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.33' @ 12.48 hrs
Flood Elev= 314.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.27'	**15.0" Round Culvert** L= 22.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.27' / 310.16' S= 0.0048 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.48' TW=311.72' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB9: CB#9

Inflow Area = 0.90 ac, 54.67% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 2.53 cfs @ 12.09 hrs, Volume= 0.206 af
Outflow = 2.53 cfs @ 12.09 hrs, Volume= 0.206 af, Atten= 0%, Lag= 0.0 min
Primary = 2.53 cfs @ 12.09 hrs, Volume= 0.206 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 314.84' @ 12.09 hrs
Flood Elev= 317.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	314.04'	**15.0" Round Culvert** L= 203.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 314.04' / 310.50' S= 0.0174 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.47 cfs @ 12.09 hrs HW=314.83' TW=311.88' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 2.47 cfs @ 3.02 fps)

Summary for Pond CB90: CB#90

Inflow Area = 0.31 ac, 72.11% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 0.88 cfs @ 12.09 hrs, Volume= 0.071 af
Outflow = 0.88 cfs @ 12.09 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min
Primary = 0.88 cfs @ 12.09 hrs, Volume= 0.071 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 315.21' @ 12.10 hrs
Flood Elev= 317.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	314.74'	**15.0" Round Culvert** L= 29.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 314.74' / 314.14' S= 0.0201 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.80 cfs @ 12.09 hrs HW=315.20' TW=314.83' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.80 cfs @ 2.92 fps)

Summary for Pond DMH111: DMH#111

[80] Warning: Exceeded Pond CB11 by 0.08' @ 12.20 hrs (2.39 cfs 0.037 af)

Inflow Area =	1.47 ac,	47.09% Impervious,	Inflow Depth >	2.73"	for 2-yr-frozen event
Inflow =	4.11 cfs @	12.09 hrs,	Volume=	0.333 af	
Outflow =	4.11 cfs @	12.09 hrs,	Volume=	0.333 af,	Atten= 0%, Lag= 0.0 min
Primary =	4.11 cfs @	12.09 hrs,	Volume=	0.333 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.30' @ 12.42 hrs
Flood Elev= 314.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	309.79'	**24.0" Round Culvert** L= 40.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.79' / 309.59' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.72' TW=311.86' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond DMH17: DMH#17

Inflow Area =	3.19 ac,	41.78% Impervious,	Inflow Depth >	2.73"	for 2-yr-frozen event
Inflow =	8.31 cfs @	12.11 hrs,	Volume=	0.725 af	
Outflow =	8.31 cfs @	12.11 hrs,	Volume=	0.725 af,	Atten= 0%, Lag= 0.0 min
Primary =	8.31 cfs @	12.11 hrs,	Volume=	0.725 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 276.23' @ 12.12 hrs
Flood Elev= 279.48'

Device	Routing	Invert	Outlet Devices
#1	Primary	274.89'	**24.0" Round Culvert** L= 279.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 274.89' / 272.09' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.62 cfs @ 12.11 hrs HW=276.21' TW=274.33' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 7.62 cfs @ 4.91 fps)

Summary for Pond DMH18: DMH#18

Inflow Area =	2.45 ac,	33.78% Impervious,	Inflow Depth >	2.73"	for 2-yr-frozen event
Inflow =	6.29 cfs @	12.12 hrs,	Volume=	0.556 af	
Outflow =	6.29 cfs @	12.12 hrs,	Volume=	0.556 af,	Atten= 0%, Lag= 0.0 min
Primary =	6.29 cfs @	12.12 hrs,	Volume=	0.556 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 277.36' @ 12.12 hrs
Flood Elev= 281.88'

Device	Routing	Invert	Outlet Devices
#1	Primary	276.06'	**18.0" Round Culvert** L= 71.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.06' / 274.99' S= 0.0149 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.14 cfs @ 12.12 hrs HW=277.33' TW=276.21' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 6.14 cfs @ 3.84 fps)

Summary for Pond DMH2: DMH#2

Inflow Area = 1.67 ac, 66.11% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 4.69 cfs @ 12.09 hrs, Volume= 0.381 af
Outflow = 4.69 cfs @ 12.09 hrs, Volume= 0.381 af, Atten= 0%, Lag= 0.0 min
Primary = 4.69 cfs @ 12.09 hrs, Volume= 0.381 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 292.97' @ 12.27 hrs
Flood Elev= 297.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.19'	**18.0" Round Culvert** L= 50.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 291.19' / 291.04' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.33 cfs @ 12.09 hrs HW=292.65' TW=292.55' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 2.33 cfs @ 1.68 fps)

Summary for Pond DMH8: DMH#8

[80] Warning: Exceeded Pond CB80 by 0.19' @ 12.05 hrs (2.56 cfs 0.097 af)

Inflow Area = 1.54 ac, 55.26% Impervious, Inflow Depth > 2.73" for 2-yr-frozen event
Inflow = 4.30 cfs @ 12.09 hrs, Volume= 0.350 af
Outflow = 4.30 cfs @ 12.09 hrs, Volume= 0.350 af, Atten= 0%, Lag= 0.0 min
Primary = 4.30 cfs @ 12.09 hrs, Volume= 0.350 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.32' @ 12.39 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	309.88'	**18.0" Round Culvert** L= 13.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.88' / 309.81' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.30 cfs @ 12.09 hrs HW=311.89' TW=311.86' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 1.30 cfs @ 0.74 fps)

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 5.76 ac, 32.84% Impervious, Inflow Depth > 2.72" for 2-yr-frozen event
Inflow = 11.04 cfs @ 12.11 hrs, Volume= 1.308 af
Primary = 11.04 cfs @ 12.11 hrs, Volume= 1.308 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: pond at beginning of neighborhood

Inflow Area = 5.28 ac, 37.67% Impervious, Inflow Depth > 2.69" for 2-yr-frozen event
Inflow = 6.65 cfs @ 12.12 hrs, Volume= 1.184 af
Primary = 6.65 cfs @ 12.12 hrs, Volume= 1.184 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.23 ac, 21.04% Impervious, Inflow Depth > 2.44" for 2-yr-frozen event
Inflow = 13.25 cfs @ 12.22 hrs, Volume= 1.879 af
Primary = 13.25 cfs @ 12.22 hrs, Volume= 1.879 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=57,559 sf 17.28% Impervious Runoff Depth>2.38"
Flow Length=263' Slope=0.6600 '/' Tc=6.0 min CN=WQ Runoff=3.46 cfs 0.263 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=7,546 sf 57.32% Impervious Runoff Depth>2.91"
Flow Length=300' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.52 cfs 0.042 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=24,663 sf 8.93% Impervious Runoff Depth>1.93"
Flow Length=344' Tc=8.6 min CN=WQ Runoff=1.11 cfs 0.091 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=11,312 sf 38.41% Impervious Runoff Depth>2.95"
Tc=6.0 min CN=WQ Runoff=0.82 cfs 0.064 af

Subcatchment 5S: Canterberry Court Flow Runoff Area=36,412 sf 15.94% Impervious Runoff Depth>0.76"
Flow Length=187' Tc=6.0 min CN=WQ Runoff=0.57 cfs 0.053 af

Subcatchment 6S: Lower Shadowbrook Dr Runoff Area=72,715 sf 12.69% Impervious Runoff Depth>0.62"
Flow Length=137' Tc=6.0 min CN=WQ Runoff=0.90 cfs 0.087 af

Subcatchment 7S: Rear Overland Flow to Runoff Area=85,028 sf 6.43% Impervious Runoff Depth>1.78"
Flow Length=183' Tc=11.5 min CN=WQ Runoff=3.20 cfs 0.290 af

Subcatchment 10S: Roadway Flow Runoff Area=13,692 sf 72.11% Impervious Runoff Depth>3.08"
Flow Length=307' Slope=0.0150 '/' Tc=6.0 min CN=WQ Runoff=0.97 cfs 0.081 af

Subcatchment 11S: Roadway Flow Runoff Area=25,722 sf 45.39% Impervious Runoff Depth>3.06"
Flow Length=279' Tc=6.0 min CN=WQ Runoff=1.91 cfs 0.150 af

Subcatchment 20S: Roadway Flow Runoff Area=2,774 sf 40.41% Impervious Runoff Depth>2.61"
Flow Length=65' Tc=6.0 min CN=WQ Runoff=0.17 cfs 0.014 af

Subcatchment 21S: Roadway Flow Runoff Area=9,904 sf 37.65% Impervious Runoff Depth>2.57"
Flow Length=203' Tc=6.0 min CN=WQ Runoff=0.61 cfs 0.049 af

Subcatchment 22S: Overland Flow to Pond Runoff Area=17,710 sf 12.85% Impervious Runoff Depth>1.69"
Flow Length=47' Slope=0.2127 '/' Tc=6.0 min CN=WQ Runoff=0.74 cfs 0.057 af

Subcatchment 30S: Roadway Flow Runoff Area=14,714 sf 52.43% Impervious Runoff Depth>3.37"
Flow Length=276' Tc=6.0 min CN=WQ Runoff=1.20 cfs 0.095 af

Subcatchment 31S: Roadway Flow Runoff Area=17,194 sf 38.30% Impervious Runoff Depth>2.60"
Flow Length=230' Tc=6.0 min CN=WQ Runoff=1.08 cfs 0.086 af

Subcatchment 32S: Roadway Flow Runoff Area=21,651 sf 47.90% Impervious Runoff Depth>3.16"
Flow Length=223' Tc=6.0 min CN=WQ Runoff=1.66 cfs 0.131 af

Subcatchment 33S: Roadway Flow Runoff Area=10,356 sf 52.43% Impervious Runoff Depth>2.65"
Flow Length=257' Tc=6.0 min CN=WQ Runoff=0.64 cfs 0.053 af

Subcatchment 40S: Roadway Flow Runoff Area=11,686 sf 72.99% Impervious Runoff Depth>3.28"
Flow Length=263' Slope=0.0150 '/' Tc=6.0 min CN=WQ Runoff=0.89 cfs 0.073 af

Subcatchment 41S: Roadway Flow Runoff Area=16,070 sf 43.83% Impervious Runoff Depth>3.11"
Flow Length=268' Tc=6.5 min CN=WQ Runoff=1.21 cfs 0.096 af

Subcatchment 42S: Flow to CB#200 Runoff Area=29,920 sf 35.58% Impervious Runoff Depth>2.75"
Flow Length=385' Tc=6.0 min CN=WQ Runoff=2.02 cfs 0.158 af

Subcatchment 50S: Roadway Flow Runoff Area=12,898 sf 58.95% Impervious Runoff Depth>2.54"
Flow Length=300' Tc=6.0 min CN=WQ Runoff=0.74 cfs 0.063 af

Subcatchment 51S: Roadway Flow Runoff Area=12,915 sf 65.19% Impervious Runoff Depth>2.80"
Flow Length=163' Tc=6.0 min CN=WQ Runoff=0.82 cfs 0.069 af

Subcatchment 60S: Roadway and Building Runoff Area=23,012 sf 40.57% Impervious Runoff Depth>1.78"
Flow Length=220' Tc=6.0 min CN=WQ Runoff=0.91 cfs 0.078 af

Subcatchment 61S: Roadway Flow Runoff Area=7,564 sf 83.43% Impervious Runoff Depth>3.55"
Flow Length=152' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.62 cfs 0.051 af

Subcatchment 62S: Bioretention Pond Area Runoff Area=6,453 sf 0.00% Impervious Runoff Depth>0.11"
Tc=6.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 70S: Overland Flow to Runoff Area=128,858 sf 1.40% Impervious Runoff Depth>2.04"
Flow Length=745' Tc=14.6 min CN=WQ Runoff=5.35 cfs 0.504 af

Subcatchment 71S: Roadway Flow Runoff Area=26,495 sf 66.16% Impervious Runoff Depth>3.15"
Flow Length=300' Tc=6.0 min CN=WQ Runoff=1.95 cfs 0.160 af

Subcatchment 72S: House Flow to Pond Runoff Area=49,031 sf 39.15% Impervious Runoff Depth>1.99"
Flow Length=127' Tc=6.0 min CN=WQ Runoff=2.24 cfs 0.187 af

Subcatchment 73S: Roadway Flow Runoff Area=5,932 sf 76.82% Impervious Runoff Depth>3.28"
Flow Length=200' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.45 cfs 0.037 af

Subcatchment 74S: Area in Circle to Runoff Area=17,656 sf 37.64% Impervious Runoff Depth>1.96"
Flow Length=40' Slope=0.1000 '/' Tc=6.0 min CN=WQ Runoff=0.80 cfs 0.066 af

Subcatchment 75S: Roadway Flow Runoff Area=13,639 sf 67.50% Impervious Runoff Depth>3.27"
Flow Length=196' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=1.04 cfs 0.085 af

Subcatchment 76S: Roadway Flow Runoff Area=93,020 sf 28.84% Impervious Runoff Depth>2.61"
Flow Length=468' Tc=9.0 min CN=WQ Runoff=5.44 cfs 0.465 af

Subcatchment 100S: Unit 1 Runoff Area=920 sf 100.00% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.007 af

Subcatchment 101S: Units 2 & 3 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af

Subcatchment 102S: Units 4 & 5 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af

Subcatchment 103S: Units 6 & 7 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af

Subcatchment 104S: Units 8 & 9 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af

Subcatchment 105S: Units 11 & 10 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af

Subcatchment 106S: Units 13 & 12 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af

Subcatchment 107S: Units 15 & 14 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af

Subcatchment 108S: Units 17 & 16 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=98 Runoff=0.18 cfs 0.015 af

Subcatchment 109S: Unit 18 Runoff Area=920 sf 100.00% Impervious Runoff Depth>4.23"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.007 af

Reach 1R: Tammy Court Inflow=3.46 cfs 0.263 af
Outflow=3.46 cfs 0.263 af

Reach 2R: Ex CB1 Inflow=3.86 cfs 0.907 af
Outflow=3.86 cfs 0.907 af

Reach 3R: Ex CB 2 Inflow=1.11 cfs 0.091 af
Outflow=1.11 cfs 0.091 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=3.44 cfs 0.616 af
Outflow=3.44 cfs 0.616 af

Reach 5R: Canterberry Ct Drainage Inflow=0.57 cfs 0.053 af
Outflow=0.57 cfs 0.053 af

Reach 6R: Lower Shadowbrook Dr CB Inflow=0.90 cfs 0.087 af
Outflow=0.90 cfs 0.087 af

Pond 1P: Bioretention Pond #1 Peak Elev=292.84' Storage=7,512 cf Inflow=6.74 cfs 0.554 af
Primary=3.05 cfs 0.552 af Secondary=0.00 cfs 0.000 af Outflow=3.05 cfs 0.552 af

Pond 2P: Pocket Pond #1 Peak Elev=312.34' Storage=18,642 cf Inflow=10.28 cfs 0.821 af
Outflow=3.40 cfs 0.802 af

Pond 3P: Pocket Pond #2 Peak Elev=274.69' Storage=16,919 cf Inflow=13.02 cfs 1.251 af
Primary=8.57 cfs 1.233 af Secondary=0.00 cfs 0.000 af Outflow=8.57 cfs 1.233 af

Pond 30P: Infiltration Pond #1 Peak Elev=280.74' Storage=1,278 cf Inflow=0.80 cfs 0.066 af
Outflow=0.05 cfs 0.058 af

Pond 31P: Infiltration Pond #2 Peak Elev=275.12' Storage=3,993 cf Inflow=2.24 cfs 0.187 af
Discarded=0.09 cfs 0.125 af Primary=0.03 cfs 0.007 af Outflow=0.12 cfs 0.132 af

Pond 100: AD#100 Peak Elev=295.97' Inflow=0.09 cfs 0.007 af
8.0" Round Culvert n=0.013 L=58.1' S=0.0251 '/' Outflow=0.09 cfs 0.007 af

Pond 101: AD#101 Peak Elev=294.54' Inflow=0.27 cfs 0.022 af
8.0" Round Culvert n=0.013 L=37.0' S=0.0500 '/' Outflow=0.27 cfs 0.022 af

Pond 102: AD#102 Peak Elev=293.48' Inflow=0.36 cfs 0.030 af
8.0" Round Culvert n=0.013 L=27.4' S=0.0201 '/' Outflow=0.36 cfs 0.030 af

Pond 103: AD#103 Peak Elev=294.46' Inflow=0.18 cfs 0.015 af
8.0" Round Culvert n=0.013 L=59.0' S=0.0200 '/' Outflow=0.18 cfs 0.015 af

Pond 104: AD#104 Peak Elev=295.95' Inflow=0.99 cfs 0.082 af
8.0" Round Culvert n=0.013 L=16.6' S=0.0367 '/' Outflow=0.99 cfs 0.082 af

Pond 105: AD#105 Peak Elev=298.10' Inflow=0.81 cfs 0.067 af
8.0" Round Culvert n=0.013 L=53.8' S=0.0400 '/' Outflow=0.81 cfs 0.067 af

Pond 106: AD#106 Peak Elev=300.35' Inflow=0.63 cfs 0.052 af
8.0" Round Culvert n=0.013 L=55.9' S=0.0401 '/' Outflow=0.63 cfs 0.052 af

Pond 107: AD#107 Peak Elev=303.27' Inflow=0.45 cfs 0.037 af
8.0" Round Culvert n=0.013 L=64.0' S=0.0450 '/' Outflow=0.45 cfs 0.037 af

Pond 108: AD#108 Peak Elev=306.14' Inflow=0.27 cfs 0.022 af
8.0" Round Culvert n=0.013 L=64.5' S=0.0448 '/' Outflow=0.27 cfs 0.022 af

Pond 109: AD#109 Peak Elev=308.85' Inflow=0.09 cfs 0.007 af
8.0" Round Culvert n=0.013 L=49.9' S=0.0549 '/' Outflow=0.09 cfs 0.007 af

Pond CB11: CB#11 Peak Elev=312.37' Inflow=4.58 cfs 0.364 af
18.0" Round Culvert n=0.013 L=30.3' S=0.0050 '/' Outflow=4.58 cfs 0.364 af

Pond CB110: CB#110 Peak Elev=312.37' Inflow=1.20 cfs 0.095 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=1.20 cfs 0.095 af

Pond CB12: CB#12 Peak Elev=313.76' Inflow=2.30 cfs 0.184 af
15.0" Round Culvert n=0.013 L=106.0' S=0.0263 '/' Outflow=2.30 cfs 0.184 af

Pond CB120: CB#120 Peak Elev=314.05' Inflow=1.66 cfs 0.131 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=1.66 cfs 0.131 af

Pond CB14: CB#14 Peak Elev=308.83' Inflow=3.61 cfs 0.851 af
15.0" Round Culvert n=0.013 L=37.9' S=0.0150 '/' Outflow=3.61 cfs 0.851 af

Pond CB15: CB#15 Peak Elev=308.14' Inflow=3.67 cfs 0.865 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0539 '/' Outflow=3.67 cfs 0.865 af

Pond CB170: CB#170 Peak Elev=278.67' Inflow=2.39 cfs 0.197 af
15.0" Round Culvert n=0.013 L=36.7' S=0.0199 '/' Outflow=2.39 cfs 0.197 af

Pond CB171: CB#171 Peak Elev=279.00' Inflow=1.95 cfs 0.160 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=1.95 cfs 0.160 af

Pond CB19: CB #19 Peak Elev=278.06' Inflow=6.44 cfs 0.550 af
18.0" Round Culvert n=0.013 L=33.8' S=0.0151 '/' Outflow=6.44 cfs 0.550 af

Pond CB20: CB #20 Peak Elev=278.53' Inflow=5.44 cfs 0.465 af
18.0" Round Culvert n=0.013 L=22.0' S=0.0200 '/' Outflow=5.44 cfs 0.465 af

Pond CB200: CB#200 Peak Elev=292.90' Inflow=2.02 cfs 0.158 af
15.0" Round Culvert n=0.013 L=85.3' S=0.0050 '/' Outflow=2.02 cfs 0.158 af

Pond CB3: CB#3 Peak Elev=293.40' Inflow=4.72 cfs 0.395 af
15.0" Round Culvert n=0.013 L=80.0' S=0.0100 '/' Outflow=4.72 cfs 0.395 af

Pond CB30: CB#30 Peak Elev=293.44' Inflow=1.25 cfs 0.103 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=1.25 cfs 0.103 af

Pond CB4: CB#4 Peak Elev=295.05' Inflow=2.56 cfs 0.214 af
15.0" Round Culvert n=0.013 L=80.9' S=0.0205 '/' Outflow=2.56 cfs 0.214 af

Pond CB5: CB#5 Peak Elev=295.32' Inflow=1.73 cfs 0.145 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=1.73 cfs 0.145 af

Pond CB80: CB#80 Peak Elev=312.38' Inflow=2.09 cfs 0.169 af
15.0" Round Culvert n=0.013 L=15.1' S=0.0053 '/' Outflow=2.09 cfs 0.169 af

Pond CB800: CB#800 Peak Elev=312.38' Inflow=0.89 cfs 0.073 af
15.0" Round Culvert n=0.013 L=22.7' S=0.0048 '/' Outflow=0.89 cfs 0.073 af

Pond CB9: CB#9 Peak Elev=314.91' Inflow=2.87 cfs 0.231 af
15.0" Round Culvert n=0.013 L=203.6' S=0.0174 '/' Outflow=2.87 cfs 0.231 af

Pond CB90: CB#90 Peak Elev=315.24' Inflow=0.97 cfs 0.081 af
15.0" Round Culvert n=0.013 L=29.8' S=0.0201 '/' Outflow=0.97 cfs 0.081 af

Pond DMH111: DMH#111 Peak Elev=312.35' Inflow=4.58 cfs 0.364 af
24.0" Round Culvert n=0.013 L=40.3' S=0.0050 '/' Outflow=4.58 cfs 0.364 af

Pond DMH17: DMH#17 Peak Elev=276.23' Inflow=8.74 cfs 0.747 af
24.0" Round Culvert n=0.013 L=279.8' S=0.0100 '/' Outflow=8.74 cfs 0.747 af

Pond DMH18: DMH#18 Peak Elev=277.38' Inflow=6.44 cfs 0.550 af
18.0" Round Culvert n=0.013 L=71.6' S=0.0149 '/' Outflow=6.44 cfs 0.550 af

Pond DMH2: DMH#2 Peak Elev=292.89' Inflow=4.72 cfs 0.395 af
18.0" Round Culvert n=0.013 L=50.2' S=0.0030 '/' Outflow=4.72 cfs 0.395 af

Pond DMH8: DMH#8 Peak Elev=312.37' Inflow=4.96 cfs 0.400 af
18.0" Round Culvert n=0.013 L=13.4' S=0.0052 '/' Outflow=4.96 cfs 0.400 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=6.73 cfs 0.966 af
Primary=6.73 cfs 0.966 af

Link B: pond at beginning of neighborhood Inflow=4.78 cfs 1.051 af
Primary=4.78 cfs 1.051 af

Link C: Wetlands Inflow=10.94 cfs 1.531 af
Primary=10.94 cfs 1.531 af

Total Runoff Area = 20.68 ac Runoff Volume = 3.831 af Average Runoff Depth = 2.22"
71.10% Pervious = 14.70 ac 28.90% Impervious = 5.98 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 3.46 cfs @ 12.09 hrs, Volume= 0.263 af, Depth> 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
3,365	98	Roofs, HSG D
6,582	98	Roofs, HSG A
34,775	80	>75% Grass cover, Good, HSG D
8,430	39	>75% Grass cover, Good, HSG A
4,407	77	Woods, Good, HSG D
57,559		Weighted Average
47,612		82.72% Pervious Area
9,947		17.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	50	0.6600	0.57		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	213	0.6600	5.69		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	263	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 0.52 cfs @ 12.09 hrs, Volume= 0.042 af, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
4,085	98	Paved parking, HSG A
240	98	Roofs, HSG D
1,432	80	>75% Grass cover, Good, HSG D
1,789	39	>75% Grass cover, Good, HSG A
7,546		Weighted Average
3,221		42.68% Pervious Area
4,325		57.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.5	250	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 1.11 cfs @ 12.12 hrs, Volume= 0.091 af, Depth> 1.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
257	98	Roofs, HSG A
6,196	80	>75% Grass cover, Good, HSG D
5,530	39	>75% Grass cover, Good, HSG A
10,329	77	Woods, Good, HSG D
405	30	Woods, Good, HSG A
1,946	98	Paved parking, HSG A
24,663		Weighted Average
22,460		91.07% Pervious Area
2,203		8.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1200	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
1.9	226	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	48	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	20	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.6	344	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.064 af, Depth> 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
2,537	80	>75% Grass cover, Good, HSG D
400	39	>75% Grass cover, Good, HSG A
0	74	>75% Grass cover, Good, HSG C
4,345	98	Paved parking, HSG A
4,030	77	Woods, Good, HSG D
11,312		Weighted Average
6,967		61.59% Pervious Area
4,345		38.41% Impervious Area

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

Summary for Subcatchment 5S: Canterberry Court Flow

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.053 af, Depth> 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,564	98	Roofs, HSG A
30,607	39	>75% Grass cover, Good, HSG A
4,241	98	Paved parking, HSG A
36,412		Weighted Average
30,607		84.06% Pervious Area
5,805		15.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Dr Flow

Runoff = 0.90 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,440	98	Roofs, HSG A
3,236	30	Woods, Good, HSG A
60,250	39	>75% Grass cover, Good, HSG A
7,789	98	Paved parking, HSG A
72,715		Weighted Average
63,486		87.31% Pervious Area
9,229		12.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	38	0.4500	4.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.3600	3.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.0	137	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 7S: Rear Overland Flow to Wetland

Runoff = 3.20 cfs @ 12.17 hrs, Volume= 0.290 af, Depth> 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
2,935	98	Roofs, HSG D
2,417	98	Roofs, HSG A
118	98	Roofs, HSG C
10,710	80	>75% Grass cover, Good, HSG D
8,039	39	>75% Grass cover, Good, HSG A
4,292	74	>75% Grass cover, Good, HSG C
19,271	77	Woods, Good, HSG D
26,053	70	Woods, Good, HSG C
11,193	55	Woods, Good, HSG B
85,028		Weighted Average
79,558		93.57% Pervious Area
5,470		6.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
1.7	133	0.0650	1.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.5	183	Total			

Summary for Subcatchment 10S: Roadway Flow

Runoff = 0.97 cfs @ 12.09 hrs, Volume= 0.081 af, Depth> 3.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
3,052	98	Roofs, HSG A
12	80	>75% Grass cover, Good, HSG D
3,807	39	>75% Grass cover, Good, HSG A
506	98	Paved parking, HSG D
6,315	98	Roofs, HSG A
13,692		Weighted Average
3,819		27.89% Pervious Area
9,873		72.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0150	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.7	257	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.5	307	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 11S: Roadway Flow

Runoff = 1.91 cfs @ 12.09 hrs, Volume= 0.150 af, Depth> 3.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
6,240	98	Roofs, HSG D
11,906	80	>75% Grass cover, Good, HSG D
2,142	39	>75% Grass cover, Good, HSG A
1,643	98	Roofs, HSG D
3,791	98	Roofs, HSG A
25,722		Weighted Average
14,048		54.61% Pervious Area
11,674		45.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	24	0.3300	0.37		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.3	26	0.0600	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.8	46	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	183	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	279	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 20S: Roadway Flow

Runoff = 0.17 cfs @ 12.09 hrs, Volume= 0.014 af, Depth> 2.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
396	98	Roofs, HSG D
993	80	>75% Grass cover, Good, HSG D
660	39	>75% Grass cover, Good, HSG A
725	98	Paved parking, HSG A
2,774		Weighted Average
1,653		59.59% Pervious Area
1,121		40.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	65	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 21S: Roadway Flow

Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.049 af, Depth> 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,651	98	Roofs, HSG D
365	98	Roofs, HSG A
3,879	80	>75% Grass cover, Good, HSG D
2,296	39	>75% Grass cover, Good, HSG A
4	98	Paved parking, HSG D
1,709	98	Paved parking, HSG A
9,904		Weighted Average
6,175		62.35% Pervious Area
3,729		37.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.9	98	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	55	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.1	203	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 22S: Overland Flow to Pond

Runoff = 0.74 cfs @ 12.09 hrs, Volume= 0.057 af, Depth> 1.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,512	98	Roofs, HSG D
645	98	Roofs, HSG A
8,034	80	>75% Grass cover, Good, HSG D
7,400	39	>75% Grass cover, Good, HSG A
119	98	Paved parking, HSG A
17,710		Weighted Average
15,434		87.15% Pervious Area
2,276		12.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	47	0.2127	0.36		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.2	47	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 30S: Roadway Flow

Runoff = 1.20 cfs @ 12.09 hrs, Volume= 0.095 af, Depth> 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
4,540	98	Paved parking, HSG D
6,935	80	>75% Grass cover, Good, HSG D
65	39	>75% Grass cover, Good, HSG A
1,636	98	Paved parking, HSG D
1,538	98	Paved parking, HSG A
14,714		Weighted Average
7,000		47.57% Pervious Area
7,714		52.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
1.1	64	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	162	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.6	276	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 31S: Roadway Flow

Runoff = 1.08 cfs @ 12.09 hrs, Volume= 0.086 af, Depth> 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
2,626	98	Paved parking, HSG D
1,214	98	Paved parking, HSG A
6,749	80	>75% Grass cover, Good, HSG D
3,860	39	>75% Grass cover, Good, HSG A
2,745	98	Paved parking, HSG A
17,194		Weighted Average
10,609		61.70% Pervious Area
6,585		38.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	50	0.2800	0.40		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	60	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	120	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	230	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 32S: Roadway Flow

Runoff = 1.66 cfs @ 12.09 hrs, Volume= 0.131 af, Depth> 3.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
5,015	98	Roofs, HSG D
8,256	80	>75% Grass cover, Good, HSG D
991	39	>75% Grass cover, Good, HSG A
1,964	98	Paved parking, HSG D
3,391	98	Paved parking, HSG A
2,034	77	Woods, Good, HSG D
21,651		Weighted Average
11,281		52.10% Pervious Area
10,370		47.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2500	0.17		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	10	0.2000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	63	0.3300	4.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	110	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.6	223	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 33S: Roadway Flow

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 0.053 af, Depth> 2.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
948	98	Roofs, HSG D
395	98	Roofs, HSG A
1,701	80	>75% Grass cover, Good, HSG D
3,225	39	>75% Grass cover, Good, HSG A
4,087	98	Paved parking, HSG A
10,356		Weighted Average
4,926		47.57% Pervious Area
5,430		52.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.2	37	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.8	257	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 40S: Roadway Flow

Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.073 af, Depth> 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
752	98	Roofs, HSG D
1,321	98	Roofs, HSG A
391	98	Roofs, HSG C
780	80	>75% Grass cover, Good, HSG D
2,326	39	>75% Grass cover, Good, HSG A
50	74	>75% Grass cover, Good, HSG C
1,115	98	Paved parking, HSG D
4,921	98	Paved parking, HSG A
30	98	Paved parking, HSG C
11,686		Weighted Average
3,156		27.01% Pervious Area
8,530		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0150	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.4	213	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	263	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 41S: Roadway Flow

Runoff = 1.21 cfs @ 12.10 hrs, Volume= 0.096 af, Depth> 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
2,949	98	Roofs, HSG D
157	98	Roofs, HSG A
8,262	80	>75% Grass cover, Good, HSG D
765	39	>75% Grass cover, Good, HSG A
1,393	98	Paved parking, HSG D
2,544	98	Paved parking, HSG A
16,070		Weighted Average
9,027		56.17% Pervious Area
7,043		43.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0250	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.5	10	0.3300	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	80	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	138	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.5	268	Total			

Summary for Subcatchment 42S: Flow to CB#200

Runoff = 2.02 cfs @ 12.09 hrs, Volume= 0.158 af, Depth> 2.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
3,134	39	>75% Grass cover, Good, HSG A
10,383	80	>75% Grass cover, Good, HSG D
3,530	74	>75% Grass cover, Good, HSG C
5,484	98	Paved parking, HSG A
2,228	77	Woods, Good, HSG D
170	98	Roofs, HSG A
90	98	Roofs, HSG C
2,670	98	Roofs, HSG D
1,237	98	Roofs, HSG A
994	98	Roofs, HSG C
29,920		Weighted Average
19,275		64.42% Pervious Area
10,645		35.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.2	335	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.9	385	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 50S: Roadway Flow

Runoff = 0.74 cfs @ 12.09 hrs, Volume= 0.063 af, Depth> 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
5,295	39	>75% Grass cover, Good, HSG A
7,603	98	Paved parking, HSG A
12,898		Weighted Average
5,295		41.05% Pervious Area
7,603		58.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0550	1.71		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.9	250	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 51S: Roadway Flow

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.069 af, Depth> 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
3,027	98	Roofs, HSG A
4,496	39	>75% Grass cover, Good, HSG A
5,392	98	Paved parking, HSG A
12,915		Weighted Average
4,496		34.81% Pervious Area
8,419		65.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	76	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.1	163	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 60S: Roadway and Building Flow

Runoff = 0.91 cfs @ 12.09 hrs, Volume= 0.078 af, Depth> 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
3,213	98	Roofs, HSG A
13,675	39	>75% Grass cover, Good, HSG A
6,124	98	Paved parking, HSG A
23,012		Weighted Average
13,675		59.43% Pervious Area
9,337		40.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.6	155	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.3	220	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 61S: Roadway Flow

Runoff = 0.62 cfs @ 12.09 hrs, Volume= 0.051 af, Depth> 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,253	39	>75% Grass cover, Good, HSG A
6,311	98	Paved parking, HSG A
7,564		Weighted Average
1,253		16.57% Pervious Area
6,311		83.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.6	102	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	152	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 62S: Bioretention Pond Area

Runoff = 0.00 cfs @ 14.75 hrs, Volume= 0.001 af, Depth> 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
6,453	39	>75% Grass cover, Good, HSG A
6,453		100.00% Pervious Area

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

Summary for Subcatchment 70S: Overland Flow to Detention Pond

Runoff = 5.35 cfs @ 12.21 hrs, Volume= 0.504 af, Depth> 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
607	98	Roofs, HSG D
1,192	98	Roofs, HSG A
24,819	80	>75% Grass cover, Good, HSG D
13,185	39	>75% Grass cover, Good, HSG A
89,055	77	Woods, Good, HSG D
128,858		Weighted Average
127,059		98.60% Pervious Area
1,799		1.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0800	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.6	391	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	304	0.0430	1.45		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.6	745	Total			

Summary for Subcatchment 71S: Roadway Flow

Runoff = 1.95 cfs @ 12.09 hrs, Volume= 0.160 af, Depth> 3.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
2,572	98	Roofs, HSG D
3,565	98	Roofs, HSG A
3,581	80	>75% Grass cover, Good, HSG D
5,385	39	>75% Grass cover, Good, HSG A
1,533	98	Paved parking, HSG D
9,859	98	Paved parking, HSG A
26,495		Weighted Average
8,966		33.84% Pervious Area
17,529		66.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
1.5	250	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.9	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 72S: House Flow to Pond

Runoff = 2.24 cfs @ 12.09 hrs, Volume= 0.187 af, Depth> 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
2,848	98	Roofs, HSG D
9,725	98	Roofs, HSG A
23,884	39	>75% Grass cover, Good, HSG A
4,734	80	>75% Grass cover, Good, HSG D
1,216	74	>75% Grass cover, Good, HSG C
1,330	98	Paved parking, HSG D
5,294	98	Paved parking, HSG A
49,031		Weighted Average
29,834		60.85% Pervious Area
19,197		39.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.3	77	0.3100	3.90		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	127	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 73S: Roadway Flow

Runoff = 0.45 cfs @ 12.09 hrs, Volume= 0.037 af, Depth> 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,375	39	>75% Grass cover, Good, HSG A
4,557	98	Paved parking, HSG A
5,932		Weighted Average
1,375		23.18% Pervious Area
4,557		76.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.9	150	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	200	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 74S: Area in Circle to Infiltration Pond

Runoff = 0.80 cfs @ 12.09 hrs, Volume= 0.066 af, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
4,851	98	Roofs, HSG A
8,558	39	>75% Grass cover, Good, HSG A
1,547	98	Roofs, HSG D
248	98	Roofs, HSG C
1,588	80	>75% Grass cover, Good, HSG D
864	74	>75% Grass cover, Good, HSG C
17,656		Weighted Average
11,010		62.36% Pervious Area
6,646		37.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	40	0.1000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.6	40	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 75S: Roadway Flow

Runoff = 1.04 cfs @ 12.09 hrs, Volume= 0.085 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
295	98	Roofs, HSG D
1,380	98	Roofs, HSG A
2,209	80	>75% Grass cover, Good, HSG D
2,224	39	>75% Grass cover, Good, HSG A
4,186	98	Paved parking, HSG D
3,345	98	Paved parking, HSG A
13,639		Weighted Average
4,433		32.50% Pervious Area
9,206		67.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.8	146	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	196	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 76S: Roadway Flow

Runoff = 5.44 cfs @ 12.13 hrs, Volume= 0.465 af, Depth> 2.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
14,560	98	Roofs, HSG D
1,133	98	Roofs, HSG A
24,384	80	>75% Grass cover, Good, HSG D
10,102	39	>75% Grass cover, Good, HSG A
31,709	77	Woods, Good, HSG D
7,686	98	Paved parking, HSG D
3,446	98	Paved parking, HSG A
93,020		Weighted Average
66,195		71.16% Pervious Area
26,825		28.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1200	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.9	130	0.2150	2.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.0	120	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	168	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.0	468	Total			

Summary for Subcatchment 100S: Unit 1

Runoff = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
920	98	Roofs, HSG A
920		100.00% Impervious Area

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

Summary for Subcatchment 101S: Units 2 & 3

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 102S: Units 4 & 5

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 103S: Units 6 & 7

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 104S: Units 8 & 9

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 105S: Units 11 & 10

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 106S: Units 13 & 12

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 107S: Units 15 & 14

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 108S: Units 17 & 16

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 109S: Unit 18

Runoff = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.47"

Area (sf)	CN	Description
920	98	Roofs, HSG A
920		100.00% Impervious Area

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

Summary for Reach 1R: Tammy Court

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

Inflow Area = 1.32 ac, 17.28% Impervious, Inflow Depth > 2.38" for 10-yr event
Inflow = 3.46 cfs @ 12.09 hrs, Volume= 0.263 af
Outflow = 3.46 cfs @ 12.09 hrs, Volume= 0.263 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Ex CB1

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

Inflow Area = 3.88 ac, 46.55% Impervious, Inflow Depth > 2.80" for 10-yr event
Inflow = 3.86 cfs @ 12.34 hrs, Volume= 0.907 af
Outflow = 3.86 cfs @ 12.34 hrs, Volume= 0.907 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Ex CB 2

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

Inflow Area = 0.57 ac, 8.93% Impervious, Inflow Depth > 1.93" for 10-yr event
Inflow = 1.11 cfs @ 12.12 hrs, Volume= 0.091 af
Outflow = 1.11 cfs @ 12.12 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area =	2.77 ac, 52.41% Impervious, Inflow Depth > 2.67"	for 10-yr event		
Inflow =	3.44 cfs @ 12.25 hrs, Volume=	0.616 af		
Outflow =	3.44 cfs @ 12.25 hrs, Volume=	0.616 af, Atten= 0%, Lag= 0.0 min		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area =	0.84 ac, 15.94% Impervious, Inflow Depth > 0.76"	for 10-yr event		
Inflow =	0.57 cfs @ 12.09 hrs, Volume=	0.053 af		
Outflow =	0.57 cfs @ 12.09 hrs, Volume=	0.053 af, Atten= 0%, Lag= 0.0 min		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Dr CB

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

Inflow Area =	1.67 ac, 12.69% Impervious, Inflow Depth > 0.62"	for 10-yr event		
Inflow =	0.90 cfs @ 12.09 hrs, Volume=	0.087 af		
Outflow =	0.90 cfs @ 12.09 hrs, Volume=	0.087 af, Atten= 0%, Lag= 0.0 min		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Bioretention Pond #1

Inflow Area =	2.51 ac, 53.85% Impervious, Inflow Depth > 2.65"	for 10-yr event		
Inflow =	6.74 cfs @ 12.09 hrs, Volume=	0.554 af		
Outflow =	3.05 cfs @ 12.27 hrs, Volume=	0.552 af, Atten= 55%, Lag= 11.0 min		
Primary =	3.05 cfs @ 12.27 hrs, Volume=	0.552 af		
Secondary =	0.00 cfs @ 0.00 hrs, Volume=	0.000 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 292.84' @ 12.27 hrs Surf.Area= 3,551 sf Storage= 7,512 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 79.0 min (842.6 - 763.7)

Volume	Invert	Avail.Storage	Storage Description
#1	288.00'	12,114 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
288.00	349	0	0
290.00	1,016	1,365	1,365
291.00	1,441	1,229	2,594
292.00	2,931	2,186	4,780
294.00	4,403	7,334	12,114

Device	Routing	Invert	Outlet Devices
#1	Secondary	293.80'	**4.0' 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	Device 5	288.00'	**10.000 in/hr Exfiltration over Surface area**
#3	Device 5	292.10'	**15.0" Vert. Orifice/Grate** C= 0.600
#4	Device 5	293.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	285.00'	**12.0" Round Culvert** L= 55.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 285.00' / 283.04' S= 0.0354 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.03 cfs @ 12.27 hrs HW=292.84' TW=0.00' (Dynamic Tailwater)
└─**5=Culvert** (Passes 3.03 cfs of 10.24 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.82 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 2.21 cfs @ 2.93 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=288.00' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Pocket Pond #1

[80] Warning: Exceeded Pond DMH111 by 0.15' @ 12.10 hrs (5.82 cfs 0.196 af)
[80] Warning: Exceeded Pond DMH8 by 0.04' @ 11.95 hrs (1.71 cfs 0.035 af)

Inflow Area = 3.42 ac, 46.71% Impervious, Inflow Depth > 2.89" for 10-yr event
Inflow = 10.28 cfs @ 12.09 hrs, Volume= 0.821 af
Outflow = 3.40 cfs @ 12.39 hrs, Volume= 0.802 af, Atten= 67%, Lag= 18.1 min
Primary = 3.40 cfs @ 12.39 hrs, Volume= 0.802 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 309.79' Surf.Area= 3,009 sf Storage= 5,826 cf
Peak Elev= 312.34' @ 12.39 hrs Surf.Area= 7,231 sf Storage= 18,642 cf (12,816 cf above start)

Plug-Flow detention time= 235.2 min calculated for 0.668 af (81% of inflow)
Center-of-Mass det. time= 103.4 min (878.6 - 775.2)

Volume	Invert	Avail.Storage	Storage Description
#1	306.00'	27,930 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
306.00	306	196.0	0	0	306
308.00	1,616	240.0	1,750	1,750	1,894
310.00	3,201	285.0	4,728	6,478	3,846
312.00	6,785	438.0	9,764	16,242	12,678
313.50	8,844	470.0	11,688	27,930	15,088

Device	Routing	Invert	Outlet Devices
#1	Device 4	309.80'	**4.5" Vert. Orifice/Grate** C= 0.600
#2	Device 4	311.50'	**14.0" Vert. Orifice/Grate** C= 0.600
#3	Device 4	313.10'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	309.75'	**15.0" Round Culvert** L= 93.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.75' / 307.89' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.39 cfs @ 12.39 hrs HW=312.34' TW=308.83' (Dynamic Tailwater)
└─**4=Culvert** (Passes 3.39 cfs of 8.29 cfs potential flow)
  ├─**1=Orifice/Grate** (Orifice Controls 0.82 cfs @ 7.39 fps)
  ├─**2=Orifice/Grate** (Orifice Controls 2.58 cfs @ 3.12 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 3P: Pocket Pond #2

Inflow Area = 6.15 ac, 22.36% Impervious, Inflow Depth > 2.44" for 10-yr event
Inflow = 13.02 cfs @ 12.14 hrs, Volume= 1.251 af
Outflow = 8.57 cfs @ 12.32 hrs, Volume= 1.233 af, Atten= 34%, Lag= 11.2 min
Primary = 8.57 cfs @ 12.32 hrs, Volume= 1.233 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 271.98' Surf.Area= 2,847 sf Storage= 5,675 cf
Peak Elev= 274.69' @ 12.32 hrs Surf.Area= 5,502 sf Storage= 16,919 cf (11,245 cf above start)

Plug-Flow detention time= 114.0 min calculated for 1.101 af (88% of inflow)
Center-of-Mass det. time= 29.1 min (833.7 - 804.6)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	25,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	408	0	0
269.00	790	599	599
270.00	1,250	1,020	1,619
272.00	2,863	4,113	5,732
274.00	4,762	7,625	13,357
276.00	6,894	11,656	25,013

Device	Routing	Invert	Outlet Devices
#1	Device 4	272.00'	**9.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	275.35'	**10.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#3	Device 4	273.80'	**24.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600
#4	Primary	272.00'	**18.0" Round Culvert** L= 105.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.57' S= 0.0041 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#5	Primary	275.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.53 cfs @ 12.32 hrs HW=274.69' TW=0.00' (Dynamic Tailwater)
- **4=Culvert** (Passes 8.53 cfs of 9.74 cfs potential flow)
  - **1=Orifice/Grate** (Orifice Controls 3.24 cfs @ 7.32 fps)
  - **3=Orifice/Grate** (Orifice Controls 5.29 cfs @ 3.18 fps)
- **5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=271.98' TW=0.00' (Dynamic Tailwater)
- **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 30P: Infiltration Pond #1

Inflow Area = 0.41 ac, 37.64% Impervious, Inflow Depth > 1.96" for 10-yr event
Inflow = 0.80 cfs @ 12.09 hrs, Volume= 0.066 af
Outflow = 0.05 cfs @ 13.81 hrs, Volume= 0.058 af, Atten= 94%, Lag= 103.4 min
Discarded = 0.05 cfs @ 13.81 hrs, Volume= 0.058 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 280.74' @ 13.81 hrs Surf.Area= 2,230 sf Storage= 1,278 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 171.7 min (942.3 - 770.6)

Volume	Invert	Avail.Storage	Storage Description
#1	280.00'	5,166 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
280.00	1,214	0	0
282.00	3,952	5,166	5,166

Device	Routing	Invert	Outlet Devices
#1	Discarded	280.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.05 cfs @ 13.81 hrs HW=280.74' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.05 cfs)

Summary for Pond 31P: Infiltration Pond #2

[92] Warning: Device #4 is above defined storage

Inflow Area = 1.13 ac, 39.15% Impervious, Inflow Depth > 1.99" for 10-yr event
Inflow = 2.24 cfs @ 12.09 hrs, Volume= 0.187 af
Outflow = 0.12 cfs @ 14.28 hrs, Volume= 0.132 af, Atten= 95%, Lag= 131.2 min
Discarded = 0.09 cfs @ 14.28 hrs, Volume= 0.125 af
Primary = 0.03 cfs @ 14.28 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 275.12' @ 14.28 hrs Surf.Area= 4,084 sf Storage= 3,993 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 151.9 min (920.6 - 768.7)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	7,938 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	3,030	0	0
276.00	4,908	7,938	7,938

Device	Routing	Invert	Outlet Devices
#1	Device 3	275.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	274.00'	**1.000 in/hr Exfiltration over Surface area**
#3	Primary	274.16'	**15.0" Round Culvert** L= 32.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 274.16' / 274.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Primary	276.40'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.09 cfs @ 14.28 hrs HW=275.12' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=0.03 cfs @ 14.28 hrs HW=275.12' TW=0.00' (Dynamic Tailwater)
├**3=Culvert** (Passes 0.03 cfs of 2.53 cfs potential flow)
│└**1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 1.19 fps)
└**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 100: AD#100

Inflow Area = 0.02 ac,100.00% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af
Outflow = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.97' @ 12.09 hrs
Flood Elev= 297.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	295.81'	**8.0" Round Culvert** L= 58.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 295.81' / 294.35' S= 0.0251 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.09 cfs @ 12.09 hrs HW=295.97' TW=294.54' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.09 cfs @ 1.36 fps)

Summary for Pond 101: AD#101

Inflow Area = 0.06 ac,100.00% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 0.27 cfs @ 12.09 hrs, Volume= 0.022 af
Outflow = 0.27 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.27 cfs @ 12.09 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.54' @ 12.09 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.25'	**8.0" Round Culvert** L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.25' / 292.40' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.26 cfs @ 12.09 hrs HW=294.54' TW=293.28' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.26 cfs @ 1.83 fps)

Summary for Pond 102: AD#102

Inflow Area = 0.08 ac,100.00% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 0.36 cfs @ 12.09 hrs, Volume= 0.030 af
Outflow = 0.36 cfs @ 12.09 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min
Primary = 0.36 cfs @ 12.09 hrs, Volume= 0.030 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.48' @ 12.19 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.95'	**8.0" Round Culvert** L= 27.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.95' / 292.40' S= 0.0201 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.18 cfs @ 12.09 hrs HW=293.35' TW=293.28' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 0.18 cfs @ 1.19 fps)

Summary for Pond 103: AD#103

Inflow Area = 0.04 ac,100.00% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af
Outflow = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.09 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.46' @ 12.09 hrs
Flood Elev= 297.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.23'	**8.0" Round Culvert** L= 59.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.23' / 293.05' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.18 cfs @ 12.09 hrs HW=294.46' TW=293.35' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.18 cfs @ 1.64 fps)

Summary for Pond 104: AD#104

Inflow Area = 0.23 ac,100.00% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 0.99 cfs @ 12.09 hrs, Volume= 0.082 af
Outflow = 0.99 cfs @ 12.09 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min
Primary = 0.99 cfs @ 12.09 hrs, Volume= 0.082 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.95' @ 12.09 hrs
Flood Elev= 299.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	295.27'	**8.0" Round Culvert** L= 16.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 295.27' / 294.66' S= 0.0367 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.97 cfs @ 12.09 hrs HW=295.93' TW=295.30' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.97 cfs @ 2.77 fps)

Summary for Pond 105: AD#105

Inflow Area = 0.19 ac,100.00% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 0.81 cfs @ 12.09 hrs, Volume= 0.067 af
Outflow = 0.81 cfs @ 12.09 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min
Primary = 0.81 cfs @ 12.09 hrs, Volume= 0.067 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 298.10' @ 12.09 hrs
Flood Elev= 301.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	297.53'	**8.0" Round Culvert** L= 53.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 297.53' / 295.38' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.79 cfs @ 12.09 hrs HW=298.09' TW=295.93' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.79 cfs @ 2.54 fps)

Summary for Pond 106: AD#106

Inflow Area = 0.15 ac,100.00% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 0.63 cfs @ 12.09 hrs, Volume= 0.052 af
Outflow = 0.63 cfs @ 12.09 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.63 cfs @ 12.09 hrs, Volume= 0.052 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 300.35' @ 12.09 hrs
Flood Elev= 303.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	299.87'	**8.0" Round Culvert** L= 55.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 299.87' / 297.63' S= 0.0401 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.61 cfs @ 12.09 hrs HW=300.34' TW=298.09' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.61 cfs @ 2.33 fps)

Summary for Pond 107: AD#107

Inflow Area = 0.11 ac,100.00% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 0.45 cfs @ 12.09 hrs, Volume= 0.037 af
Outflow = 0.45 cfs @ 12.09 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min
Primary = 0.45 cfs @ 12.09 hrs, Volume= 0.037 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 303.27' @ 12.09 hrs
Flood Elev= 306.63'

Device	Routing	Invert	Outlet Devices
#1	Primary	302.85'	**8.0" Round Culvert** L= 64.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 302.85' / 299.97' S= 0.0450 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.44 cfs @ 12.09 hrs HW=303.26' TW=300.34' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.44 cfs @ 1.93 fps)

Summary for Pond 108: AD#108

Inflow Area = 0.06 ac,100.00% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 0.27 cfs @ 12.09 hrs, Volume= 0.022 af
Outflow = 0.27 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.27 cfs @ 12.09 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 306.14' @ 12.09 hrs
Flood Elev= 309.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	305.85'	**8.0" Round Culvert** L= 64.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 305.85' / 302.96' S= 0.0448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.26 cfs @ 12.09 hrs HW=306.14' TW=303.26' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.26 cfs @ 1.83 fps)

Summary for Pond 109: AD#109

Inflow Area = 0.02 ac,100.00% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af
Outflow = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.85' @ 12.09 hrs
Flood Elev= 311.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	308.69'	**8.0" Round Culvert** L= 49.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 308.69' / 305.95' S= 0.0549 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.09 cfs @ 12.09 hrs HW=308.85' TW=306.14' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.09 cfs @ 1.36 fps)

Summary for Pond CB11: CB#11

[80] Warning: Exceeded Pond CB110 by 0.20' @ 12.10 hrs (2.65 cfs 0.090 af)

Inflow Area =	1.47 ac, 47.09% Impervious, Inflow Depth > 2.98"		for 10-yr event	
Inflow =	4.58 cfs @	12.09 hrs, Volume=	0.364 af	
Outflow =	4.58 cfs @	12.09 hrs, Volume=	0.364 af, Atten= 0%, Lag= 0.0 min	
Primary =	4.58 cfs @	12.09 hrs, Volume=	0.364 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.37' @ 12.45 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.04'	**18.0" Round Culvert** L= 30.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.04' / 309.89' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.21 cfs @ 12.09 hrs HW=311.78' TW=311.71' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.21 cfs @ 1.25 fps)

Summary for Pond CB110: CB#110

Inflow Area =	0.34 ac, 52.43% Impervious, Inflow Depth > 3.37"		for 10-yr event	
Inflow =	1.20 cfs @	12.09 hrs, Volume=	0.095 af	
Outflow =	1.20 cfs @	12.09 hrs, Volume=	0.095 af, Atten= 0%, Lag= 0.0 min	
Primary =	1.20 cfs @	12.09 hrs, Volume=	0.095 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.37' @ 12.50 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.25'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.25' / 310.14' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.58' TW=311.78' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB12: CB#12

Inflow Area = 0.73 ac, 49.36% Impervious, Inflow Depth > 3.00" for 10-yr event
Inflow = 2.30 cfs @ 12.09 hrs, Volume= 0.184 af
Outflow = 2.30 cfs @ 12.09 hrs, Volume= 0.184 af, Atten= 0%, Lag= 0.0 min
Primary = 2.30 cfs @ 12.09 hrs, Volume= 0.184 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.76' @ 12.09 hrs
Flood Elev= 317.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	313.00'	**15.0" Round Culvert** L= 106.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 313.00' / 310.21' S= 0.0263 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.25 cfs @ 12.09 hrs HW=313.75' TW=311.77' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.25 cfs @ 2.94 fps)

Summary for Pond CB120: CB#120

Inflow Area = 0.50 ac, 47.90% Impervious, Inflow Depth > 3.16" for 10-yr event
Inflow = 1.66 cfs @ 12.09 hrs, Volume= 0.131 af
Outflow = 1.66 cfs @ 12.09 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min
Primary = 1.66 cfs @ 12.09 hrs, Volume= 0.131 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 314.05' @ 12.11 hrs
Flood Elev= 317.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	313.32'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 313.32' / 313.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.49 cfs @ 12.09 hrs HW=314.03' TW=313.75' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.49 cfs @ 2.97 fps)

Summary for Pond CB14: CB#14

Inflow Area = 3.64 ac, 46.14% Impervious, Inflow Depth > 2.80" for 10-yr event
Inflow = 3.61 cfs @ 12.37 hrs, Volume= 0.851 af
Outflow = 3.61 cfs @ 12.37 hrs, Volume= 0.851 af, Atten= 0%, Lag= 0.0 min
Primary = 3.61 cfs @ 12.37 hrs, Volume= 0.851 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.83' @ 12.38 hrs
Flood Elev= 312.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	307.79'	**15.0" Round Culvert** L= 37.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 307.79' / 307.22' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.59 cfs @ 12.37 hrs HW=308.83' TW=308.14' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 3.59 cfs @ 4.46 fps)

Summary for Pond CB15: CB#15

Inflow Area = 3.71 ac, 46.04% Impervious, Inflow Depth > 2.80" for 10-yr event
Inflow = 3.67 cfs @ 12.36 hrs, Volume= 0.865 af
Outflow = 3.67 cfs @ 12.36 hrs, Volume= 0.865 af, Atten= 0%, Lag= 0.0 min
Primary = 3.67 cfs @ 12.36 hrs, Volume= 0.865 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.14' @ 12.36 hrs
Flood Elev= 312.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	307.12'	**15.0" Round Culvert** L= 120.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 307.12' / 300.65' S= 0.0539 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.67 cfs @ 12.36 hrs HW=308.14' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 3.67 cfs @ 3.43 fps)

Summary for Pond CB170: CB#170

Inflow Area = 0.74 ac, 68.11% Impervious, Inflow Depth > 3.17" for 10-yr event
Inflow = 2.39 cfs @ 12.09 hrs, Volume= 0.197 af
Outflow = 2.39 cfs @ 12.09 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.0 min
Primary = 2.39 cfs @ 12.09 hrs, Volume= 0.197 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.67' @ 12.09 hrs
Flood Elev= 281.97'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.90'	**15.0" Round Culvert** L= 36.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 277.90' / 277.17' S= 0.0199 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.33 cfs @ 12.09 hrs HW=278.66' TW=276.18' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 2.33 cfs @ 2.97 fps)

Summary for Pond CB171: CB#171

Inflow Area = 0.61 ac, 66.16% Impervious, Inflow Depth > 3.15" for 10-yr event
Inflow = 1.95 cfs @ 12.09 hrs, Volume= 0.160 af
Outflow = 1.95 cfs @ 12.09 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min
Primary = 1.95 cfs @ 12.09 hrs, Volume= 0.160 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 279.00' @ 12.10 hrs
Flood Elev= 281.97'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.22'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.22' / 278.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.77 cfs @ 12.09 hrs HW=278.99' TW=278.66' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.77 cfs @ 3.20 fps)

Summary for Pond CB19: CB #19

Inflow Area = 2.45 ac, 33.78% Impervious, Inflow Depth > 2.70" for 10-yr event
Inflow = 6.44 cfs @ 12.12 hrs, Volume= 0.550 af
Outflow = 6.44 cfs @ 12.12 hrs, Volume= 0.550 af, Atten= 0%, Lag= 0.0 min
Primary = 6.44 cfs @ 12.12 hrs, Volume= 0.550 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.06' @ 12.14 hrs
Flood Elev= 281.21'

Device	Routing	Invert	Outlet Devices
#1	Primary	276.67'	**18.0" Round Culvert** L= 33.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.67' / 276.16' S= 0.0151 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.83 cfs @ 12.12 hrs HW=278.01' TW=277.35' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 5.83 cfs @ 4.61 fps)

Summary for Pond CB20: CB #20

Inflow Area = 2.14 ac, 28.84% Impervious, Inflow Depth > 2.61" for 10-yr event
Inflow = 5.44 cfs @ 12.13 hrs, Volume= 0.465 af
Outflow = 5.44 cfs @ 12.13 hrs, Volume= 0.465 af, Atten= 0%, Lag= 0.0 min
Primary = 5.44 cfs @ 12.13 hrs, Volume= 0.465 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.53' @ 12.16 hrs
Flood Elev= 281.21'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.21'	**18.0" Round Culvert** L= 22.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 277.21' / 276.77' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.73 cfs @ 12.13 hrs HW=278.48' TW=278.03' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.73 cfs @ 3.99 fps)

Summary for Pond CB200: CB#200

Inflow Area = 0.69 ac, 35.58% Impervious, Inflow Depth > 2.75" for 10-yr event
Inflow = 2.02 cfs @ 12.09 hrs, Volume= 0.158 af
Outflow = 2.02 cfs @ 12.09 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
Primary = 2.02 cfs @ 12.09 hrs, Volume= 0.158 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 292.90' @ 12.29 hrs
Flood Elev= 300.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.88'	**15.0" Round Culvert** L= 85.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 291.88' / 291.45' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.41 cfs @ 12.09 hrs HW=292.71' TW=292.43' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.41 cfs @ 2.29 fps)

Summary for Pond CB3: CB#3

[80] Warning: Exceeded Pond CB30 by 0.14' @ 12.05 hrs (1.56 cfs 0.014 af)

Inflow Area = 1.67 ac, 66.11% Impervious, Inflow Depth > 2.83" for 10-yr event
Inflow = 4.72 cfs @ 12.09 hrs, Volume= 0.395 af
Outflow = 4.72 cfs @ 12.09 hrs, Volume= 0.395 af, Atten= 0%, Lag= 0.0 min
Primary = 4.72 cfs @ 12.09 hrs, Volume= 0.395 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.40' @ 12.10 hrs
Flood Elev= 296.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.09'	**15.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.09' / 291.29' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.19 cfs @ 12.09 hrs HW=293.36' TW=292.57' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.19 cfs @ 4.16 fps)

Summary for Pond CB30: CB#30

[80] Warning: Exceeded Pond 102 by 0.01' @ 12.15 hrs (0.07 cfs 0.000 af)

Inflow Area =	0.32 ac,	91.05% Impervious,	Inflow Depth >	3.86"	for 10-yr event
Inflow =	1.25 cfs @	12.09 hrs,	Volume=	0.103 af	
Outflow =	1.25 cfs @	12.09 hrs,	Volume=	0.103 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.25 cfs @	12.09 hrs,	Volume=	0.103 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.44' @ 12.15 hrs
Flood Elev= 296.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.30'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.30' / 292.19' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=293.28' TW=293.36' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB4: CB#4

Inflow Area =	0.82 ac,	72.75% Impervious,	Inflow Depth >	3.11"	for 10-yr event
Inflow =	2.56 cfs @	12.09 hrs,	Volume=	0.214 af	
Outflow =	2.56 cfs @	12.09 hrs,	Volume=	0.214 af,	Atten= 0%, Lag= 0.0 min
Primary =	2.56 cfs @	12.09 hrs,	Volume=	0.214 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.05' @ 12.09 hrs
Flood Elev= 298.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.24'	**15.0" Round Culvert** L= 80.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.24' / 292.58' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.49 cfs @ 12.09 hrs HW=295.03' TW=293.36' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.49 cfs @ 3.03 fps)

Summary for Pond CB5: CB#5

Inflow Area =	0.53 ac,	77.00% Impervious,	Inflow Depth >	3.28"	for 10-yr event
Inflow =	1.73 cfs @	12.09 hrs,	Volume=	0.145 af	
Outflow =	1.73 cfs @	12.09 hrs,	Volume=	0.145 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.73 cfs @	12.09 hrs,	Volume=	0.145 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 295.32' @ 12.11 hrs
Flood Elev= 298.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.56'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.56' / 294.34' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.53 cfs @ 12.09 hrs HW=295.30' TW=295.03' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.53 cfs @ 2.89 fps)

Summary for Pond CB80: CB#80

[80] Warning: Exceeded Pond CB800 by 0.58' @ 18.55 hrs (1.02 cfs 0.134 af)

Inflow Area =	0.64 ac, 56.11% Impervious, Inflow Depth > 3.18"	for 10-yr event		
Inflow =	2.09 cfs @	12.09 hrs, Volume=	0.169 af	
Outflow =	2.09 cfs @	12.09 hrs, Volume=	0.169 af, Atten= 0%, Lag= 0.0 min	
Primary =	2.09 cfs @	12.09 hrs, Volume=	0.169 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.38' @ 12.44 hrs
Flood Elev= 314.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.06'	**15.0" Round Culvert** L= 15.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.06' / 309.98' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.79' TW=311.95' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB800: CB#800

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=77)

Inflow Area =	0.27 ac, 72.99% Impervious, Inflow Depth > 3.28"	for 10-yr event		
Inflow =	0.89 cfs @	12.09 hrs, Volume=	0.073 af	
Outflow =	0.89 cfs @	12.09 hrs, Volume=	0.073 af, Atten= 0%, Lag= 0.0 min	
Primary =	0.89 cfs @	12.09 hrs, Volume=	0.073 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.38' @ 12.49 hrs
Flood Elev= 314.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.27'	**15.0" Round Culvert** L= 22.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.27' / 310.16' S= 0.0048 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.47' TW=311.75' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB9: CB#9

Inflow Area = 0.90 ac, 54.67% Impervious, Inflow Depth > 3.07" for 10-yr event
Inflow = 2.87 cfs @ 12.09 hrs, Volume= 0.231 af
Outflow = 2.87 cfs @ 12.09 hrs, Volume= 0.231 af, Atten= 0%, Lag= 0.0 min
Primary = 2.87 cfs @ 12.09 hrs, Volume= 0.231 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 314.91' @ 12.09 hrs
Flood Elev= 317.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	314.04'	**15.0" Round Culvert** L= 203.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 314.04' / 310.50' S= 0.0174 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.80 cfs @ 12.09 hrs HW=314.89' TW=311.93' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.80 cfs @ 3.14 fps)

Summary for Pond CB90: CB#90

Inflow Area = 0.31 ac, 72.11% Impervious, Inflow Depth > 3.08" for 10-yr event
Inflow = 0.97 cfs @ 12.09 hrs, Volume= 0.081 af
Outflow = 0.97 cfs @ 12.09 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
Primary = 0.97 cfs @ 12.09 hrs, Volume= 0.081 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 315.24' @ 12.10 hrs
Flood Elev= 317.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	314.74'	**15.0" Round Culvert** L= 29.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 314.74' / 314.14' S= 0.0201 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.86 cfs @ 12.09 hrs HW=315.23' TW=314.89' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.86 cfs @ 2.85 fps)

Summary for Pond DMH111: DMH#111

[80] Warning: Exceeded Pond CB11 by 0.07' @ 12.20 hrs (2.25 cfs 0.025 af)

Inflow Area =	1.47 ac,	47.09% Impervious,	Inflow Depth >	2.98"	for 10-yr event
Inflow =	4.58 cfs @	12.09 hrs,	Volume=	0.364 af	
Outflow =	4.58 cfs @	12.09 hrs,	Volume=	0.364 af,	Atten= 0%, Lag= 0.0 min
Primary =	4.58 cfs @	12.09 hrs,	Volume=	0.364 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.35' @ 12.43 hrs
Flood Elev= 314.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	309.79'	**24.0" Round Culvert** L= 40.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.79' / 309.59' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=311.71' TW=311.85' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH17: DMH#17

Inflow Area =	3.19 ac,	41.78% Impervious,	Inflow Depth >	2.81"	for 10-yr event
Inflow =	8.74 cfs @	12.11 hrs,	Volume=	0.747 af	
Outflow =	8.74 cfs @	12.11 hrs,	Volume=	0.747 af,	Atten= 0%, Lag= 0.0 min
Primary =	8.74 cfs @	12.11 hrs,	Volume=	0.747 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 276.23' @ 12.12 hrs
Flood Elev= 279.48'

Device	Routing	Invert	Outlet Devices
#1	Primary	274.89'	**24.0" Round Culvert** L= 279.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 274.89' / 272.09' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.18 cfs @ 12.11 hrs HW=276.22' TW=274.08' (Dynamic Tailwater)
1=Culvert (Outlet Controls 8.18 cfs @ 5.25 fps)

Summary for Pond DMH18: DMH#18

Inflow Area =	2.45 ac,	33.78% Impervious,	Inflow Depth >	2.70"	for 10-yr event
Inflow =	6.44 cfs @	12.12 hrs,	Volume=	0.550 af	
Outflow =	6.44 cfs @	12.12 hrs,	Volume=	0.550 af,	Atten= 0%, Lag= 0.0 min
Primary =	6.44 cfs @	12.12 hrs,	Volume=	0.550 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 277.38' @ 12.12 hrs
Flood Elev= 281.88'

Device	Routing	Invert	Outlet Devices
#1	Primary	276.06'	**18.0" Round Culvert** L= 71.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.06' / 274.99' S= 0.0149 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.27 cfs @ 12.12 hrs HW=277.35' TW=276.21' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 6.27 cfs @ 3.87 fps)

Summary for Pond DMH2: DMH#2

Inflow Area = 1.67 ac, 66.11% Impervious, Inflow Depth > 2.83" for 10-yr event
Inflow = 4.72 cfs @ 12.09 hrs, Volume= 0.395 af
Outflow = 4.72 cfs @ 12.09 hrs, Volume= 0.395 af, Atten= 0%, Lag= 0.0 min
Primary = 4.72 cfs @ 12.09 hrs, Volume= 0.395 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 292.89' @ 12.30 hrs
Flood Elev= 297.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.19'	**18.0" Round Culvert** L= 50.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 291.19' / 291.04' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.82 cfs @ 12.09 hrs HW=292.57' TW=292.41' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.82 cfs @ 2.17 fps)

Summary for Pond DMH8: DMH#8

[80] Warning: Exceeded Pond CB80 by 0.21' @ 12.05 hrs (2.69 cfs 0.083 af)

Inflow Area = 1.54 ac, 55.26% Impervious, Inflow Depth > 3.11" for 10-yr event
Inflow = 4.96 cfs @ 12.09 hrs, Volume= 0.400 af
Outflow = 4.96 cfs @ 12.09 hrs, Volume= 0.400 af, Atten= 0%, Lag= 0.0 min
Primary = 4.96 cfs @ 12.09 hrs, Volume= 0.400 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.37' @ 12.40 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	309.88'	**18.0" Round Culvert** L= 13.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.88' / 309.81' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.46 cfs @ 12.09 hrs HW=311.94' TW=311.85' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.46 cfs @ 1.39 fps)

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 5.76 ac, 32.84% Impervious, Inflow Depth > 2.01" for 10-yr event
Inflow = 6.73 cfs @ 12.12 hrs, Volume= 0.966 af
Primary = 6.73 cfs @ 12.12 hrs, Volume= 0.966 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: pond at beginning of neighborhood

Inflow Area = 5.28 ac, 37.67% Impervious, Inflow Depth > 2.39" for 10-yr event
Inflow = 4.78 cfs @ 12.15 hrs, Volume= 1.051 af
Primary = 4.78 cfs @ 12.15 hrs, Volume= 1.051 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.23 ac, 21.04% Impervious, Inflow Depth > 1.99" for 10-yr event
Inflow = 10.94 cfs @ 12.27 hrs, Volume= 1.531 af
Primary = 10.94 cfs @ 12.27 hrs, Volume= 1.531 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=57,559 sf 17.28% Impervious Runoff Depth>3.33"
Flow Length=263' Slope=0.6600 '/' Tc=6.0 min CN=WQ Runoff=4.78 cfs 0.367 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=7,546 sf 57.32% Impervious Runoff Depth>3.85"
Flow Length=300' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.67 cfs 0.056 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=24,663 sf 8.93% Impervious Runoff Depth>2.77"
Flow Length=344' Tc=8.6 min CN=WQ Runoff=1.57 cfs 0.131 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=11,312 sf 38.41% Impervious Runoff Depth>4.01"
Tc=6.0 min CN=WQ Runoff=1.11 cfs 0.087 af

Subcatchment 5S: Canterberry Court Flow Runoff Area=36,412 sf 15.94% Impervious Runoff Depth>1.16"
Flow Length=187' Tc=6.0 min CN=WQ Runoff=0.72 cfs 0.081 af

Subcatchment 6S: Lower Shadowbrook Dr Runoff Area=72,715 sf 12.69% Impervious Runoff Depth>0.98"
Flow Length=137' Tc=6.0 min CN=WQ Runoff=1.15 cfs 0.136 af

Subcatchment 7S: Rear Overland Flow to Runoff Area=85,028 sf 6.43% Impervious Runoff Depth>2.63"
Flow Length=183' Tc=11.5 min CN=WQ Runoff=4.79 cfs 0.429 af

Subcatchment 10S: Roadway Flow Runoff Area=13,692 sf 72.11% Impervious Runoff Depth>4.01"
Flow Length=307' Slope=0.0150 '/' Tc=6.0 min CN=WQ Runoff=1.23 cfs 0.105 af

Subcatchment 11S: Roadway Flow Runoff Area=25,722 sf 45.39% Impervious Runoff Depth>4.10"
Flow Length=279' Tc=6.0 min CN=WQ Runoff=2.54 cfs 0.202 af

Subcatchment 20S: Roadway Flow Runoff Area=2,774 sf 40.41% Impervious Runoff Depth>3.52"
Flow Length=65' Tc=6.0 min CN=WQ Runoff=0.23 cfs 0.019 af

Subcatchment 21S: Roadway Flow Runoff Area=9,904 sf 37.65% Impervious Runoff Depth>3.48"
Flow Length=203' Tc=6.0 min CN=WQ Runoff=0.82 cfs 0.066 af

Subcatchment 22S: Overland Flow to Pond Runoff Area=17,710 sf 12.85% Impervious Runoff Depth>2.42"
Flow Length=47' Slope=0.2127 '/' Tc=6.0 min CN=WQ Runoff=1.02 cfs 0.082 af

Subcatchment 30S: Roadway Flow Runoff Area=14,714 sf 52.43% Impervious Runoff Depth>4.48"
Flow Length=276' Tc=6.0 min CN=WQ Runoff=1.59 cfs 0.126 af

Subcatchment 31S: Roadway Flow Runoff Area=17,194 sf 38.30% Impervious Runoff Depth>3.52"
Flow Length=230' Tc=6.0 min CN=WQ Runoff=1.43 cfs 0.116 af

Subcatchment 32S: Roadway Flow Runoff Area=21,651 sf 47.90% Impervious Runoff Depth>4.23"
Flow Length=223' Tc=6.0 min CN=WQ Runoff=2.21 cfs 0.175 af

Subcatchment 33S: Roadway Flow Runoff Area=10,356 sf 52.43% Impervious Runoff Depth>3.52"
Flow Length=257' Tc=6.0 min CN=WQ Runoff=0.83 cfs 0.070 af

Subcatchment 40S: Roadway Flow Runoff Area=11,686 sf 72.99% Impervious Runoff Depth>4.27"
Flow Length=263' Slope=0.0150 '/' Tc=6.0 min CN=WQ Runoff=1.14 cfs 0.095 af

Subcatchment 41S: Roadway Flow Runoff Area=16,070 sf 43.83% Impervious Runoff Depth>4.18"
Flow Length=268' Tc=6.5 min CN=WQ Runoff=1.61 cfs 0.128 af

Subcatchment 42S: Flow to CB#200 Runoff Area=29,920 sf 35.58% Impervious Runoff Depth>3.75"
Flow Length=385' Tc=6.0 min CN=WQ Runoff=2.73 cfs 0.215 af

Subcatchment 50S: Roadway Flow Runoff Area=12,898 sf 58.95% Impervious Runoff Depth>3.34"
Flow Length=300' Tc=6.0 min CN=WQ Runoff=0.95 cfs 0.082 af

Subcatchment 51S: Roadway Flow Runoff Area=12,915 sf 65.19% Impervious Runoff Depth>3.66"
Flow Length=163' Tc=6.0 min CN=WQ Runoff=1.05 cfs 0.090 af

Subcatchment 60S: Roadway and Building Runoff Area=23,012 sf 40.57% Impervious Runoff Depth>2.41"
Flow Length=220' Tc=6.0 min CN=WQ Runoff=1.16 cfs 0.106 af

Subcatchment 61S: Roadway Flow Runoff Area=7,564 sf 83.43% Impervious Runoff Depth>4.58"
Flow Length=152' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.78 cfs 0.066 af

Subcatchment 62S: Bioretention Pond Area Runoff Area=6,453 sf 0.00% Impervious Runoff Depth>0.35"
Tc=6.0 min CN=39 Runoff=0.02 cfs 0.004 af

Subcatchment 70S: Overland Flow to Runoff Area=128,858 sf 1.40% Impervious Runoff Depth>2.97"
Flow Length=745' Tc=14.6 min CN=WQ Runoff=7.75 cfs 0.733 af

Subcatchment 71S: Roadway Flow Runoff Area=26,495 sf 66.16% Impervious Runoff Depth>4.13"
Flow Length=300' Tc=6.0 min CN=WQ Runoff=2.51 cfs 0.209 af

Subcatchment 72S: House Flow to Pond Runoff Area=49,031 sf 39.15% Impervious Runoff Depth>2.70"
Flow Length=127' Tc=6.0 min CN=WQ Runoff=2.91 cfs 0.253 af

Subcatchment 73S: Roadway Flow Runoff Area=5,932 sf 76.82% Impervious Runoff Depth>4.24"
Flow Length=200' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.57 cfs 0.048 af

Subcatchment 74S: Area in Circle to Runoff Area=17,656 sf 37.64% Impervious Runoff Depth>2.66"
Flow Length=40' Slope=0.1000 '/' Tc=6.0 min CN=WQ Runoff=1.04 cfs 0.090 af

Subcatchment 75S: Roadway Flow Runoff Area=13,639 sf 67.50% Impervious Runoff Depth>4.28"
Flow Length=196' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=1.35 cfs 0.112 af

Subcatchment 76S: Roadway Flow Runoff Area=93,020 sf 28.84% Impervious Runoff Depth>3.59"
Flow Length=468' Tc=9.0 min CN=WQ Runoff=7.44 cfs 0.640 af

Subcatchment 100S: Unit 1 Runoff Area=920 sf 100.00% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.010 af

Subcatchment 101S: Units 2 & 3 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.019 af

Subcatchment 102S: Units 4 & 5 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.019 af

Subcatchment 103S: Units 6 & 7 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.019 af

Subcatchment 104S: Units 8 & 9 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.019 af

Subcatchment 105S: Units 11 & 10 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.019 af

Subcatchment 106S: Units 13 & 12 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.019 af

Subcatchment 107S: Units 15 & 14 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.019 af

Subcatchment 108S: Units 17 & 16 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.019 af

Subcatchment 109S: Unit 18 Runoff Area=920 sf 100.00% Impervious Runoff Depth>5.42"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.010 af

Reach 1R: Tammy Court Inflow=4.78 cfs 0.367 af
Outflow=4.78 cfs 0.367 af

Reach 2R: Ex CB1 Inflow=5.86 cfs 1.213 af
Outflow=5.86 cfs 1.213 af

Reach 3R: Ex CB 2 Inflow=1.57 cfs 0.131 af
Outflow=1.57 cfs 0.131 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=5.62 cfs 0.814 af
Outflow=5.62 cfs 0.814 af

Reach 5R: Canterberry Ct Drainage Inflow=0.72 cfs 0.081 af
Outflow=0.72 cfs 0.081 af

Reach 6R: Lower Shadowbrook Dr CB Inflow=1.15 cfs 0.136 af
Outflow=1.15 cfs 0.136 af

Pond 1P: Bioretention Pond #1 Peak Elev=293.20' Storage=8,829 cf Inflow=8.72 cfs 0.736 af
Primary=4.97 cfs 0.727 af Secondary=0.00 cfs 0.000 af Outflow=4.97 cfs 0.727 af

Pond 2P: Pocket Pond #1 Peak Elev=312.77' Storage=21,818 cf Inflow=13.60 cfs 1.099 af
Outflow=5.14 cfs 1.073 af

Pond 3P: Pocket Pond #2 Peak Elev=275.29' Storage=20,381 cf Inflow=18.04 cfs 1.742 af
Primary=11.40 cfs 1.721 af Secondary=0.00 cfs 0.000 af Outflow=11.40 cfs 1.721 af

Pond 30P: Infiltration Pond #1 Peak Elev=280.99' Storage=1,885 cf Inflow=1.04 cfs 0.090 af
Outflow=0.06 cfs 0.070 af

Pond 31P: Infiltration Pond #2 Peak Elev=275.41' Storage=5,200 cf Inflow=2.91 cfs 0.253 af
Discarded=0.10 cfs 0.135 af Primary=0.13 cfs 0.050 af Outflow=0.23 cfs 0.185 af

Pond 100: AD#100 Peak Elev=295.99' Inflow=0.11 cfs 0.010 af
8.0" Round Culvert n=0.013 L=58.1' S=0.0251 '/' Outflow=0.11 cfs 0.010 af

Pond 101: AD#101 Peak Elev=294.58' Inflow=0.34 cfs 0.029 af
8.0" Round Culvert n=0.013 L=37.0' S=0.0500 '/' Outflow=0.34 cfs 0.029 af

Pond 102: AD#102 Peak Elev=294.16' Inflow=0.46 cfs 0.038 af
8.0" Round Culvert n=0.013 L=27.4' S=0.0201 '/' Outflow=0.46 cfs 0.038 af

Pond 103: AD#103 Peak Elev=294.50' Inflow=0.23 cfs 0.019 af
8.0" Round Culvert n=0.013 L=59.0' S=0.0200 '/' Outflow=0.23 cfs 0.019 af

Pond 104: AD#104 Peak Elev=296.16' Inflow=1.26 cfs 0.105 af
8.0" Round Culvert n=0.013 L=16.6' S=0.0367 '/' Outflow=1.26 cfs 0.105 af

Pond 105: AD#105 Peak Elev=298.24' Inflow=1.03 cfs 0.086 af
8.0" Round Culvert n=0.013 L=53.8' S=0.0400 '/' Outflow=1.03 cfs 0.086 af

Pond 106: AD#106 Peak Elev=300.43' Inflow=0.80 cfs 0.067 af
8.0" Round Culvert n=0.013 L=55.9' S=0.0401 '/' Outflow=0.80 cfs 0.067 af

Pond 107: AD#107 Peak Elev=303.34' Inflow=0.57 cfs 0.048 af
8.0" Round Culvert n=0.013 L=64.0' S=0.0450 '/' Outflow=0.57 cfs 0.048 af

Pond 108: AD#108 Peak Elev=306.18' Inflow=0.34 cfs 0.029 af
8.0" Round Culvert n=0.013 L=64.5' S=0.0448 '/' Outflow=0.34 cfs 0.029 af

Pond 109: AD#109 Peak Elev=308.87' Inflow=0.11 cfs 0.010 af
8.0" Round Culvert n=0.013 L=49.9' S=0.0549 '/' Outflow=0.11 cfs 0.010 af

Pond CB11: CB#11 Peak Elev=312.83' Inflow=6.07 cfs 0.487 af
18.0" Round Culvert n=0.013 L=30.3' S=0.0050 '/' Outflow=6.07 cfs 0.487 af

Pond CB110: CB#110 Peak Elev=312.84' Inflow=1.59 cfs 0.126 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=1.59 cfs 0.126 af

Pond CB12: CB#12 Peak Elev=313.90' Inflow=3.04 cfs 0.245 af
15.0" Round Culvert n=0.013 L=106.0' S=0.0263 '/' Outflow=3.04 cfs 0.245 af

Pond CB120: CB#120 Peak Elev=314.20' Inflow=2.21 cfs 0.175 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=2.21 cfs 0.175 af

Pond CB14: CB#14 Peak Elev=309.48' Inflow=5.46 cfs 1.139 af
15.0" Round Culvert n=0.013 L=37.9' S=0.0150 '/' Outflow=5.46 cfs 1.139 af

Pond CB15: CB#15 Peak Elev=308.63' Inflow=5.56 cfs 1.158 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0539 '/' Outflow=5.56 cfs 1.158 af

Pond CB170: CB#170 Peak Elev=278.80' Inflow=3.07 cfs 0.257 af
15.0" Round Culvert n=0.013 L=36.7' S=0.0199 '/' Outflow=3.07 cfs 0.257 af

Pond CB171: CB#171 Peak Elev=279.15' Inflow=2.51 cfs 0.209 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=2.51 cfs 0.209 af

Pond CB19: CB #19 Peak Elev=278.80' Inflow=8.74 cfs 0.751 af
18.0" Round Culvert n=0.013 L=33.8' S=0.0151 '/' Outflow=8.74 cfs 0.751 af

Pond CB20: CB #20 Peak Elev=279.35' Inflow=7.44 cfs 0.640 af
18.0" Round Culvert n=0.013 L=22.0' S=0.0200 '/' Outflow=7.44 cfs 0.640 af

Pond CB200: CB#200 Peak Elev=293.27' Inflow=2.73 cfs 0.215 af
15.0" Round Culvert n=0.013 L=85.3' S=0.0050 '/' Outflow=2.73 cfs 0.215 af

Pond CB3: CB#3 Peak Elev=294.10' Inflow=5.99 cfs 0.517 af
15.0" Round Culvert n=0.013 L=80.0' S=0.0100 '/' Outflow=5.99 cfs 0.517 af

Pond CB30: CB#30 Peak Elev=294.14' Inflow=1.58 cfs 0.133 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=1.58 cfs 0.133 af

Pond CB4: CB#4 Peak Elev=295.18' Inflow=3.25 cfs 0.278 af
15.0" Round Culvert n=0.013 L=80.9' S=0.0205 '/' Outflow=3.25 cfs 0.278 af

Pond CB5: CB#5 Peak Elev=295.46' Inflow=2.20 cfs 0.187 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=2.20 cfs 0.187 af

Pond CB80: CB#80 Peak Elev=312.87' Inflow=2.74 cfs 0.224 af
15.0" Round Culvert n=0.013 L=15.1' S=0.0053 '/' Outflow=2.74 cfs 0.224 af

Pond CB800: CB#800 Peak Elev=312.87' Inflow=1.14 cfs 0.095 af
15.0" Round Culvert n=0.013 L=22.7' S=0.0048 '/' Outflow=1.14 cfs 0.095 af

Pond CB9: CB#9 Peak Elev=315.08' Inflow=3.77 cfs 0.307 af
15.0" Round Culvert n=0.013 L=203.6' S=0.0174 '/' Outflow=3.77 cfs 0.307 af

Pond CB90: CB#90 Peak Elev=315.35' Inflow=1.23 cfs 0.105 af
15.0" Round Culvert n=0.013 L=29.8' S=0.0201 '/' Outflow=1.23 cfs 0.105 af

Pond DMH111: DMH#111 Peak Elev=312.78' Inflow=6.07 cfs 0.487 af
24.0" Round Culvert n=0.013 L=40.3' S=0.0050 '/' Outflow=6.07 cfs 0.487 af

Pond DMH17: DMH#17 Peak Elev=276.56' Inflow=11.70 cfs 1.008 af
24.0" Round Culvert n=0.013 L=279.8' S=0.0100 '/' Outflow=11.70 cfs 1.008 af

Pond DMH18: DMH#18 Peak Elev=277.86' Inflow=8.74 cfs 0.751 af
18.0" Round Culvert n=0.013 L=71.6' S=0.0149 '/' Outflow=8.74 cfs 0.751 af

Pond DMH2: DMH#2 Peak Elev=293.31' Inflow=5.99 cfs 0.517 af
18.0" Round Culvert n=0.013 L=50.2' S=0.0030 '/' Outflow=5.99 cfs 0.517 af

Pond DMH8: DMH#8 Peak Elev=312.84' Inflow=6.51 cfs 0.530 af
18.0" Round Culvert n=0.013 L=13.4' S=0.0052 '/' Outflow=6.51 cfs 0.530 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=10.87 cfs 1.317 af
Primary=10.87 cfs 1.317 af

Link B: pond at beginning of neighborhood Inflow=7.91 cfs 1.424 af
Primary=7.91 cfs 1.424 af

Link C: Wetlands Inflow=15.49 cfs 2.200 af
Primary=15.49 cfs 2.200 af

Total Runoff Area = 20.68 ac Runoff Volume = 5.290 af Average Runoff Depth = 3.07"
71.10% Pervious = 14.70 ac 28.90% Impervious = 5.98 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 4.78 cfs @ 12.09 hrs, Volume= 0.367 af, Depth> 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
3,365	98	Roofs, HSG D
6,582	98	Roofs, HSG A
34,775	80	>75% Grass cover, Good, HSG D
8,430	39	>75% Grass cover, Good, HSG A
4,407	77	Woods, Good, HSG D
57,559		Weighted Average
47,612		82.72% Pervious Area
9,947		17.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	50	0.6600	0.57		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	213	0.6600	5.69		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	263	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 0.67 cfs @ 12.09 hrs, Volume= 0.056 af, Depth> 3.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
4,085	98	Paved parking, HSG A
240	98	Roofs, HSG D
1,432	80	>75% Grass cover, Good, HSG D
1,789	39	>75% Grass cover, Good, HSG A
7,546		Weighted Average
3,221		42.68% Pervious Area
4,325		57.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.5	250	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 1.57 cfs @ 12.12 hrs, Volume= 0.131 af, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
257	98	Roofs, HSG A
6,196	80	>75% Grass cover, Good, HSG D
5,530	39	>75% Grass cover, Good, HSG A
10,329	77	Woods, Good, HSG D
405	30	Woods, Good, HSG A
1,946	98	Paved parking, HSG A
24,663		Weighted Average
22,460		91.07% Pervious Area
2,203		8.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1200	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
1.9	226	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	48	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	20	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.6	344	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 1.11 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
2,537	80	>75% Grass cover, Good, HSG D
400	39	>75% Grass cover, Good, HSG A
0	74	>75% Grass cover, Good, HSG C
4,345	98	Paved parking, HSG A
4,030	77	Woods, Good, HSG D
11,312		Weighted Average
6,967		61.59% Pervious Area
4,345		38.41% Impervious Area

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

Summary for Subcatchment 5S: Canterberry Court Flow

Runoff = 0.72 cfs @ 12.09 hrs, Volume= 0.081 af, Depth> 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,564	98	Roofs, HSG A
30,607	39	>75% Grass cover, Good, HSG A
4,241	98	Paved parking, HSG A
36,412		Weighted Average
30,607		84.06% Pervious Area
5,805		15.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Dr Flow

Runoff = 1.15 cfs @ 12.09 hrs, Volume= 0.136 af, Depth> 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,440	98	Roofs, HSG A
3,236	30	Woods, Good, HSG A
60,250	39	>75% Grass cover, Good, HSG A
7,789	98	Paved parking, HSG A
72,715		Weighted Average
63,486		87.31% Pervious Area
9,229		12.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	38	0.4500	4.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.3600	3.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.0	137	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 7S: Rear Overland Flow to Wetland

Runoff = 4.79 cfs @ 12.16 hrs, Volume= 0.429 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
2,935	98	Roofs, HSG D
2,417	98	Roofs, HSG A
118	98	Roofs, HSG C
10,710	80	>75% Grass cover, Good, HSG D
8,039	39	>75% Grass cover, Good, HSG A
4,292	74	>75% Grass cover, Good, HSG C
19,271	77	Woods, Good, HSG D
26,053	70	Woods, Good, HSG C
11,193	55	Woods, Good, HSG B
85,028		Weighted Average
79,558		93.57% Pervious Area
5,470		6.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
1.7	133	0.0650	1.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.5	183	Total			

Summary for Subcatchment 10S: Roadway Flow

Runoff = 1.23 cfs @ 12.09 hrs, Volume= 0.105 af, Depth> 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
3,052	98	Roofs, HSG A
12	80	>75% Grass cover, Good, HSG D
3,807	39	>75% Grass cover, Good, HSG A
506	98	Paved parking, HSG D
6,315	98	Roofs, HSG A
13,692		Weighted Average
3,819		27.89% Pervious Area
9,873		72.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0150	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.7	257	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.5	307	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 11S: Roadway Flow

Runoff = 2.54 cfs @ 12.09 hrs, Volume= 0.202 af, Depth> 4.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
6,240	98	Roofs, HSG D
11,906	80	>75% Grass cover, Good, HSG D
2,142	39	>75% Grass cover, Good, HSG A
1,643	98	Roofs, HSG D
3,791	98	Roofs, HSG A
25,722		Weighted Average
14,048		54.61% Pervious Area
11,674		45.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	24	0.3300	0.37		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.3	26	0.0600	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.8	46	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	183	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	279	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 20S: Roadway Flow

Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 3.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
396	98	Roofs, HSG D
993	80	>75% Grass cover, Good, HSG D
660	39	>75% Grass cover, Good, HSG A
725	98	Paved parking, HSG A
2,774		Weighted Average
1,653		59.59% Pervious Area
1,121		40.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	65	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 21S: Roadway Flow

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.066 af, Depth> 3.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,651	98	Roofs, HSG D
365	98	Roofs, HSG A
3,879	80	>75% Grass cover, Good, HSG D
2,296	39	>75% Grass cover, Good, HSG A
4	98	Paved parking, HSG D
1,709	98	Paved parking, HSG A
9,904		Weighted Average
6,175		62.35% Pervious Area
3,729		37.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.9	98	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	55	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.1	203	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 22S: Overland Flow to Pond

Runoff = 1.02 cfs @ 12.09 hrs, Volume= 0.082 af, Depth> 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,512	98	Roofs, HSG D
645	98	Roofs, HSG A
8,034	80	>75% Grass cover, Good, HSG D
7,400	39	>75% Grass cover, Good, HSG A
119	98	Paved parking, HSG A
17,710		Weighted Average
15,434		87.15% Pervious Area
2,276		12.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	47	0.2127	0.36		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.2	47	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 30S: Roadway Flow

Runoff = 1.59 cfs @ 12.09 hrs, Volume= 0.126 af, Depth> 4.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
4,540	98	Paved parking, HSG D
6,935	80	>75% Grass cover, Good, HSG D
65	39	>75% Grass cover, Good, HSG A
1,636	98	Paved parking, HSG D
1,538	98	Paved parking, HSG A
14,714		Weighted Average
7,000		47.57% Pervious Area
7,714		52.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
1.1	64	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	162	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.6	276	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 31S: Roadway Flow

Runoff = 1.43 cfs @ 12.09 hrs, Volume= 0.116 af, Depth> 3.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
2,626	98	Paved parking, HSG D
1,214	98	Paved parking, HSG A
6,749	80	>75% Grass cover, Good, HSG D
3,860	39	>75% Grass cover, Good, HSG A
2,745	98	Paved parking, HSG A
17,194		Weighted Average
10,609		61.70% Pervious Area
6,585		38.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	50	0.2800	0.40		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	60	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	120	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	230	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 32S: Roadway Flow

Runoff = 2.21 cfs @ 12.09 hrs, Volume= 0.175 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
5,015	98	Roofs, HSG D
8,256	80	>75% Grass cover, Good, HSG D
991	39	>75% Grass cover, Good, HSG A
1,964	98	Paved parking, HSG D
3,391	98	Paved parking, HSG A
2,034	77	Woods, Good, HSG D
21,651		Weighted Average
11,281		52.10% Pervious Area
10,370		47.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2500	0.17		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	10	0.2000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	63	0.3300	4.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	110	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.6	223	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 33S: Roadway Flow

Runoff = 0.83 cfs @ 12.09 hrs, Volume= 0.070 af, Depth> 3.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
948	98	Roofs, HSG D
395	98	Roofs, HSG A
1,701	80	>75% Grass cover, Good, HSG D
3,225	39	>75% Grass cover, Good, HSG A
4,087	98	Paved parking, HSG A
10,356		Weighted Average
4,926		47.57% Pervious Area
5,430		52.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.2	37	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.8	257	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 40S: Roadway Flow

Runoff = 1.14 cfs @ 12.09 hrs, Volume= 0.095 af, Depth> 4.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
752	98	Roofs, HSG D
1,321	98	Roofs, HSG A
391	98	Roofs, HSG C
780	80	>75% Grass cover, Good, HSG D
2,326	39	>75% Grass cover, Good, HSG A
50	74	>75% Grass cover, Good, HSG C
1,115	98	Paved parking, HSG D
4,921	98	Paved parking, HSG A
30	98	Paved parking, HSG C
11,686		Weighted Average
3,156		27.01% Pervious Area
8,530		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0150	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.4	213	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	263	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 41S: Roadway Flow

Runoff = 1.61 cfs @ 12.09 hrs, Volume= 0.128 af, Depth> 4.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
2,949	98	Roofs, HSG D
157	98	Roofs, HSG A
8,262	80	>75% Grass cover, Good, HSG D
765	39	>75% Grass cover, Good, HSG A
1,393	98	Paved parking, HSG D
2,544	98	Paved parking, HSG A
16,070		Weighted Average
9,027		56.17% Pervious Area
7,043		43.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0250	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.5	10	0.3300	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	80	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	138	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.5	268	Total			

Summary for Subcatchment 42S: Flow to CB#200

Runoff = 2.73 cfs @ 12.09 hrs, Volume= 0.215 af, Depth> 3.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
3,134	39	>75% Grass cover, Good, HSG A
10,383	80	>75% Grass cover, Good, HSG D
3,530	74	>75% Grass cover, Good, HSG C
5,484	98	Paved parking, HSG A
2,228	77	Woods, Good, HSG D
170	98	Roofs, HSG A
90	98	Roofs, HSG C
2,670	98	Roofs, HSG D
1,237	98	Roofs, HSG A
994	98	Roofs, HSG C
29,920		Weighted Average
19,275		64.42% Pervious Area
10,645		35.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.2	335	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.9	385	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 50S: Roadway Flow

Runoff = 0.95 cfs @ 12.09 hrs, Volume= 0.082 af, Depth> 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
5,295	39	>75% Grass cover, Good, HSG A
7,603	98	Paved parking, HSG A
12,898		Weighted Average
5,295		41.05% Pervious Area
7,603		58.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0550	1.71		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.9	250	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 51S: Roadway Flow

Runoff = 1.05 cfs @ 12.09 hrs, Volume= 0.090 af, Depth> 3.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
3,027	98	Roofs, HSG A
4,496	39	>75% Grass cover, Good, HSG A
5,392	98	Paved parking, HSG A
12,915		Weighted Average
4,496		34.81% Pervious Area
8,419		65.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	76	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.1	163	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 60S: Roadway and Building Flow

Runoff = 1.16 cfs @ 12.09 hrs, Volume= 0.106 af, Depth> 2.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
3,213	98	Roofs, HSG A
13,675	39	>75% Grass cover, Good, HSG A
6,124	98	Paved parking, HSG A
23,012		Weighted Average
13,675		59.43% Pervious Area
9,337		40.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.6	155	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.3	220	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 61S: Roadway Flow

Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.066 af, Depth> 4.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,253	39	>75% Grass cover, Good, HSG A
6,311	98	Paved parking, HSG A
7,564		Weighted Average
1,253		16.57% Pervious Area
6,311		83.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.6	102	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	152	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 62S: Bioretention Pond Area

Runoff = 0.02 cfs @ 12.38 hrs, Volume= 0.004 af, Depth> 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
6,453	39	>75% Grass cover, Good, HSG A
6,453		100.00% Pervious Area

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

Summary for Subcatchment 70S: Overland Flow to Detention Pond

Runoff = 7.75 cfs @ 12.20 hrs, Volume= 0.733 af, Depth> 2.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
607	98	Roofs, HSG D
1,192	98	Roofs, HSG A
24,819	80	>75% Grass cover, Good, HSG D
13,185	39	>75% Grass cover, Good, HSG A
89,055	77	Woods, Good, HSG D
128,858		Weighted Average
127,059		98.60% Pervious Area
1,799		1.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0800	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.6	391	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	304	0.0430	1.45		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.6	745	Total			

Summary for Subcatchment 71S: Roadway Flow

Runoff = 2.51 cfs @ 12.09 hrs, Volume= 0.209 af, Depth> 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
2,572	98	Roofs, HSG D
3,565	98	Roofs, HSG A
3,581	80	>75% Grass cover, Good, HSG D
5,385	39	>75% Grass cover, Good, HSG A
1,533	98	Paved parking, HSG D
9,859	98	Paved parking, HSG A
26,495		Weighted Average
8,966		33.84% Pervious Area
17,529		66.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
1.5	250	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.9	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 72S: House Flow to Pond

Runoff = 2.91 cfs @ 12.09 hrs, Volume= 0.253 af, Depth> 2.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
2,848	98	Roofs, HSG D
9,725	98	Roofs, HSG A
23,884	39	>75% Grass cover, Good, HSG A
4,734	80	>75% Grass cover, Good, HSG D
1,216	74	>75% Grass cover, Good, HSG C
1,330	98	Paved parking, HSG D
5,294	98	Paved parking, HSG A
49,031		Weighted Average
29,834		60.85% Pervious Area
19,197		39.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.3	77	0.3100	3.90		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	127	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 73S: Roadway Flow

Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.048 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,375	39	>75% Grass cover, Good, HSG A
4,557	98	Paved parking, HSG A
5,932		Weighted Average
1,375		23.18% Pervious Area
4,557		76.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.9	150	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	200	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 74S: Area in Circle to Infiltration Pond

Runoff = 1.04 cfs @ 12.09 hrs, Volume= 0.090 af, Depth> 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
4,851	98	Roofs, HSG A
8,558	39	>75% Grass cover, Good, HSG A
1,547	98	Roofs, HSG D
248	98	Roofs, HSG C
1,588	80	>75% Grass cover, Good, HSG D
864	74	>75% Grass cover, Good, HSG C
17,656		Weighted Average
11,010		62.36% Pervious Area
6,646		37.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	40	0.1000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.6	40	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 75S: Roadway Flow

Runoff = 1.35 cfs @ 12.09 hrs, Volume= 0.112 af, Depth> 4.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
295	98	Roofs, HSG D
1,380	98	Roofs, HSG A
2,209	80	>75% Grass cover, Good, HSG D
2,224	39	>75% Grass cover, Good, HSG A
4,186	98	Paved parking, HSG D
3,345	98	Paved parking, HSG A
13,639		Weighted Average
4,433		32.50% Pervious Area
9,206		67.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.8	146	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	196	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 76S: Roadway Flow

Runoff = 7.44 cfs @ 12.13 hrs, Volume= 0.640 af, Depth> 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
14,560	98	Roofs, HSG D
1,133	98	Roofs, HSG A
24,384	80	>75% Grass cover, Good, HSG D
10,102	39	>75% Grass cover, Good, HSG A
31,709	77	Woods, Good, HSG D
7,686	98	Paved parking, HSG D
3,446	98	Paved parking, HSG A
93,020		Weighted Average
66,195		71.16% Pervious Area
26,825		28.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1200	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.9	130	0.2150	2.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.0	120	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	168	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.0	468	Total			

Summary for Subcatchment 100S: Unit 1

Runoff = 0.11 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
920	98	Roofs, HSG A
920		100.00% Impervious Area

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

Summary for Subcatchment 101S: Units 2 & 3

Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 102S: Units 4 & 5

Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 103S: Units 6 & 7

Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 104S: Units 8 & 9

Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 105S: Units 11 & 10

Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 106S: Units 13 & 12

Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 107S: Units 15 & 14

Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 108S: Units 17 & 16

Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 109S: Unit 18

Runoff = 0.11 cfs @ 12.09 hrs, Volume= 0.010 af, Depth> 5.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.66"

Area (sf)	CN	Description
920	98	Roofs, HSG A
920		100.00% Impervious Area

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

Summary for Reach 1R: Tammy Court

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

Inflow Area = 1.32 ac, 17.28% Impervious, Inflow Depth > 3.33" for 25-yr event
Inflow = 4.78 cfs @ 12.09 hrs, Volume= 0.367 af
Outflow = 4.78 cfs @ 12.09 hrs, Volume= 0.367 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Ex CB1

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

Inflow Area = 3.88 ac, 46.55% Impervious, Inflow Depth > 3.75" for 25-yr event
Inflow = 5.86 cfs @ 12.24 hrs, Volume= 1.213 af
Outflow = 5.86 cfs @ 12.24 hrs, Volume= 1.213 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Ex CB 2

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

Inflow Area = 0.57 ac, 8.93% Impervious, Inflow Depth > 2.77" for 25-yr event
Inflow = 1.57 cfs @ 12.12 hrs, Volume= 0.131 af
Outflow = 1.57 cfs @ 12.12 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area =	2.77 ac,	52.41% Impervious,	Inflow Depth >	3.53"	for 25-yr event
Inflow =	5.62 cfs @	12.19 hrs,	Volume=	0.814 af	
Outflow =	5.62 cfs @	12.19 hrs,	Volume=	0.814 af,	Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area =	0.84 ac,	15.94% Impervious,	Inflow Depth >	1.16"	for 25-yr event
Inflow =	0.72 cfs @	12.09 hrs,	Volume=	0.081 af	
Outflow =	0.72 cfs @	12.09 hrs,	Volume=	0.081 af,	Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Dr CB

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

Inflow Area =	1.67 ac,	12.69% Impervious,	Inflow Depth >	0.98"	for 25-yr event
Inflow =	1.15 cfs @	12.09 hrs,	Volume=	0.136 af	
Outflow =	1.15 cfs @	12.09 hrs,	Volume=	0.136 af,	Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Bioretention Pond #1

Inflow Area =	2.51 ac,	53.85% Impervious,	Inflow Depth >	3.52"	for 25-yr event
Inflow =	8.72 cfs @	12.09 hrs,	Volume=	0.736 af	
Outflow =	4.97 cfs @	12.22 hrs,	Volume=	0.727 af,	Atten= 43%, Lag= 7.7 min
Primary =	4.97 cfs @	12.22 hrs,	Volume=	0.727 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.20' @ 12.22 hrs Surf.Area= 3,815 sf Storage= 8,829 cf

Plug-Flow detention time= 77.3 min calculated for 0.725 af (99% of inflow)
Center-of-Mass det. time= 69.6 min (832.7 - 763.0)

Volume	Invert	Avail.Storage	Storage Description
#1	288.00'	12,114 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
288.00	349	0	0
290.00	1,016	1,365	1,365
291.00	1,441	1,229	2,594
292.00	2,931	2,186	4,780
294.00	4,403	7,334	12,114

Device	Routing	Invert	Outlet Devices
#1	Secondary	293.80'	**4.0' 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	Device 5	288.00'	**10.000 in/hr Exfiltration over Surface area**
#3	Device 5	292.10'	**15.0" Vert. Orifice/Grate** C= 0.600
#4	Device 5	293.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	285.00'	**12.0" Round Culvert** L= 55.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 285.00' / 283.04' S= 0.0354 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.93 cfs @ 12.22 hrs HW=293.19' TW=0.00' (Dynamic Tailwater)
- **5=Culvert** (Passes 4.93 cfs of 10.49 cfs potential flow)
  - **2=Exfiltration** (Exfiltration Controls 0.88 cfs)
  - **3=Orifice/Grate** (Orifice Controls 4.05 cfs @ 3.56 fps)
  - **4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=288.00' TW=0.00' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Pocket Pond #1

[80] Warning: Exceeded Pond DMH111 by 0.11' @ 12.00 hrs (4.97 cfs 0.251 af)
[80] Warning: Exceeded Pond DMH8 by 0.05' @ 11.85 hrs (1.93 cfs 0.075 af)

Inflow Area = 3.42 ac, 46.71% Impervious, Inflow Depth > 3.86" for 25-yr event
Inflow = 13.60 cfs @ 12.09 hrs, Volume= 1.099 af
Outflow = 5.14 cfs @ 12.34 hrs, Volume= 1.073 af, Atten= 62%, Lag= 15.3 min
Primary = 5.14 cfs @ 12.34 hrs, Volume= 1.073 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 309.79' Surf.Area= 3,009 sf Storage= 5,826 cf
Peak Elev= 312.77' @ 12.34 hrs Surf.Area= 7,801 sf Storage= 21,818 cf (15,992 cf above start)

Plug-Flow detention time= 201.7 min calculated for 0.937 af (85% of inflow)
Center-of-Mass det. time= 91.8 min (864.2 - 772.4)

Volume	Invert	Avail.Storage	Storage Description
#1	306.00'	27,930 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
306.00	306	196.0	0	0	306
308.00	1,616	240.0	1,750	1,750	1,894
310.00	3,201	285.0	4,728	6,478	3,846
312.00	6,785	438.0	9,764	16,242	12,678
313.50	8,844	470.0	11,688	27,930	15,088

Device	Routing	Invert	Outlet Devices
#1	Device 4	309.80'	**4.5" Vert. Orifice/Grate** C= 0.600
#2	Device 4	311.50'	**14.0" Vert. Orifice/Grate** C= 0.600
#3	Device 4	313.10'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	309.75'	**15.0" Round Culvert** L= 93.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.75' / 307.89' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.13 cfs @ 12.34 hrs HW=312.76' TW=309.48' (Dynamic Tailwater)
└─**4=Culvert** (Passes 5.13 cfs of 9.13 cfs potential flow)
  ├─**1=Orifice/Grate** (Orifice Controls 0.89 cfs @ 8.02 fps)
  ├─**2=Orifice/Grate** (Orifice Controls 4.25 cfs @ 3.97 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 3P: Pocket Pond #2

Inflow Area = 6.15 ac, 22.36% Impervious, Inflow Depth > 3.40" for 25-yr event
Inflow = 18.04 cfs @ 12.14 hrs, Volume= 1.742 af
Outflow = 11.40 cfs @ 12.34 hrs, Volume= 1.721 af, Atten= 37%, Lag= 11.9 min
Primary = 11.40 cfs @ 12.34 hrs, Volume= 1.721 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 271.98' Surf.Area= 2,847 sf Storage= 5,675 cf
Peak Elev= 275.29' @ 12.34 hrs Surf.Area= 6,136 sf Storage= 20,381 cf (14,706 cf above start)

Plug-Flow detention time= 94.9 min calculated for 1.588 af (91% of inflow)
Center-of-Mass det. time= 26.9 min (826.7 - 799.8)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	25,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	408	0	0
269.00	790	599	599
270.00	1,250	1,020	1,619
272.00	2,863	4,113	5,732
274.00	4,762	7,625	13,357
276.00	6,894	11,656	25,013

Device	Routing	Invert	Outlet Devices
#1	Device 4	272.00'	**9.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	275.35'	**10.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#3	Device 4	273.80'	**24.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600
#4	Primary	272.00'	**18.0" Round Culvert** L= 105.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.57' S= 0.0041 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#5	Primary	275.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=11.39 cfs @ 12.34 hrs HW=275.28' TW=0.00' (Dynamic Tailwater)
- **4=Culvert** (Barrel Controls 11.39 cfs @ 6.45 fps)
  - **1=Orifice/Grate** (Passes < 3.63 cfs potential flow)
  - **3=Orifice/Grate** (Passes < 8.24 cfs potential flow)
- **5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=271.98' TW=0.00' (Dynamic Tailwater)
- **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 30P: Infiltration Pond #1

Inflow Area = 0.41 ac, 37.64% Impervious, Inflow Depth > 2.66" for 25-yr event
Inflow = 1.04 cfs @ 12.09 hrs, Volume= 0.090 af
Outflow = 0.06 cfs @ 14.46 hrs, Volume= 0.070 af, Atten= 94%, Lag= 142.1 min
Discarded = 0.06 cfs @ 14.46 hrs, Volume= 0.070 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 280.99' @ 14.46 hrs Surf.Area= 2,576 sf Storage= 1,885 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 170.4 min (943.3 - 772.9)

Volume	Invert	Avail.Storage	Storage Description
#1	280.00'	5,166 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
280.00	1,214	0	0
282.00	3,952	5,166	5,166

Device	Routing	Invert	Outlet Devices
#1	Discarded	280.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.06 cfs @ 14.46 hrs HW=280.99' (Free Discharge)
↳**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Summary for Pond 31P: Infiltration Pond #2

[92] Warning: Device #4 is above defined storage

Inflow Area = 1.13 ac, 39.15% Impervious, Inflow Depth > 2.70" for 25-yr event
Inflow = 2.91 cfs @ 12.09 hrs, Volume= 0.253 af
Outflow = 0.23 cfs @ 13.52 hrs, Volume= 0.185 af, Atten= 92%, Lag= 86.0 min
Discarded = 0.10 cfs @ 13.52 hrs, Volume= 0.135 af
Primary = 0.13 cfs @ 13.52 hrs, Volume= 0.050 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 275.41' @ 13.52 hrs Surf.Area= 4,353 sf Storage= 5,200 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 130.4 min (901.4 - 771.0)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	7,938 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	3,030	0	0
276.00	4,908	7,938	7,938

Device	Routing	Invert	Outlet Devices
#1	Device 3	275.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	274.00'	**1.000 in/hr Exfiltration over Surface area**
#3	Primary	274.16'	**15.0" Round Culvert** L= 32.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 274.16' / 274.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Primary	276.40'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.10 cfs @ 13.52 hrs HW=275.41' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=0.13 cfs @ 13.52 hrs HW=275.41' TW=0.00' (Dynamic Tailwater)
├**3=Culvert** (Passes 0.13 cfs of 3.77 cfs potential flow)
│└**1=Orifice/Grate** (Orifice Controls 0.13 cfs @ 2.56 fps)
└**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 100: AD#100

Inflow Area = 0.02 ac,100.00% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 0.11 cfs @ 12.09 hrs, Volume= 0.010 af
Outflow = 0.11 cfs @ 12.09 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
Primary = 0.11 cfs @ 12.09 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.99' @ 12.09 hrs
Flood Elev= 297.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	295.81'	**8.0" Round Culvert** L= 58.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 295.81' / 294.35' S= 0.0251 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.11 cfs @ 12.09 hrs HW=295.99' TW=294.58' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.11 cfs @ 1.45 fps)

Summary for Pond 101: AD#101

Inflow Area = 0.06 ac,100.00% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 0.34 cfs @ 12.09 hrs, Volume= 0.029 af
Outflow = 0.34 cfs @ 12.09 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.09 hrs, Volume= 0.029 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.58' @ 12.09 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.25'	**8.0" Round Culvert** L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.25' / 292.40' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.33 cfs @ 12.09 hrs HW=294.58' TW=293.58' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.33 cfs @ 1.95 fps)

Summary for Pond 102: AD#102

Inflow Area = 0.08 ac,100.00% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.038 af
Outflow = 0.46 cfs @ 12.09 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 12.09 hrs, Volume= 0.038 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.16' @ 12.21 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.95'	**8.0" Round Culvert** L= 27.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.95' / 292.40' S= 0.0201 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=293.47' TW=293.58' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 103: AD#103

Inflow Area = 0.04 ac,100.00% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af
Outflow = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Primary = 0.23 cfs @ 12.09 hrs, Volume= 0.019 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.50' @ 12.09 hrs
Flood Elev= 297.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.23'	**8.0" Round Culvert** L= 59.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.23' / 293.05' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.22 cfs @ 12.09 hrs HW=294.49' TW=293.47' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.22 cfs @ 1.74 fps)

Summary for Pond 104: AD#104

Inflow Area = 0.23 ac,100.00% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 1.26 cfs @ 12.09 hrs, Volume= 0.105 af
Outflow = 1.26 cfs @ 12.09 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min
Primary = 1.26 cfs @ 12.09 hrs, Volume= 0.105 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 296.16' @ 12.09 hrs
Flood Elev= 299.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	295.27'	**8.0" Round Culvert** L= 16.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 295.27' / 294.66' S= 0.0367 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.22 cfs @ 12.09 hrs HW=296.13' TW=295.43' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.22 cfs @ 3.51 fps)

Summary for Pond 105: AD#105

Inflow Area = 0.19 ac,100.00% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 1.03 cfs @ 12.09 hrs, Volume= 0.086 af
Outflow = 1.03 cfs @ 12.09 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min
Primary = 1.03 cfs @ 12.09 hrs, Volume= 0.086 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 298.24' @ 12.09 hrs
Flood Elev= 301.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	297.53'	**8.0" Round Culvert** L= 53.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 297.53' / 295.38' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.00 cfs @ 12.09 hrs HW=298.22' TW=296.13' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.00 cfs @ 2.87 fps)

Summary for Pond 106: AD#106

Inflow Area = 0.15 ac,100.00% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 0.80 cfs @ 12.09 hrs, Volume= 0.067 af
Outflow = 0.80 cfs @ 12.09 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min
Primary = 0.80 cfs @ 12.09 hrs, Volume= 0.067 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 300.43' @ 12.09 hrs
Flood Elev= 303.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	299.87'	**8.0" Round Culvert** L= 55.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 299.87' / 297.63' S= 0.0401 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.78 cfs @ 12.09 hrs HW=300.42' TW=298.22' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.78 cfs @ 2.53 fps)

Summary for Pond 107: AD#107

Inflow Area = 0.11 ac,100.00% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 0.57 cfs @ 12.09 hrs, Volume= 0.048 af
Outflow = 0.57 cfs @ 12.09 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min
Primary = 0.57 cfs @ 12.09 hrs, Volume= 0.048 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 303.34' @ 12.09 hrs
Flood Elev= 306.63'

Device	Routing	Invert	Outlet Devices
#1	Primary	302.85'	**8.0" Round Culvert** L= 64.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 302.85' / 299.97' S= 0.0450 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.56 cfs @ 12.09 hrs HW=303.33' TW=300.42' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.56 cfs @ 2.08 fps)

Summary for Pond 108: AD#108

Inflow Area = 0.06 ac,100.00% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 0.34 cfs @ 12.09 hrs, Volume= 0.029 af
Outflow = 0.34 cfs @ 12.09 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.09 hrs, Volume= 0.029 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 306.18' @ 12.09 hrs
Flood Elev= 309.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	305.85'	**8.0" Round Culvert** L= 64.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 305.85' / 302.96' S= 0.0448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.33 cfs @ 12.09 hrs HW=306.18' TW=303.33' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.33 cfs @ 1.95 fps)

Summary for Pond 109: AD#109

Inflow Area = 0.02 ac,100.00% Impervious, Inflow Depth > 5.42" for 25-yr event
Inflow = 0.11 cfs @ 12.09 hrs, Volume= 0.010 af
Outflow = 0.11 cfs @ 12.09 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
Primary = 0.11 cfs @ 12.09 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.87' @ 12.09 hrs
Flood Elev= 311.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	308.69'	**8.0" Round Culvert** L= 49.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 308.69' / 305.95' S= 0.0549 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.11 cfs @ 12.09 hrs HW=308.87' TW=306.18' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.11 cfs @ 1.45 fps)

Summary for Pond CB11: CB#11

[80] Warning: Exceeded Pond CB110 by 0.34' @ 12.05 hrs (3.43 cfs 0.110 af)

Inflow Area =	1.47 ac, 47.09% Impervious, Inflow Depth > 3.98" for 25-yr event				
Inflow	=	6.07 cfs @	12.09 hrs, Volume=	0.487 af	
Outflow	=	6.07 cfs @	12.09 hrs, Volume=	0.487 af, Atten= 0%, Lag= 0.0 min	
Primary	=	6.07 cfs @	12.09 hrs, Volume=	0.487 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.83' @ 12.38 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.04'	**18.0" Round Culvert** L= 30.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.04' / 309.89' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.10 cfs @ 12.09 hrs HW=312.44' TW=312.21' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 4.10 cfs @ 2.32 fps)

Summary for Pond CB110: CB#110

Inflow Area =	0.34 ac, 52.43% Impervious, Inflow Depth > 4.48" for 25-yr event				
Inflow	=	1.59 cfs @	12.09 hrs, Volume=	0.126 af	
Outflow	=	1.59 cfs @	12.09 hrs, Volume=	0.126 af, Atten= 0%, Lag= 0.0 min	
Primary	=	1.59 cfs @	12.09 hrs, Volume=	0.126 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.84' @ 12.42 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.25'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.25' / 310.14' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=312.18' TW=312.44' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB12: CB#12

Inflow Area = 0.73 ac, 49.36% Impervious, Inflow Depth > 4.00" for 25-yr event
Inflow = 3.04 cfs @ 12.09 hrs, Volume= 0.245 af
Outflow = 3.04 cfs @ 12.09 hrs, Volume= 0.245 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.09 hrs, Volume= 0.245 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.90' @ 12.09 hrs
Flood Elev= 317.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	313.00'	**15.0" Round Culvert** L= 106.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 313.00' / 310.21' S= 0.0263 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.97 cfs @ 12.09 hrs HW=313.88' TW=312.44' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.97 cfs @ 3.20 fps)

Summary for Pond CB120: CB#120

Inflow Area = 0.50 ac, 47.90% Impervious, Inflow Depth > 4.23" for 25-yr event
Inflow = 2.21 cfs @ 12.09 hrs, Volume= 0.175 af
Outflow = 2.21 cfs @ 12.09 hrs, Volume= 0.175 af, Atten= 0%, Lag= 0.0 min
Primary = 2.21 cfs @ 12.09 hrs, Volume= 0.175 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 314.20' @ 12.11 hrs
Flood Elev= 317.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	313.32'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 313.32' / 313.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.94 cfs @ 12.09 hrs HW=314.18' TW=313.88' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.94 cfs @ 3.06 fps)

Summary for Pond CB14: CB#14

Inflow Area = 3.64 ac, 46.14% Impervious, Inflow Depth > 3.75" for 25-yr event
Inflow = 5.46 cfs @ 12.31 hrs, Volume= 1.139 af
Outflow = 5.46 cfs @ 12.31 hrs, Volume= 1.139 af, Atten= 0%, Lag= 0.0 min
Primary = 5.46 cfs @ 12.31 hrs, Volume= 1.139 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 309.48' @ 12.32 hrs
Flood Elev= 312.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	307.79'	**15.0" Round Culvert** L= 37.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 307.79' / 307.22' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.45 cfs @ 12.31 hrs HW=309.48' TW=308.63' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 5.45 cfs @ 4.44 fps)

Summary for Pond CB15: CB#15

Inflow Area = 3.71 ac, 46.04% Impervious, Inflow Depth > 3.75" for 25-yr event
Inflow = 5.56 cfs @ 12.29 hrs, Volume= 1.158 af
Outflow = 5.56 cfs @ 12.29 hrs, Volume= 1.158 af, Atten= 0%, Lag= 0.0 min
Primary = 5.56 cfs @ 12.29 hrs, Volume= 1.158 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.63' @ 12.29 hrs
Flood Elev= 312.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	307.12'	**15.0" Round Culvert** L= 120.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 307.12' / 300.65' S= 0.0539 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.56 cfs @ 12.29 hrs HW=308.63' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 5.56 cfs @ 4.53 fps)

Summary for Pond CB170: CB#170

Inflow Area = 0.74 ac, 68.11% Impervious, Inflow Depth > 4.15" for 25-yr event
Inflow = 3.07 cfs @ 12.09 hrs, Volume= 0.257 af
Outflow = 3.07 cfs @ 12.09 hrs, Volume= 0.257 af, Atten= 0%, Lag= 0.0 min
Primary = 3.07 cfs @ 12.09 hrs, Volume= 0.257 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.80' @ 12.09 hrs
Flood Elev= 281.97'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.90'	**15.0" Round Culvert** L= 36.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 277.90' / 277.17' S= 0.0199 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.99 cfs @ 12.09 hrs HW=278.79' TW=276.48' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.99 cfs @ 3.21 fps)

Summary for Pond CB171: CB#171

Inflow Area = 0.61 ac, 66.16% Impervious, Inflow Depth > 4.13" for 25-yr event
Inflow = 2.51 cfs @ 12.09 hrs, Volume= 0.209 af
Outflow = 2.51 cfs @ 12.09 hrs, Volume= 0.209 af, Atten= 0%, Lag= 0.0 min
Primary = 2.51 cfs @ 12.09 hrs, Volume= 0.209 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 279.15' @ 12.10 hrs
Flood Elev= 281.97'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.22'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.22' / 278.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.25 cfs @ 12.09 hrs HW=279.12' TW=278.79' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.25 cfs @ 3.31 fps)

Summary for Pond CB19: CB #19

Inflow Area = 2.45 ac, 33.78% Impervious, Inflow Depth > 3.68" for 25-yr event
Inflow = 8.74 cfs @ 12.12 hrs, Volume= 0.751 af
Outflow = 8.74 cfs @ 12.12 hrs, Volume= 0.751 af, Atten= 0%, Lag= 0.0 min
Primary = 8.74 cfs @ 12.12 hrs, Volume= 0.751 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.80' @ 12.15 hrs
Flood Elev= 281.21'

Device	Routing	Invert	Outlet Devices
#1	Primary	276.67'	**18.0" Round Culvert** L= 33.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.67' / 276.16' S= 0.0151 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=7.55 cfs @ 12.12 hrs HW=278.60' TW=277.81' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 7.55 cfs @ 4.27 fps)

Summary for Pond CB20: CB #20

Inflow Area = 2.14 ac, 28.84% Impervious, Inflow Depth > 3.59" for 25-yr event
Inflow = 7.44 cfs @ 12.13 hrs, Volume= 0.640 af
Outflow = 7.44 cfs @ 12.13 hrs, Volume= 0.640 af, Atten= 0%, Lag= 0.0 min
Primary = 7.44 cfs @ 12.13 hrs, Volume= 0.640 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 279.35' @ 12.18 hrs
Flood Elev= 281.21'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.21'	**18.0" Round Culvert** L= 22.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 277.21' / 276.77' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.18 cfs @ 12.13 hrs HW=279.01' TW=278.64' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 5.18 cfs @ 2.93 fps)

Summary for Pond CB200: CB#200

Inflow Area = 0.69 ac, 35.58% Impervious, Inflow Depth > 3.75" for 25-yr event
Inflow = 2.73 cfs @ 12.09 hrs, Volume= 0.215 af
Outflow = 2.73 cfs @ 12.09 hrs, Volume= 0.215 af, Atten= 0%, Lag= 0.0 min
Primary = 2.73 cfs @ 12.09 hrs, Volume= 0.215 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.27' @ 12.25 hrs
Flood Elev= 300.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.88'	**15.0" Round Culvert** L= 85.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 291.88' / 291.45' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.56 cfs @ 12.09 hrs HW=293.05' TW=292.91' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.56 cfs @ 1.69 fps)

Summary for Pond CB3: CB#3

[80] Warning: Exceeded Pond CB30 by 0.41' @ 12.10 hrs (3.78 cfs 0.035 af)

Inflow Area = 1.67 ac, 66.11% Impervious, Inflow Depth > 3.70" for 25-yr event
Inflow = 5.99 cfs @ 12.09 hrs, Volume= 0.517 af
Outflow = 5.99 cfs @ 12.09 hrs, Volume= 0.517 af, Atten= 0%, Lag= 0.0 min
Primary = 5.99 cfs @ 12.09 hrs, Volume= 0.517 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.10' @ 12.11 hrs
Flood Elev= 296.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.09'	**15.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.09' / 291.29' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.96 cfs @ 12.09 hrs HW=293.95' TW=293.10' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.96 cfs @ 4.04 fps)

Summary for Pond CB30: CB#30

[80] Warning: Exceeded Pond 102 by 0.40' @ 12.15 hrs (1.03 cfs 0.007 af)

Inflow Area =	0.32 ac, 91.05% Impervious, Inflow Depth > 4.97"	for 25-yr event			
Inflow =	1.58 cfs @	12.09 hrs, Volume=	0.133 af		
Outflow =	1.58 cfs @	12.09 hrs, Volume=	0.133 af,	Atten= 0%,	Lag= 0.0 min
Primary =	1.58 cfs @	12.09 hrs, Volume=	0.133 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 294.14' @ 12.16 hrs
Flood Elev= 296.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.30'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.30' / 292.19' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=293.58' TW=293.95' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB4: CB#4

Inflow Area =	0.82 ac, 72.75% Impervious, Inflow Depth > 4.04"	for 25-yr event			
Inflow =	3.25 cfs @	12.09 hrs, Volume=	0.278 af		
Outflow =	3.25 cfs @	12.09 hrs, Volume=	0.278 af,	Atten= 0%,	Lag= 0.0 min
Primary =	3.25 cfs @	12.09 hrs, Volume=	0.278 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.18' @ 12.09 hrs
Flood Elev= 298.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.24'	**15.0" Round Culvert** L= 80.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.24' / 292.58' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.16 cfs @ 12.09 hrs HW=295.16' TW=293.95' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.16 cfs @ 3.27 fps)

Summary for Pond CB5: CB#5

Inflow Area =	0.53 ac, 77.00% Impervious, Inflow Depth > 4.25"	for 25-yr event			
Inflow =	2.20 cfs @	12.09 hrs, Volume=	0.187 af		
Outflow =	2.20 cfs @	12.09 hrs, Volume=	0.187 af,	Atten= 0%,	Lag= 0.0 min
Primary =	2.20 cfs @	12.09 hrs, Volume=	0.187 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 295.46' @ 12.11 hrs
Flood Elev= 298.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.56'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.56' / 294.34' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.91 cfs @ 12.09 hrs HW=295.43' TW=295.16' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.91 cfs @ 2.94 fps)

Summary for Pond CB80: CB#80

[80] Warning: Exceeded Pond CB800 by 0.43' @ 12.10 hrs (3.89 cfs 0.105 af)

Inflow Area =	0.64 ac, 56.11% Impervious, Inflow Depth > 4.22"		for 25-yr event		
Inflow =	2.74 cfs @	12.09 hrs, Volume=	0.224 af		
Outflow =	2.74 cfs @	12.09 hrs, Volume=	0.224 af,	Atten= 0%,	Lag= 0.0 min
Primary =	2.74 cfs @	12.09 hrs, Volume=	0.224 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.87' @ 12.36 hrs
Flood Elev= 314.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.06'	**15.0" Round Culvert** L= 15.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.06' / 309.98' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=312.50' TW=312.63' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB800: CB#800

Inflow Area =	0.27 ac, 72.99% Impervious, Inflow Depth > 4.27"		for 25-yr event		
Inflow =	1.14 cfs @	12.09 hrs, Volume=	0.095 af		
Outflow =	1.14 cfs @	12.09 hrs, Volume=	0.095 af,	Atten= 0%,	Lag= 0.0 min
Primary =	1.14 cfs @	12.09 hrs, Volume=	0.095 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.87' @ 12.41 hrs
Flood Elev= 314.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.27'	**15.0" Round Culvert** L= 22.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.27' / 310.16' S= 0.0048 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=312.05' TW=312.46' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB9: CB#9

Inflow Area = 0.90 ac, 54.67% Impervious, Inflow Depth > 4.07" for 25-yr event
Inflow = 3.77 cfs @ 12.09 hrs, Volume= 0.307 af
Outflow = 3.77 cfs @ 12.09 hrs, Volume= 0.307 af, Atten= 0%, Lag= 0.0 min
Primary = 3.77 cfs @ 12.09 hrs, Volume= 0.307 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 315.08' @ 12.09 hrs
Flood Elev= 317.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	314.04'	**15.0" Round Culvert** L= 203.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 314.04' / 310.50' S= 0.0174 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.67 cfs @ 12.09 hrs HW=315.06' TW=312.61' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.67 cfs @ 3.43 fps)

Summary for Pond CB90: CB#90

Inflow Area = 0.31 ac, 72.11% Impervious, Inflow Depth > 4.01" for 25-yr event
Inflow = 1.23 cfs @ 12.09 hrs, Volume= 0.105 af
Outflow = 1.23 cfs @ 12.09 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min
Primary = 1.23 cfs @ 12.09 hrs, Volume= 0.105 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 315.35' @ 12.11 hrs
Flood Elev= 317.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	314.74'	**15.0" Round Culvert** L= 29.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 314.74' / 314.14' S= 0.0201 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.04 cfs @ 12.09 hrs HW=315.33' TW=315.06' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.04 cfs @ 2.68 fps)

Summary for Pond DMH111: DMH#111

[80] Warning: Exceeded Pond CB11 by 0.03' @ 11.95 hrs (1.51 cfs 0.025 af)

Inflow Area = 1.47 ac, 47.09% Impervious, Inflow Depth > 3.98" for 25-yr event
Inflow = 6.07 cfs @ 12.09 hrs, Volume= 0.487 af
Outflow = 6.07 cfs @ 12.09 hrs, Volume= 0.487 af, Atten= 0%, Lag= 0.0 min
Primary = 6.07 cfs @ 12.09 hrs, Volume= 0.487 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.78' @ 12.38 hrs
Flood Elev= 314.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	309.79'	**24.0" Round Culvert** L= 40.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.79' / 309.59' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=312.21' TW=312.31' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond DMH17: DMH#17

Inflow Area = 3.19 ac, 41.78% Impervious, Inflow Depth > 3.79" for 25-yr event
Inflow = 11.70 cfs @ 12.11 hrs, Volume= 1.008 af
Outflow = 11.70 cfs @ 12.11 hrs, Volume= 1.008 af, Atten= 0%, Lag= 0.0 min
Primary = 11.70 cfs @ 12.11 hrs, Volume= 1.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 276.56' @ 12.12 hrs
Flood Elev= 279.48'

Device	Routing	Invert	Outlet Devices
#1	Primary	274.89'	**24.0" Round Culvert** L= 279.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 274.89' / 272.09' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=10.63 cfs @ 12.11 hrs HW=276.53' TW=274.63' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 10.63 cfs @ 5.23 fps)

Summary for Pond DMH18: DMH#18

Inflow Area = 2.45 ac, 33.78% Impervious, Inflow Depth > 3.68" for 25-yr event
Inflow = 8.74 cfs @ 12.12 hrs, Volume= 0.751 af
Outflow = 8.74 cfs @ 12.12 hrs, Volume= 0.751 af, Atten= 0%, Lag= 0.0 min
Primary = 8.74 cfs @ 12.12 hrs, Volume= 0.751 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 277.86' @ 12.12 hrs
Flood Elev= 281.88'

Device	Routing	Invert	Outlet Devices
#1	Primary	276.06'	**18.0" Round Culvert**

L= 71.6' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 276.06' / 274.99' S= 0.0149 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.52 cfs @ 12.12 hrs HW=277.81' TW=276.53' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 8.52 cfs @ 4.82 fps)

Summary for Pond DMH2: DMH#2

Inflow Area = 1.67 ac, 66.11% Impervious, Inflow Depth > 3.70" for 25-yr event
Inflow = 5.99 cfs @ 12.09 hrs, Volume= 0.517 af
Outflow = 5.99 cfs @ 12.09 hrs, Volume= 0.517 af, Atten= 0%, Lag= 0.0 min
Primary = 5.99 cfs @ 12.09 hrs, Volume= 0.517 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.31' @ 12.23 hrs
Flood Elev= 297.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.19'	**18.0" Round Culvert**
			L= 50.2' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 291.19' / 291.04' S= 0.0030 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.81 cfs @ 12.09 hrs HW=293.10' TW=292.90' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.81 cfs @ 2.16 fps)

Summary for Pond DMH8: DMH#8

[80] Warning: Exceeded Pond CB80 by 0.26' @ 12.05 hrs (2.99 cfs 0.101 af)

Inflow Area = 1.54 ac, 55.26% Impervious, Inflow Depth > 4.13" for 25-yr event
Inflow = 6.51 cfs @ 12.09 hrs, Volume= 0.530 af
Outflow = 6.51 cfs @ 12.09 hrs, Volume= 0.530 af, Atten= 0%, Lag= 0.0 min
Primary = 6.51 cfs @ 12.09 hrs, Volume= 0.530 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 312.84' @ 12.33 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	309.88'	**18.0" Round Culvert**
			L= 13.4' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 309.88' / 309.81' S= 0.0052 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.73 cfs @ 12.09 hrs HW=312.62' TW=312.31' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 4.73 cfs @ 2.67 fps)

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 5.76 ac, 32.84% Impervious, Inflow Depth > 2.74" for 25-yr event
Inflow = 10.87 cfs @ 12.12 hrs, Volume= 1.317 af
Primary = 10.87 cfs @ 12.12 hrs, Volume= 1.317 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: pond at beginning of neighborhood

Inflow Area = 5.28 ac, 37.67% Impervious, Inflow Depth > 3.24" for 25-yr event
Inflow = 7.91 cfs @ 12.15 hrs, Volume= 1.424 af
Primary = 7.91 cfs @ 12.15 hrs, Volume= 1.424 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.23 ac, 21.04% Impervious, Inflow Depth > 2.86" for 25-yr event
Inflow = 15.49 cfs @ 12.21 hrs, Volume= 2.200 af
Primary = 15.49 cfs @ 12.21 hrs, Volume= 2.200 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Flow to Tammy Court Runoff Area=57,559 sf 17.28% Impervious Runoff Depth>4.25"
Flow Length=263' Slope=0.6600 '/' Tc=6.0 min CN=WQ Runoff=6.08 cfs 0.468 af

Subcatchment 2S: Shadowbrook Dr CB1 Runoff Area=7,546 sf 57.32% Impervious Runoff Depth>4.75"
Flow Length=300' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.82 cfs 0.069 af

Subcatchment 3S: Shadowbrook Dr CB2 Runoff Area=24,663 sf 8.93% Impervious Runoff Depth>3.60"
Flow Length=344' Tc=8.6 min CN=WQ Runoff=2.04 cfs 0.170 af

Subcatchment 4S: Flow to Shadowbrook Runoff Area=11,312 sf 38.41% Impervious Runoff Depth>5.02"
Tc=6.0 min CN=WQ Runoff=1.39 cfs 0.109 af

Subcatchment 5S: Canterberry Court Flow Runoff Area=36,412 sf 15.94% Impervious Runoff Depth>1.62"
Flow Length=187' Tc=6.0 min CN=WQ Runoff=1.04 cfs 0.113 af

Subcatchment 6S: Lower Shadowbrook Dr Runoff Area=72,715 sf 12.69% Impervious Runoff Depth>1.40"
Flow Length=137' Tc=6.0 min CN=WQ Runoff=1.73 cfs 0.195 af

Subcatchment 7S: Rear Overland Flow to Runoff Area=85,028 sf 6.43% Impervious Runoff Depth>3.49"
Flow Length=183' Tc=11.5 min CN=WQ Runoff=6.39 cfs 0.568 af

Subcatchment 10S: Roadway Flow Runoff Area=13,692 sf 72.11% Impervious Runoff Depth>4.90"
Flow Length=307' Slope=0.0150 '/' Tc=6.0 min CN=WQ Runoff=1.49 cfs 0.128 af

Subcatchment 11S: Roadway Flow Runoff Area=25,722 sf 45.39% Impervious Runoff Depth>5.09"
Flow Length=279' Tc=6.0 min CN=WQ Runoff=3.14 cfs 0.251 af

Subcatchment 20S: Roadway Flow Runoff Area=2,774 sf 40.41% Impervious Runoff Depth>4.40"
Flow Length=65' Tc=6.0 min CN=WQ Runoff=0.29 cfs 0.023 af

Subcatchment 21S: Roadway Flow Runoff Area=9,904 sf 37.65% Impervious Runoff Depth>4.37"
Flow Length=203' Tc=6.0 min CN=WQ Runoff=1.02 cfs 0.083 af

Subcatchment 22S: Overland Flow to Pond Runoff Area=17,710 sf 12.85% Impervious Runoff Depth>3.16"
Flow Length=47' Slope=0.2127 '/' Tc=6.0 min CN=WQ Runoff=1.32 cfs 0.107 af

Subcatchment 30S: Roadway Flow Runoff Area=14,714 sf 52.43% Impervious Runoff Depth>5.54"
Flow Length=276' Tc=6.0 min CN=WQ Runoff=1.96 cfs 0.156 af

Subcatchment 31S: Roadway Flow Runoff Area=17,194 sf 38.30% Impervious Runoff Depth>4.41"
Flow Length=230' Tc=6.0 min CN=WQ Runoff=1.79 cfs 0.145 af

Subcatchment 32S: Roadway Flow Runoff Area=21,651 sf 47.90% Impervious Runoff Depth>5.26"
Flow Length=223' Tc=6.0 min CN=WQ Runoff=2.74 cfs 0.218 af

Subcatchment 33S: Roadway Flow Runoff Area=10,356 sf 52.43% Impervious Runoff Depth>4.37"
Flow Length=257' Tc=6.0 min CN=WQ Runoff=1.02 cfs 0.087 af

Subcatchment 40S: Roadway Flow Runoff Area=11,686 sf 72.99% Impervious Runoff Depth>5.22"
Flow Length=263' Slope=0.0150 '/' Tc=6.0 min CN=WQ Runoff=1.38 cfs 0.117 af

Subcatchment 41S: Roadway Flow Runoff Area=16,070 sf 43.83% Impervious Runoff Depth>5.20"
Flow Length=268' Tc=6.5 min CN=WQ Runoff=2.00 cfs 0.160 af

Subcatchment 42S: Flow to CB#200 Runoff Area=29,920 sf 35.58% Impervious Runoff Depth>4.71"
Flow Length=385' Tc=6.0 min CN=WQ Runoff=3.42 cfs 0.270 af

Subcatchment 50S: Roadway Flow Runoff Area=12,898 sf 58.95% Impervious Runoff Depth>4.13"
Flow Length=300' Tc=6.0 min CN=WQ Runoff=1.16 cfs 0.102 af

Subcatchment 51S: Roadway Flow Runoff Area=12,915 sf 65.19% Impervious Runoff Depth>4.49"
Flow Length=163' Tc=6.0 min CN=WQ Runoff=1.28 cfs 0.111 af

Subcatchment 60S: Roadway and Building Runoff Area=23,012 sf 40.57% Impervious Runoff Depth>3.06"
Flow Length=220' Tc=6.0 min CN=WQ Runoff=1.46 cfs 0.135 af

Subcatchment 61S: Roadway Flow Runoff Area=7,564 sf 83.43% Impervious Runoff Depth>5.56"
Flow Length=152' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.95 cfs 0.080 af

Subcatchment 62S: Bioretention Pond Area Runoff Area=6,453 sf 0.00% Impervious Runoff Depth>0.69"
Tc=6.0 min CN=39 Runoff=0.05 cfs 0.008 af

Subcatchment 70S: Overland Flow to Runoff Area=128,858 sf 1.40% Impervious Runoff Depth>3.89"
Flow Length=745' Tc=14.6 min CN=WQ Runoff=10.11 cfs 0.959 af

Subcatchment 71S: Roadway Flow Runoff Area=26,495 sf 66.16% Impervious Runoff Depth>5.06"
Flow Length=300' Tc=6.0 min CN=WQ Runoff=3.06 cfs 0.257 af

Subcatchment 72S: House Flow to Pond Runoff Area=49,031 sf 39.15% Impervious Runoff Depth>3.42"
Flow Length=127' Tc=6.0 min CN=WQ Runoff=3.67 cfs 0.321 af

Subcatchment 73S: Roadway Flow Runoff Area=5,932 sf 76.82% Impervious Runoff Depth>5.17"
Flow Length=200' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=0.69 cfs 0.059 af

Subcatchment 74S: Area in Circle to Runoff Area=17,656 sf 37.64% Impervious Runoff Depth>3.38"
Flow Length=40' Slope=0.1000 '/' Tc=6.0 min CN=WQ Runoff=1.31 cfs 0.114 af

Subcatchment 75S: Roadway Flow Runoff Area=13,639 sf 67.50% Impervious Runoff Depth>5.24"
Flow Length=196' Slope=0.0200 '/' Tc=6.0 min CN=WQ Runoff=1.64 cfs 0.137 af

Subcatchment 76S: Roadway Flow Runoff Area=93,020 sf 28.84% Impervious Runoff Depth>4.55"
Flow Length=468' Tc=9.0 min CN=WQ Runoff=9.39 cfs 0.809 af

Subcatchment 100S: Unit 1 Runoff Area=920 sf 100.00% Impervious Runoff Depth>6.53"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.011 af

Subcatchment 101S: Units 2 & 3 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>6.53"
Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af

Subcatchment 102S: Units 4 & 5 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>6.53"
Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af

Subcatchment 103S: Units 6 & 7 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>6.53"
Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af

Subcatchment 104S: Units 8 & 9 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>6.53"
Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af

Subcatchment 105S: Units 11 & 10 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>6.53"
Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af

Subcatchment 106S: Units 13 & 12 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>6.53"
Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af

Subcatchment 107S: Units 15 & 14 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>6.53"
Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af

Subcatchment 108S: Units 17 & 16 Runoff Area=1,840 sf 100.00% Impervious Runoff Depth>6.53"
Tc=6.0 min CN=98 Runoff=0.27 cfs 0.023 af

Subcatchment 109S: Unit 18 Runoff Area=920 sf 100.00% Impervious Runoff Depth>6.53"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.011 af

Reach 1R: Tammy Court Inflow=6.08 cfs 0.468 af
Outflow=6.08 cfs 0.468 af

Reach 2R: Ex CB1 Inflow=7.88 cfs 1.506 af
Outflow=7.88 cfs 1.506 af

Reach 3R: Ex CB 2 Inflow=2.04 cfs 0.170 af
Outflow=2.04 cfs 0.170 af

Reach 4R: Upper Shadowbrook Drive Drainage Inflow=7.23 cfs 1.005 af
Outflow=7.23 cfs 1.005 af

Reach 5R: Canterberry Ct Drainage Inflow=1.04 cfs 0.113 af
Outflow=1.04 cfs 0.113 af

Reach 6R: Lower Shadowbrook Dr CB Inflow=1.73 cfs 0.195 af
Outflow=1.73 cfs 0.195 af

Pond 1P: Bioretention Pond #1 Peak Elev=293.52' Storage=10,103 cf Inflow=10.76 cfs 0.913 af
Primary=6.39 cfs 0.897 af Secondary=0.00 cfs 0.000 af Outflow=6.39 cfs 0.897 af

Pond 2P: Pocket Pond #1 Peak Elev=313.16' Storage=25,017 cf Inflow=16.84 cfs 1.368 af
Outflow=6.98 cfs 1.331 af

Pond 3P: Pocket Pond #2 Peak Elev=275.70' Storage=22,963 cf Inflow=22.96 cfs 2.220 af
Primary=12.40 cfs 2.114 af Secondary=5.04 cfs 0.084 af Outflow=17.44 cfs 2.197 af

Pond 30P: Infiltration Pond #1 Peak Elev=281.24' Storage=2,550 cf Inflow=1.31 cfs 0.114 af
Outflow=0.07 cfs 0.080 af

Pond 31P: Infiltration Pond #2 Peak Elev=275.74' Storage=6,686 cf Inflow=3.67 cfs 0.321 af
Discarded=0.11 cfs 0.144 af Primary=0.19 cfs 0.098 af Outflow=0.29 cfs 0.242 af

Pond 100: AD#100 Peak Elev=296.01' Inflow=0.14 cfs 0.011 af
8.0" Round Culvert n=0.013 L=58.1' S=0.0251 '/' Outflow=0.14 cfs 0.011 af

Pond 101: AD#101 Peak Elev=295.32' Inflow=0.41 cfs 0.034 af
8.0" Round Culvert n=0.013 L=37.0' S=0.0500 '/' Outflow=0.41 cfs 0.034 af

Pond 102: AD#102 Peak Elev=295.34' Inflow=0.55 cfs 0.046 af
8.0" Round Culvert n=0.013 L=27.4' S=0.0201 '/' Outflow=0.55 cfs 0.046 af

Pond 103: AD#103 Peak Elev=295.34' Inflow=0.27 cfs 0.023 af
8.0" Round Culvert n=0.013 L=59.0' S=0.0200 '/' Outflow=0.27 cfs 0.023 af

Pond 104: AD#104 Peak Elev=296.40' Inflow=1.51 cfs 0.126 af
8.0" Round Culvert n=0.013 L=16.6' S=0.0367 '/' Outflow=1.51 cfs 0.126 af

Pond 105: AD#105 Peak Elev=298.40' Inflow=1.23 cfs 0.103 af
8.0" Round Culvert n=0.013 L=53.8' S=0.0400 '/' Outflow=1.23 cfs 0.103 af

Pond 106: AD#106 Peak Elev=300.52' Inflow=0.96 cfs 0.080 af
8.0" Round Culvert n=0.013 L=55.9' S=0.0401 '/' Outflow=0.96 cfs 0.080 af

Pond 107: AD#107 Peak Elev=303.40' Inflow=0.68 cfs 0.057 af
8.0" Round Culvert n=0.013 L=64.0' S=0.0450 '/' Outflow=0.68 cfs 0.057 af

Pond 108: AD#108 Peak Elev=306.22' Inflow=0.41 cfs 0.034 af
8.0" Round Culvert n=0.013 L=64.5' S=0.0448 '/' Outflow=0.41 cfs 0.034 af

Pond 109: AD#109 Peak Elev=308.89' Inflow=0.14 cfs 0.011 af
8.0" Round Culvert n=0.013 L=49.9' S=0.0549 '/' Outflow=0.14 cfs 0.011 af

Pond CB11: CB#11 Peak Elev=313.29' Inflow=7.51 cfs 0.605 af
18.0" Round Culvert n=0.013 L=30.3' S=0.0050 '/' Outflow=7.51 cfs 0.605 af

Pond CB110: CB#110 Peak Elev=313.30' Inflow=1.96 cfs 0.156 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=1.96 cfs 0.156 af

Pond CB12: CB#12 Peak Elev=314.03' Inflow=3.76 cfs 0.304 af
15.0" Round Culvert n=0.013 L=106.0' S=0.0263 '/' Outflow=3.76 cfs 0.304 af

Pond CB120: CB#120 Peak Elev=314.34' Inflow=2.74 cfs 0.218 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=2.74 cfs 0.218 af

Pond CB14: CB#14 Peak Elev=310.88' Inflow=7.41 cfs 1.414 af
15.0" Round Culvert n=0.013 L=37.9' S=0.0150 '/' Outflow=7.41 cfs 1.414 af

Pond CB15: CB#15 Peak Elev=309.37' Inflow=7.53 cfs 1.437 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0539 '/' Outflow=7.53 cfs 1.437 af

Pond CB170: CB#170 Peak Elev=278.93' Inflow=3.74 cfs 0.315 af
15.0" Round Culvert n=0.013 L=36.7' S=0.0199 '/' Outflow=3.74 cfs 0.315 af

Pond CB171: CB#171 Peak Elev=279.28' Inflow=3.06 cfs 0.257 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=3.06 cfs 0.257 af

Pond CB19: CB #19 Peak Elev=279.94' Inflow=10.98 cfs 0.946 af
18.0" Round Culvert n=0.013 L=33.8' S=0.0151 '/' Outflow=10.98 cfs 0.946 af

Pond CB20: CB #20 Peak Elev=280.81' Inflow=9.39 cfs 0.809 af
18.0" Round Culvert n=0.013 L=22.0' S=0.0200 '/' Outflow=9.39 cfs 0.809 af

Pond CB200: CB#200 Peak Elev=293.63' Inflow=3.42 cfs 0.270 af
15.0" Round Culvert n=0.013 L=85.3' S=0.0050 '/' Outflow=3.42 cfs 0.270 af

Pond CB3: CB#3 Peak Elev=295.25' Inflow=7.31 cfs 0.635 af
15.0" Round Culvert n=0.013 L=80.0' S=0.0100 '/' Outflow=7.31 cfs 0.635 af

Pond CB30: CB#30 Peak Elev=295.30' Inflow=1.90 cfs 0.161 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0050 '/' Outflow=1.90 cfs 0.161 af

Pond CB4: CB#4 Peak Elev=295.61' Inflow=3.94 cfs 0.339 af
15.0" Round Culvert n=0.013 L=80.9' S=0.0205 '/' Outflow=3.94 cfs 0.339 af

Pond CB5: CB#5 Peak Elev=295.70' Inflow=2.67 cfs 0.228 af
15.0" Round Culvert n=0.013 L=22.0' S=0.0100 '/' Outflow=2.67 cfs 0.228 af

Pond CB80: CB#80 Peak Elev=313.55' Inflow=3.37 cfs 0.276 af
15.0" Round Culvert n=0.013 L=15.1' S=0.0053 '/' Outflow=3.37 cfs 0.276 af

Pond CB800: CB#800 Peak Elev=313.57' Inflow=1.38 cfs 0.117 af
15.0" Round Culvert n=0.013 L=22.7' S=0.0048 '/' Outflow=1.38 cfs 0.117 af

Pond CB9: CB#9 Peak Elev=315.27' Inflow=4.63 cfs 0.379 af
15.0" Round Culvert n=0.013 L=203.6' S=0.0174 '/' Outflow=4.63 cfs 0.379 af

Pond CB90: CB#90 Peak Elev=315.48' Inflow=1.49 cfs 0.128 af
15.0" Round Culvert n=0.013 L=29.8' S=0.0201 '/' Outflow=1.49 cfs 0.128 af

Pond DMH111: DMH#111 Peak Elev=313.19' Inflow=7.51 cfs 0.605 af
24.0" Round Culvert n=0.013 L=40.3' S=0.0050 '/' Outflow=7.51 cfs 0.605 af

Pond DMH17: DMH#17 Peak Elev=276.89' Inflow=14.58 cfs 1.261 af
24.0" Round Culvert n=0.013 L=279.8' S=0.0100 '/' Outflow=14.58 cfs 1.261 af

Pond DMH18: DMH#18 Peak Elev=278.49' Inflow=10.98 cfs 0.946 af
18.0" Round Culvert n=0.013 L=71.6' S=0.0149 '/' Outflow=10.98 cfs 0.946 af

Pond DMH2: DMH#2 Peak Elev=293.75' Inflow=7.31 cfs 0.635 af
18.0" Round Culvert n=0.013 L=50.2' S=0.0030 '/' Outflow=7.31 cfs 0.635 af

Pond DMH8: DMH#8 Peak Elev=313.37' Inflow=8.01 cfs 0.655 af
18.0" Round Culvert n=0.013 L=13.4' S=0.0052 '/' Outflow=8.01 cfs 0.655 af

Link A: Western Shadowbrook Drive Treatment Area Inflow=14.58 cfs 1.669 af
Primary=14.58 cfs 1.669 af

Link B: pond at beginning of neighborhood Inflow=10.33 cfs 1.788 af
Primary=10.33 cfs 1.788 af

Link C: Wetlands Inflow=22.54 cfs 2.862 af
Primary=22.54 cfs 2.862 af

Total Runoff Area = 20.68 ac Runoff Volume = 6.733 af Average Runoff Depth = 3.91"
71.10% Pervious = 14.70 ac 28.90% Impervious = 5.98 ac

Summary for Subcatchment 1S: Flow to Tammy Court

Runoff = 6.08 cfs @ 12.09 hrs, Volume= 0.468 af, Depth> 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
3,365	98	Roofs, HSG D
6,582	98	Roofs, HSG A
34,775	80	>75% Grass cover, Good, HSG D
8,430	39	>75% Grass cover, Good, HSG A
4,407	77	Woods, Good, HSG D
57,559		Weighted Average
47,612		82.72% Pervious Area
9,947		17.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	50	0.6600	0.57		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	213	0.6600	5.69		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	263	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 2S: Shadowbrook Dr CB1

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.069 af, Depth> 4.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
4,085	98	Paved parking, HSG A
240	98	Roofs, HSG D
1,432	80	>75% Grass cover, Good, HSG D
1,789	39	>75% Grass cover, Good, HSG A
7,546		Weighted Average
3,221		42.68% Pervious Area
4,325		57.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.5	250	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 3S: Shadowbrook Dr CB2

Runoff = 2.04 cfs @ 12.12 hrs, Volume= 0.170 af, Depth> 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
257	98	Roofs, HSG A
6,196	80	>75% Grass cover, Good, HSG D
5,530	39	>75% Grass cover, Good, HSG A
10,329	77	Woods, Good, HSG D
405	30	Woods, Good, HSG A
1,946	98	Paved parking, HSG A
24,663		Weighted Average
22,460		91.07% Pervious Area
2,203		8.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1200	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
1.9	226	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	48	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	20	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.6	344	Total			

Summary for Subcatchment 4S: Flow to Shadowbrook Dr CBs

Runoff = 1.39 cfs @ 12.09 hrs, Volume= 0.109 af, Depth> 5.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
2,537	80	>75% Grass cover, Good, HSG D
400	39	>75% Grass cover, Good, HSG A
0	74	>75% Grass cover, Good, HSG C
4,345	98	Paved parking, HSG A
4,030	77	Woods, Good, HSG D
11,312		Weighted Average
6,967		61.59% Pervious Area
4,345		38.41% Impervious Area

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

Summary for Subcatchment 5S: Canterberry Court Flow

Runoff = 1.04 cfs @ 12.10 hrs, Volume= 0.113 af, Depth> 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,564	98	Roofs, HSG A
30,607	39	>75% Grass cover, Good, HSG A
4,241	98	Paved parking, HSG A
36,412		Weighted Average
30,607		84.06% Pervious Area
5,805		15.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.7	137	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	187	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 6S: Lower Shadowbrook Dr Flow

Runoff = 1.73 cfs @ 12.11 hrs, Volume= 0.195 af, Depth> 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,440	98	Roofs, HSG A
3,236	30	Woods, Good, HSG A
60,250	39	>75% Grass cover, Good, HSG A
7,789	98	Paved parking, HSG A
72,715		Weighted Average
63,486		87.31% Pervious Area
9,229		12.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	38	0.4500	4.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	49	0.3600	3.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.0	137	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 7S: Rear Overland Flow to Wetland

Runoff = 6.39 cfs @ 12.16 hrs, Volume= 0.568 af, Depth> 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
2,935	98	Roofs, HSG D
2,417	98	Roofs, HSG A
118	98	Roofs, HSG C
10,710	80	>75% Grass cover, Good, HSG D
8,039	39	>75% Grass cover, Good, HSG A
4,292	74	>75% Grass cover, Good, HSG C
19,271	77	Woods, Good, HSG D
26,053	70	Woods, Good, HSG C
11,193	55	Woods, Good, HSG B
85,028		Weighted Average
79,558		93.57% Pervious Area
5,470		6.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0400	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
1.7	133	0.0650	1.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.5	183	Total			

Summary for Subcatchment 10S: Roadway Flow

Runoff = 1.49 cfs @ 12.09 hrs, Volume= 0.128 af, Depth> 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
3,052	98	Roofs, HSG A
12	80	>75% Grass cover, Good, HSG D
3,807	39	>75% Grass cover, Good, HSG A
506	98	Paved parking, HSG D
6,315	98	Roofs, HSG A
13,692		Weighted Average
3,819		27.89% Pervious Area
9,873		72.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0150	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.7	257	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.5	307	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 11S: Roadway Flow

Runoff = 3.14 cfs @ 12.09 hrs, Volume= 0.251 af, Depth> 5.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
6,240	98	Roofs, HSG D
11,906	80	>75% Grass cover, Good, HSG D
2,142	39	>75% Grass cover, Good, HSG A
1,643	98	Roofs, HSG D
3,791	98	Roofs, HSG A
25,722		Weighted Average
14,048		54.61% Pervious Area
11,674		45.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	24	0.3300	0.37		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.3	26	0.0600	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.8	46	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	183	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.4	279	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 20S: Roadway Flow

Runoff = 0.29 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 4.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
396	98	Roofs, HSG D
993	80	>75% Grass cover, Good, HSG D
660	39	>75% Grass cover, Good, HSG A
725	98	Paved parking, HSG A
2,774		Weighted Average
1,653		59.59% Pervious Area
1,121		40.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	50	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.2	65	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 21S: Roadway Flow

Runoff = 1.02 cfs @ 12.09 hrs, Volume= 0.083 af, Depth> 4.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,651	98	Roofs, HSG D
365	98	Roofs, HSG A
3,879	80	>75% Grass cover, Good, HSG D
2,296	39	>75% Grass cover, Good, HSG A
4	98	Paved parking, HSG D
1,709	98	Paved parking, HSG A
9,904		Weighted Average
6,175		62.35% Pervious Area
3,729		37.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	50	0.1200	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.9	98	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	55	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.1	203	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 22S: Overland Flow to Pond

Runoff = 1.32 cfs @ 12.09 hrs, Volume= 0.107 af, Depth> 3.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,512	98	Roofs, HSG D
645	98	Roofs, HSG A
8,034	80	>75% Grass cover, Good, HSG D
7,400	39	>75% Grass cover, Good, HSG A
119	98	Paved parking, HSG A
17,710		Weighted Average
15,434		87.15% Pervious Area
2,276		12.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	47	0.2127	0.36		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.2	47	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 30S: Roadway Flow

Runoff = 1.96 cfs @ 12.09 hrs, Volume= 0.156 af, Depth> 5.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
4,540	98	Paved parking, HSG D
6,935	80	>75% Grass cover, Good, HSG D
65	39	>75% Grass cover, Good, HSG A
1,636	98	Paved parking, HSG D
1,538	98	Paved parking, HSG A
14,714		Weighted Average
7,000		47.57% Pervious Area
7,714		52.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
1.1	64	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	162	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.6	276	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 31S: Roadway Flow

Runoff = 1.79 cfs @ 12.09 hrs, Volume= 0.145 af, Depth> 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
2,626	98	Paved parking, HSG D
1,214	98	Paved parking, HSG A
6,749	80	>75% Grass cover, Good, HSG D
3,860	39	>75% Grass cover, Good, HSG A
2,745	98	Paved parking, HSG A
17,194		Weighted Average
10,609		61.70% Pervious Area
6,585		38.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	50	0.2800	0.40		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	60	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	120	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	230	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 32S: Roadway Flow

Runoff = 2.74 cfs @ 12.09 hrs, Volume= 0.218 af, Depth> 5.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
5,015	98	Roofs, HSG D
8,256	80	>75% Grass cover, Good, HSG D
991	39	>75% Grass cover, Good, HSG A
1,964	98	Paved parking, HSG D
3,391	98	Paved parking, HSG A
2,034	77	Woods, Good, HSG D
21,651		Weighted Average
11,281		52.10% Pervious Area
10,370		47.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2500	0.17		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.7	10	0.2000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.3	63	0.3300	4.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	110	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.6	223	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 33S: Roadway Flow

Runoff = 1.02 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 4.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
948	98	Roofs, HSG D
395	98	Roofs, HSG A
1,701	80	>75% Grass cover, Good, HSG D
3,225	39	>75% Grass cover, Good, HSG A
4,087	98	Paved parking, HSG A
10,356		Weighted Average
4,926		47.57% Pervious Area
5,430		52.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.2	37	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.8	257	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 40S: Roadway Flow

Runoff = 1.38 cfs @ 12.09 hrs, Volume= 0.117 af, Depth> 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
752	98	Roofs, HSG D
1,321	98	Roofs, HSG A
391	98	Roofs, HSG C
780	80	>75% Grass cover, Good, HSG D
2,326	39	>75% Grass cover, Good, HSG A
50	74	>75% Grass cover, Good, HSG C
1,115	98	Paved parking, HSG D
4,921	98	Paved parking, HSG A
30	98	Paved parking, HSG C
11,686		Weighted Average
3,156		27.01% Pervious Area
8,530		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	50	0.0150	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.4	213	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	263	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 41S: Roadway Flow

Runoff = 2.00 cfs @ 12.09 hrs, Volume= 0.160 af, Depth> 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
2,949	98	Roofs, HSG D
157	98	Roofs, HSG A
8,262	80	>75% Grass cover, Good, HSG D
765	39	>75% Grass cover, Good, HSG A
1,393	98	Paved parking, HSG D
2,544	98	Paved parking, HSG A
16,070		Weighted Average
9,027		56.17% Pervious Area
7,043		43.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	40	0.0250	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.5	10	0.3300	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	80	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	138	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.5	268	Total			

Summary for Subcatchment 42S: Flow to CB#200

Runoff = 3.42 cfs @ 12.09 hrs, Volume= 0.270 af, Depth> 4.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
3,134	39	>75% Grass cover, Good, HSG A
10,383	80	>75% Grass cover, Good, HSG D
3,530	74	>75% Grass cover, Good, HSG C
5,484	98	Paved parking, HSG A
2,228	77	Woods, Good, HSG D
170	98	Roofs, HSG A
90	98	Roofs, HSG C
2,670	98	Roofs, HSG D
1,237	98	Roofs, HSG A
994	98	Roofs, HSG C
29,920		Weighted Average
19,275		64.42% Pervious Area
10,645		35.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
1.2	335	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.9	385	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 50S: Roadway Flow

Runoff = 1.16 cfs @ 12.09 hrs, Volume= 0.102 af, Depth> 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
5,295	39	>75% Grass cover, Good, HSG A
7,603	98	Paved parking, HSG A
12,898		Weighted Average
5,295		41.05% Pervious Area
7,603		58.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0550	1.71		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.9	250	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 51S: Roadway Flow

Runoff = 1.28 cfs @ 12.09 hrs, Volume= 0.111 af, Depth> 4.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
3,027	98	Roofs, HSG A
4,496	39	>75% Grass cover, Good, HSG A
5,392	98	Paved parking, HSG A
12,915		Weighted Average
4,496		34.81% Pervious Area
8,419		65.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
0.6	76	0.0900	2.10		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.1	163	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 60S: Roadway and Building Flow

Runoff = 1.46 cfs @ 12.09 hrs, Volume= 0.135 af, Depth> 3.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
3,213	98	Roofs, HSG A
13,675	39	>75% Grass cover, Good, HSG A
6,124	98	Paved parking, HSG A
23,012		Weighted Average
13,675		59.43% Pervious Area
9,337		40.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	50	0.1600	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.6	155	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.3	220	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 61S: Roadway Flow

Runoff = 0.95 cfs @ 12.09 hrs, Volume= 0.080 af, Depth> 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,253	39	>75% Grass cover, Good, HSG A
6,311	98	Paved parking, HSG A
7,564		Weighted Average
1,253		16.57% Pervious Area
6,311		83.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.6	102	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	152	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 62S: Bioretention Pond Area

Runoff = 0.05 cfs @ 12.15 hrs, Volume= 0.008 af, Depth> 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
6,453	39	>75% Grass cover, Good, HSG A
6,453		100.00% Pervious Area

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

Summary for Subcatchment 70S: Overland Flow to Detention Pond

Runoff = 10.11 cfs @ 12.20 hrs, Volume= 0.959 af, Depth> 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
607	98	Roofs, HSG D
1,192	98	Roofs, HSG A
24,819	80	>75% Grass cover, Good, HSG D
13,185	39	>75% Grass cover, Good, HSG A
89,055	77	Woods, Good, HSG D
128,858		Weighted Average
127,059		98.60% Pervious Area
1,799		1.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	50	0.0800	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.6	391	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	304	0.0430	1.45		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.6	745	Total			

Summary for Subcatchment 71S: Roadway Flow

Runoff = 3.06 cfs @ 12.09 hrs, Volume= 0.257 af, Depth> 5.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
2,572	98	Roofs, HSG D
3,565	98	Roofs, HSG A
3,581	80	>75% Grass cover, Good, HSG D
5,385	39	>75% Grass cover, Good, HSG A
1,533	98	Paved parking, HSG D
9,859	98	Paved parking, HSG A
26,495		Weighted Average
8,966		33.84% Pervious Area
17,529		66.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	50	0.0800	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
1.5	250	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.9	300	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 72S: House Flow to Pond

Runoff = 3.67 cfs @ 12.09 hrs, Volume= 0.321 af, Depth> 3.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
2,848	98	Roofs, HSG D
9,725	98	Roofs, HSG A
23,884	39	>75% Grass cover, Good, HSG A
4,734	80	>75% Grass cover, Good, HSG D
1,216	74	>75% Grass cover, Good, HSG C
1,330	98	Paved parking, HSG D
5,294	98	Paved parking, HSG A
49,031		Weighted Average
29,834		60.85% Pervious Area
19,197		39.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.3	77	0.3100	3.90		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	127	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 73S: Roadway Flow

Runoff = 0.69 cfs @ 12.09 hrs, Volume= 0.059 af, Depth> 5.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,375	39	>75% Grass cover, Good, HSG A
4,557	98	Paved parking, HSG A
5,932		Weighted Average
1,375		23.18% Pervious Area
4,557		76.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.9	150	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	200	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 74S: Area in Circle to Infiltration Pond

Runoff = 1.31 cfs @ 12.09 hrs, Volume= 0.114 af, Depth> 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
4,851	98	Roofs, HSG A
8,558	39	>75% Grass cover, Good, HSG A
1,547	98	Roofs, HSG D
248	98	Roofs, HSG C
1,588	80	>75% Grass cover, Good, HSG D
864	74	>75% Grass cover, Good, HSG C
17,656		Weighted Average
11,010		62.36% Pervious Area
6,646		37.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	40	0.1000	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
2.6	40	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 75S: Roadway Flow

Runoff = 1.64 cfs @ 12.09 hrs, Volume= 0.137 af, Depth> 5.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
295	98	Roofs, HSG D
1,380	98	Roofs, HSG A
2,209	80	>75% Grass cover, Good, HSG D
2,224	39	>75% Grass cover, Good, HSG A
4,186	98	Paved parking, HSG D
3,345	98	Paved parking, HSG A
13,639		Weighted Average
4,433		32.50% Pervious Area
9,206		67.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.14		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.89"
0.8	146	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	196	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 76S: Roadway Flow

Runoff = 9.39 cfs @ 12.13 hrs, Volume= 0.809 af, Depth> 4.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
14,560	98	Roofs, HSG D
1,133	98	Roofs, HSG A
24,384	80	>75% Grass cover, Good, HSG D
10,102	39	>75% Grass cover, Good, HSG A
31,709	77	Woods, Good, HSG D
7,686	98	Paved parking, HSG D
3,446	98	Paved parking, HSG A
93,020		Weighted Average
66,195		71.16% Pervious Area
26,825		28.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1200	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
0.9	130	0.2150	2.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.0	120	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	168	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.0	468	Total			

Summary for Subcatchment 100S: Unit 1

Runoff = 0.14 cfs @ 12.09 hrs, Volume= 0.011 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
920	98	Roofs, HSG A
920		100.00% Impervious Area

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

Summary for Subcatchment 101S: Units 2 & 3

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 102S: Units 4 & 5

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 103S: Units 6 & 7

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 104S: Units 8 & 9

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 105S: Units 11 & 10

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 106S: Units 13 & 12

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 107S: Units 15 & 14

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 108S: Units 17 & 16

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.023 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
1,840	98	Roofs, HSG A
1,840		100.00% Impervious Area

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

Summary for Subcatchment 109S: Unit 18

Runoff = 0.14 cfs @ 12.09 hrs, Volume= 0.011 af, Depth> 6.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-yr Rainfall=6.77"

Area (sf)	CN	Description
920	98	Roofs, HSG A
920		100.00% Impervious Area

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

Summary for Reach 1R: Tammy Court

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

Inflow Area = 1.32 ac, 17.28% Impervious, Inflow Depth > 4.25" for 50-yr event
Inflow = 6.08 cfs @ 12.09 hrs, Volume= 0.468 af
Outflow = 6.08 cfs @ 12.09 hrs, Volume= 0.468 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 2R: Ex CB1

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

Inflow Area = 3.88 ac, 46.55% Impervious, Inflow Depth > 4.66" for 50-yr event
Inflow = 7.88 cfs @ 12.30 hrs, Volume= 1.506 af
Outflow = 7.88 cfs @ 12.30 hrs, Volume= 1.506 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 3R: Ex CB 2

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

Inflow Area = 0.57 ac, 8.93% Impervious, Inflow Depth > 3.60" for 50-yr event
Inflow = 2.04 cfs @ 12.12 hrs, Volume= 0.170 af
Outflow = 2.04 cfs @ 12.12 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 4R: Upper Shadowbrook Drive Drainage

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

Inflow Area = 2.77 ac, 52.41% Impervious, Inflow Depth > 4.36" for 50-yr event
Inflow = 7.23 cfs @ 12.18 hrs, Volume= 1.005 af
Outflow = 7.23 cfs @ 12.18 hrs, Volume= 1.005 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 5R: Canterberry Ct Drainage

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

Inflow Area = 0.84 ac, 15.94% Impervious, Inflow Depth > 1.62" for 50-yr event
Inflow = 1.04 cfs @ 12.10 hrs, Volume= 0.113 af
Outflow = 1.04 cfs @ 12.10 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach 6R: Lower Shadowbrook Dr CB

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

Inflow Area = 1.67 ac, 12.69% Impervious, Inflow Depth > 1.40" for 50-yr event
Inflow = 1.73 cfs @ 12.11 hrs, Volume= 0.195 af
Outflow = 1.73 cfs @ 12.11 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: Bioretention Pond #1

Inflow Area = 2.51 ac, 53.85% Impervious, Inflow Depth > 4.36" for 50-yr event
Inflow = 10.76 cfs @ 12.09 hrs, Volume= 0.913 af
Outflow = 6.39 cfs @ 12.21 hrs, Volume= 0.897 af, Atten= 41%, Lag= 7.0 min
Primary = 6.39 cfs @ 12.21 hrs, Volume= 0.897 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.52' @ 12.21 hrs Surf.Area= 4,053 sf Storage= 10,103 cf

Plug-Flow detention time= 73.8 min calculated for 0.895 af (98% of inflow)
Center-of-Mass det. time= 62.7 min (825.2 - 762.6)

Volume	Invert	Avail.Storage	Storage Description
#1	288.00'	12,114 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
288.00	349	0	0
290.00	1,016	1,365	1,365
291.00	1,441	1,229	2,594
292.00	2,931	2,186	4,780
294.00	4,403	7,334	12,114

Device	Routing	Invert	Outlet Devices
#1	Secondary	293.80'	**4.0' 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	Device 5	288.00'	**10.000 in/hr Exfiltration over Surface area**
#3	Device 5	292.10'	**15.0" Vert. Orifice/Grate** C= 0.600
#4	Device 5	293.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	285.00'	**12.0" Round Culvert** L= 55.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 285.00' / 283.04' S= 0.0354 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=6.36 cfs @ 12.21 hrs HW=293.52' TW=0.00' (Dynamic Tailwater)
- **5=Culvert** (Passes 6.36 cfs of 10.71 cfs potential flow)
  - **2=Exfiltration** (Exfiltration Controls 0.94 cfs)
  - **3=Orifice/Grate** (Orifice Controls 5.27 cfs @ 4.29 fps)
  - **4=Orifice/Grate** (Weir Controls 0.15 cfs @ 0.47 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=288.00' TW=0.00' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: Pocket Pond #1

[80] Warning: Exceeded Pond DMH111 by 0.10' @ 11.90 hrs (4.75 cfs 0.303 af)
[80] Warning: Exceeded Pond DMH8 by 0.04' @ 11.75 hrs (1.79 cfs 0.107 af)

Inflow Area =	3.42 ac,	46.71% Impervious,	Inflow Depth >	4.80"	for 50-yr event
Inflow =	16.84 cfs @	12.09 hrs,	Volume=	1.368 af	
Outflow =	6.98 cfs @	12.31 hrs,	Volume=	1.331 af,	Atten= 59%, Lag= 13.2 min
Primary =	6.98 cfs @	12.31 hrs,	Volume=	1.331 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 309.79' Surf.Area= 3,009 sf Storage= 5,826 cf
Peak Elev= 313.16' @ 12.32 hrs Surf.Area= 8,355 sf Storage= 25,017 cf (19,191 cf above start)

Plug-Flow detention time= 181.0 min calculated for 1.197 af (88% of inflow)
Center-of-Mass det. time= 83.1 min (853.2 - 770.2)

Volume	Invert	Avail.Storage	Storage Description
#1	306.00'	27,930 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
306.00	306	196.0	0	0	306
308.00	1,616	240.0	1,750	1,750	1,894
310.00	3,201	285.0	4,728	6,478	3,846
312.00	6,785	438.0	9,764	16,242	12,678
313.50	8,844	470.0	11,688	27,930	15,088

Device	Routing	Invert	Outlet Devices
#1	Device 4	309.80'	**4.5" Vert. Orifice/Grate** C= 0.600
#2	Device 4	311.50'	**14.0" Vert. Orifice/Grate** C= 0.600
#3	Device 4	313.10'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	309.75'	**15.0" Round Culvert** L= 93.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.75' / 307.89' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.90 cfs @ 12.31 hrs HW=313.16' TW=310.84' (Dynamic Tailwater)
- **4=Culvert** (Passes 6.90 cfs of 7.83 cfs potential flow)
  - **1=Orifice/Grate** (Orifice Controls 0.81 cfs @ 7.34 fps)
  - **2=Orifice/Grate** (Orifice Controls 5.34 cfs @ 4.99 fps)
  - **3=Orifice/Grate** (Weir Controls 0.75 cfs @ 0.80 fps)

Summary for Pond 3P: Pocket Pond #2

Inflow Area = 6.15 ac, 22.36% Impervious, Inflow Depth > 4.33" for 50-yr event
Inflow = 22.96 cfs @ 12.14 hrs, Volume= 2.220 af
Outflow = 17.44 cfs @ 12.27 hrs, Volume= 2.197 af, Atten= 24%, Lag= 8.2 min
Primary = 12.40 cfs @ 12.27 hrs, Volume= 2.114 af
Secondary = 5.04 cfs @ 12.27 hrs, Volume= 0.084 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 271.98' Surf.Area= 2,847 sf Storage= 5,675 cf
Peak Elev= 275.70' @ 12.27 hrs Surf.Area= 6,569 sf Storage= 22,963 cf (17,288 cf above start)

Plug-Flow detention time= 83.0 min calculated for 2.063 af (93% of inflow)
Center-of-Mass det. time= 25.4 min (821.4 - 796.0)

Volume	Invert	Avail.Storage	Storage Description
#1	268.00'	25,013 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
268.00	408	0	0
269.00	790	599	599
270.00	1,250	1,020	1,619
272.00	2,863	4,113	5,732
274.00	4,762	7,625	13,357
276.00	6,894	11,656	25,013

Device	Routing	Invert	Outlet Devices
#1	Device 4	272.00'	**9.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	275.35'	**10.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#3	Device 4	273.80'	**24.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600
#4	Primary	272.00'	**18.0" Round Culvert** L= 105.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.57' S= 0.0041 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#5	Primary	275.70'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.37 cfs @ 12.27 hrs HW=275.68' TW=0.00' (Dynamic Tailwater)
- **4=Culvert** (Barrel Controls 12.37 cfs @ 7.00 fps)
  - **1=Orifice/Grate** (Passes < 3.87 cfs potential flow)
  - **3=Orifice/Grate** (Passes < 9.68 cfs potential flow)
- **5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=4.78 cfs @ 12.27 hrs HW=275.68' TW=0.00' (Dynamic Tailwater)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 4.78 cfs @ 1.43 fps)

Summary for Pond 30P: Infiltration Pond #1

Inflow Area = 0.41 ac, 37.64% Impervious, Inflow Depth > 3.38" for 50-yr event
Inflow = 1.31 cfs @ 12.09 hrs, Volume= 0.114 af
Outflow = 0.07 cfs @ 14.98 hrs, Volume= 0.080 af, Atten= 95%, Lag= 173.1 min
Discarded = 0.07 cfs @ 14.98 hrs, Volume= 0.080 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 281.24' @ 14.98 hrs Surf.Area= 2,908 sf Storage= 2,550 cf

Plug-Flow detention time= 273.5 min calculated for 0.080 af (70% of inflow)
Center-of-Mass det. time= 170.2 min (944.4 - 774.2)

Volume	Invert	Avail.Storage	Storage Description
#1	280.00'	5,166 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
280.00	1,214	0	0
282.00	3,952	5,166	5,166

Device	Routing	Invert	Outlet Devices
#1	Discarded	280.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 14.98 hrs HW=281.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Summary for Pond 31P: Infiltration Pond #2

[92] Warning: Device #4 is above defined storage

Inflow Area = 1.13 ac, 39.15% Impervious, Inflow Depth > 3.42" for 50-yr event
Inflow = 3.67 cfs @ 12.09 hrs, Volume= 0.321 af
Outflow = 0.29 cfs @ 13.51 hrs, Volume= 0.242 af, Atten= 92%, Lag= 85.4 min
Discarded = 0.11 cfs @ 13.51 hrs, Volume= 0.144 af
Primary = 0.19 cfs @ 13.51 hrs, Volume= 0.098 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 275.74' @ 13.51 hrs Surf.Area= 4,662 sf Storage= 6,686 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 137.9 min (910.3 - 772.3)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	7,938 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	3,030	0	0
276.00	4,908	7,938	7,938

Device	Routing	Invert	Outlet Devices
#1	Device 3	275.00'	**3.0" Vert. Orifice/Grate** C= 0.600
#2	Discarded	274.00'	**1.000 in/hr Exfiltration over Surface area**
#3	Primary	274.16'	**15.0" Round Culvert** L= 32.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 274.16' / 274.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Primary	276.40'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.11 cfs @ 13.51 hrs HW=275.74' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.19 cfs @ 13.51 hrs HW=275.74' TW=0.00' (Dynamic Tailwater)
├**3=Culvert** (Passes 0.19 cfs of 4.93 cfs potential flow)
│└**1=Orifice/Grate** (Orifice Controls 0.19 cfs @ 3.77 fps)
└**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 100: AD#100

Inflow Area = 0.02 ac,100.00% Impervious, Inflow Depth > 6.53" for 50-yr event
Inflow = 0.14 cfs @ 12.09 hrs, Volume= 0.011 af
Outflow = 0.14 cfs @ 12.09 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
Primary = 0.14 cfs @ 12.09 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 296.01' @ 12.09 hrs
Flood Elev= 297.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	295.81'	**8.0" Round Culvert** L= 58.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 295.81' / 294.35' S= 0.0251 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.13 cfs @ 12.09 hrs HW=296.01' TW=294.61' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.13 cfs @ 1.52 fps)

Summary for Pond 101: AD#101

Inflow Area = 0.06 ac,100.00% Impervious, Inflow Depth > 6.53" for 50-yr event
Inflow = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af
Outflow = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
Primary = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.32' @ 12.21 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.25'	**8.0" Round Culvert** L= 37.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.25' / 292.40' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.32 cfs @ 12.09 hrs HW=294.61' TW=294.28' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.32 cfs @ 2.35 fps)

Summary for Pond 102: AD#102

[80] Warning: Exceeded Pond 103 by 0.65' @ 12.20 hrs (1.04 cfs 0.005 af)

Inflow Area =	0.08 ac,100.00% Impervious,	Inflow Depth >	6.53"	for	50-yr event
Inflow =	0.55 cfs @	12.09 hrs,	Volume=	0.046 af	
Outflow =	0.55 cfs @	12.09 hrs,	Volume=	0.046 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.55 cfs @	12.09 hrs,	Volume=	0.046 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.34' @ 12.21 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.95'	**8.0" Round Culvert** L= 27.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.95' / 292.40' S= 0.0201 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=293.64' TW=294.28' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 103: AD#103

Inflow Area =	0.04 ac,100.00% Impervious,	Inflow Depth >	6.53"	for	50-yr event
Inflow =	0.27 cfs @	12.09 hrs,	Volume=	0.023 af	
Outflow =	0.27 cfs @	12.09 hrs,	Volume=	0.023 af,	Atten= 0%, Lag= 0.0 min
Primary =	0.27 cfs @	12.09 hrs,	Volume=	0.023 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.34' @ 12.26 hrs
Flood Elev= 297.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.23'	**8.0" Round Culvert** L= 59.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.23' / 293.05' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.27 cfs @ 12.09 hrs HW=294.52' TW=293.64' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.27 cfs @ 1.83 fps)

Summary for Pond 104: AD#104

Inflow Area =	0.23 ac,100.00% Impervious,	Inflow Depth >	6.53"	for	50-yr event
Inflow =	1.51 cfs @	12.09 hrs,	Volume=	0.126 af	
Outflow =	1.51 cfs @	12.09 hrs,	Volume=	0.126 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.51 cfs @	12.09 hrs,	Volume=	0.126 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 296.40' @ 12.09 hrs
Flood Elev= 299.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	295.27'	**8.0" Round Culvert** L= 16.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 295.27' / 294.66' S= 0.0367 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.47 cfs @ 12.09 hrs HW=296.36' TW=295.55' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.47 cfs @ 4.20 fps)

Summary for Pond 105: AD#105

Inflow Area = 0.19 ac,100.00% Impervious, Inflow Depth > 6.53" for 50-yr event
Inflow = 1.23 cfs @ 12.09 hrs, Volume= 0.103 af
Outflow = 1.23 cfs @ 12.09 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min
Primary = 1.23 cfs @ 12.09 hrs, Volume= 0.103 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 298.40' @ 12.09 hrs
Flood Elev= 301.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	297.53'	**8.0" Round Culvert** L= 53.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 297.53' / 295.38' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.20 cfs @ 12.09 hrs HW=298.37' TW=296.36' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.20 cfs @ 3.44 fps)

Summary for Pond 106: AD#106

Inflow Area = 0.15 ac,100.00% Impervious, Inflow Depth > 6.53" for 50-yr event
Inflow = 0.96 cfs @ 12.09 hrs, Volume= 0.080 af
Outflow = 0.96 cfs @ 12.09 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.09 hrs, Volume= 0.080 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 300.52' @ 12.09 hrs
Flood Elev= 303.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	299.87'	**8.0" Round Culvert** L= 55.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 299.87' / 297.63' S= 0.0401 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.93 cfs @ 12.09 hrs HW=300.51' TW=298.37' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.93 cfs @ 2.72 fps)

Summary for Pond 107: AD#107

Inflow Area = 0.11 ac,100.00% Impervious, Inflow Depth > 6.53" for 50-yr event
Inflow = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af
Outflow = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 303.40' @ 12.09 hrs
Flood Elev= 306.63'

Device	Routing	Invert	Outlet Devices
#1	Primary	302.85'	**8.0" Round Culvert** L= 64.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 302.85' / 299.97' S= 0.0450 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.67 cfs @ 12.09 hrs HW=303.39' TW=300.51' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.67 cfs @ 2.20 fps)

Summary for Pond 108: AD#108

Inflow Area = 0.06 ac,100.00% Impervious, Inflow Depth > 6.53" for 50-yr event
Inflow = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af
Outflow = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
Primary = 0.41 cfs @ 12.09 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 306.22' @ 12.09 hrs
Flood Elev= 309.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	305.85'	**8.0" Round Culvert** L= 64.5' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 305.85' / 302.96' S= 0.0448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.40 cfs @ 12.09 hrs HW=306.21' TW=303.39' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.40 cfs @ 2.05 fps)

Summary for Pond 109: AD#109

Inflow Area = 0.02 ac,100.00% Impervious, Inflow Depth > 6.53" for 50-yr event
Inflow = 0.14 cfs @ 12.09 hrs, Volume= 0.011 af
Outflow = 0.14 cfs @ 12.09 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
Primary = 0.14 cfs @ 12.09 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 308.89' @ 12.09 hrs
Flood Elev= 311.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	308.69'	**8.0" Round Culvert** L= 49.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 308.69' / 305.95' S= 0.0549 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.13 cfs @ 12.09 hrs HW=308.89' TW=306.21' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.13 cfs @ 1.52 fps)

Summary for Pond CB11: CB#11

[80] Warning: Exceeded Pond CB110 by 0.44' @ 12.05 hrs (3.92 cfs 0.136 af)

Inflow Area = 1.47 ac, 47.09% Impervious, Inflow Depth > 4.95" for 50-yr event
Inflow = 7.51 cfs @ 12.09 hrs, Volume= 0.605 af
Outflow = 7.51 cfs @ 12.09 hrs, Volume= 0.605 af, Atten= 0%, Lag= 0.0 min
Primary = 7.51 cfs @ 12.09 hrs, Volume= 0.605 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.29' @ 12.35 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.04'	**18.0" Round Culvert** L= 30.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.04' / 309.89' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.81 cfs @ 12.09 hrs HW=313.11' TW=312.64' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 5.81 cfs @ 3.29 fps)

Summary for Pond CB110: CB#110

Inflow Area = 0.34 ac, 52.43% Impervious, Inflow Depth > 5.54" for 50-yr event
Inflow = 1.96 cfs @ 12.09 hrs, Volume= 0.156 af
Outflow = 1.96 cfs @ 12.09 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min
Primary = 1.96 cfs @ 12.09 hrs, Volume= 0.156 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.30' @ 12.39 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.25'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.25' / 310.14' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=312.78' TW=313.10' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB12: CB#12

Inflow Area = 0.73 ac, 49.36% Impervious, Inflow Depth > 4.97" for 50-yr event
Inflow = 3.76 cfs @ 12.09 hrs, Volume= 0.304 af
Outflow = 3.76 cfs @ 12.09 hrs, Volume= 0.304 af, Atten= 0%, Lag= 0.0 min
Primary = 3.76 cfs @ 12.09 hrs, Volume= 0.304 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 314.03' @ 12.11 hrs
Flood Elev= 317.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	313.00'	**15.0" Round Culvert** L= 106.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 313.00' / 310.21' S= 0.0263 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.16 cfs @ 12.09 hrs HW=314.02' TW=313.10' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.16 cfs @ 4.03 fps)

Summary for Pond CB120: CB#120

Inflow Area = 0.50 ac, 47.90% Impervious, Inflow Depth > 5.26" for 50-yr event
Inflow = 2.74 cfs @ 12.09 hrs, Volume= 0.218 af
Outflow = 2.74 cfs @ 12.09 hrs, Volume= 0.218 af, Atten= 0%, Lag= 0.0 min
Primary = 2.74 cfs @ 12.09 hrs, Volume= 0.218 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 314.34' @ 12.11 hrs
Flood Elev= 317.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	313.32'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 313.32' / 313.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.34 cfs @ 12.09 hrs HW=314.31' TW=314.02' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 2.34 cfs @ 3.09 fps)

Summary for Pond CB14: CB#14

Inflow Area = 3.64 ac, 46.14% Impervious, Inflow Depth > 4.66" for 50-yr event
Inflow = 7.41 cfs @ 12.30 hrs, Volume= 1.414 af
Outflow = 7.41 cfs @ 12.30 hrs, Volume= 1.414 af, Atten= 0%, Lag= 0.0 min
Primary = 7.41 cfs @ 12.30 hrs, Volume= 1.414 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 310.88' @ 12.33 hrs
Flood Elev= 312.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	307.79'	**15.0" Round Culvert** L= 37.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 307.79' / 307.22' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.17 cfs @ 12.30 hrs HW=310.83' TW=309.36' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 7.17 cfs @ 5.84 fps)

Summary for Pond CB15: CB#15

Inflow Area = 3.71 ac, 46.04% Impervious, Inflow Depth > 4.65" for 50-yr event
Inflow = 7.53 cfs @ 12.30 hrs, Volume= 1.437 af
Outflow = 7.53 cfs @ 12.30 hrs, Volume= 1.437 af, Atten= 0%, Lag= 0.0 min
Primary = 7.53 cfs @ 12.30 hrs, Volume= 1.437 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 309.37' @ 12.30 hrs
Flood Elev= 312.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	307.12'	**15.0" Round Culvert** L= 120.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 307.12' / 300.65' S= 0.0539 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.52 cfs @ 12.30 hrs HW=309.37' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 7.52 cfs @ 6.13 fps)

Summary for Pond CB170: CB#170

Inflow Area = 0.74 ac, 68.11% Impervious, Inflow Depth > 5.08" for 50-yr event
Inflow = 3.74 cfs @ 12.09 hrs, Volume= 0.315 af
Outflow = 3.74 cfs @ 12.09 hrs, Volume= 0.315 af, Atten= 0%, Lag= 0.0 min
Primary = 3.74 cfs @ 12.09 hrs, Volume= 0.315 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 278.93' @ 12.09 hrs
Flood Elev= 281.97'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.90'	**15.0" Round Culvert** L= 36.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 277.90' / 277.17' S= 0.0199 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.65 cfs @ 12.09 hrs HW=278.91' TW=276.80' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.65 cfs @ 3.43 fps)

Summary for Pond CB171: CB#171

Inflow Area = 0.61 ac, 66.16% Impervious, Inflow Depth > 5.06" for 50-yr event
Inflow = 3.06 cfs @ 12.09 hrs, Volume= 0.257 af
Outflow = 3.06 cfs @ 12.09 hrs, Volume= 0.257 af, Atten= 0%, Lag= 0.0 min
Primary = 3.06 cfs @ 12.09 hrs, Volume= 0.257 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 279.28' @ 12.11 hrs
Flood Elev= 281.97'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.22'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 278.22' / 278.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.70 cfs @ 12.09 hrs HW=279.25' TW=278.91' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.70 cfs @ 3.37 fps)

Summary for Pond CB19: CB #19

Inflow Area = 2.45 ac, 33.78% Impervious, Inflow Depth > 4.63" for 50-yr event
Inflow = 10.98 cfs @ 12.12 hrs, Volume= 0.946 af
Outflow = 10.98 cfs @ 12.12 hrs, Volume= 0.946 af, Atten= 0%, Lag= 0.0 min
Primary = 10.98 cfs @ 12.12 hrs, Volume= 0.946 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 279.94' @ 12.15 hrs
Flood Elev= 281.21'

Device	Routing	Invert	Outlet Devices
#1	Primary	276.67'	**18.0" Round Culvert** L= 33.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.67' / 276.16' S= 0.0151 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=9.41 cfs @ 12.12 hrs HW=279.64' TW=278.42' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 9.41 cfs @ 5.33 fps)

Summary for Pond CB20: CB #20

Inflow Area = 2.14 ac, 28.84% Impervious, Inflow Depth > 4.55" for 50-yr event
Inflow = 9.39 cfs @ 12.13 hrs, Volume= 0.809 af
Outflow = 9.39 cfs @ 12.13 hrs, Volume= 0.809 af, Atten= 0%, Lag= 0.0 min
Primary = 9.39 cfs @ 12.13 hrs, Volume= 0.809 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 280.81' @ 12.18 hrs
Flood Elev= 281.21'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.21'	**18.0" Round Culvert** L= 22.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 277.21' / 276.77' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.58 cfs @ 12.13 hrs HW=280.14' TW=279.71' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 5.58 cfs @ 3.16 fps)

Summary for Pond CB200: CB#200

Inflow Area = 0.69 ac, 35.58% Impervious, Inflow Depth > 4.71" for 50-yr event
Inflow = 3.42 cfs @ 12.09 hrs, Volume= 0.270 af
Outflow = 3.42 cfs @ 12.09 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min
Primary = 3.42 cfs @ 12.09 hrs, Volume= 0.270 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.63' @ 12.23 hrs
Flood Elev= 300.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.88'	**15.0" Round Culvert** L= 85.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 291.88' / 291.45' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.99 cfs @ 12.09 hrs HW=293.37' TW=293.23' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.99 cfs @ 1.72 fps)

Summary for Pond CB3: CB#3

[80] Warning: Exceeded Pond CB30 by 0.88' @ 12.05 hrs (5.56 cfs 0.060 af)

Inflow Area = 1.67 ac, 66.11% Impervious, Inflow Depth > 4.55" for 50-yr event
Inflow = 7.31 cfs @ 12.09 hrs, Volume= 0.635 af
Outflow = 7.31 cfs @ 12.09 hrs, Volume= 0.635 af, Atten= 0%, Lag= 0.0 min
Primary = 7.31 cfs @ 12.09 hrs, Volume= 0.635 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.25' @ 12.11 hrs
Flood Elev= 296.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.09'	**15.0" Round Culvert** L= 80.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.09' / 291.29' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.30 cfs @ 12.09 hrs HW=295.04' TW=293.67' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 6.30 cfs @ 5.13 fps)

Summary for Pond CB30: CB#30

[80] Warning: Exceeded Pond 101 by 0.57' @ 12.15 hrs (1.13 cfs 0.005 af)
[80] Warning: Exceeded Pond 102 by 0.86' @ 12.10 hrs (1.51 cfs 0.013 af)

Inflow Area =	0.32 ac, 91.05% Impervious, Inflow Depth > 6.00" for 50-yr event				
Inflow =	1.90 cfs @	12.09 hrs,	Volume=	0.161 af	
Outflow =	1.90 cfs @	12.09 hrs,	Volume=	0.161 af,	Atten= 0%, Lag= 0.0 min
Primary =	1.90 cfs @	12.09 hrs,	Volume=	0.161 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.30' @ 12.16 hrs
Flood Elev= 296.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.30'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 292.30' / 292.19' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=294.29' TW=295.02' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB4: CB#4

[80] Warning: Exceeded Pond CB5 by 0.02' @ 12.15 hrs (0.71 cfs 0.003 af)

Inflow Area =	0.82 ac, 72.75% Impervious, Inflow Depth > 4.94" for 50-yr event				
Inflow =	3.94 cfs @	12.09 hrs,	Volume=	0.339 af	
Outflow =	3.94 cfs @	12.09 hrs,	Volume=	0.339 af,	Atten= 0%, Lag= 0.0 min
Primary =	3.94 cfs @	12.09 hrs,	Volume=	0.339 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.61' @ 12.15 hrs
Flood Elev= 298.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.24'	**15.0" Round Culvert** L= 80.9' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.24' / 292.58' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.18 cfs @ 12.09 hrs HW=295.34' TW=295.03' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.18 cfs @ 2.54 fps)

Summary for Pond CB5: CB#5

Inflow Area = 0.53 ac, 77.00% Impervious, Inflow Depth > 5.18" for 50-yr event
Inflow = 2.67 cfs @ 12.09 hrs, Volume= 0.228 af
Outflow = 2.67 cfs @ 12.09 hrs, Volume= 0.228 af, Atten= 0%, Lag= 0.0 min
Primary = 2.67 cfs @ 12.09 hrs, Volume= 0.228 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 295.70' @ 12.19 hrs
Flood Elev= 298.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	294.56'	**15.0" Round Culvert** L= 22.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 294.56' / 294.34' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.03 cfs @ 12.09 hrs HW=295.55' TW=295.34' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.03 cfs @ 2.66 fps)

Summary for Pond CB80: CB#80

[80] Warning: Exceeded Pond CB800 by 0.56' @ 12.10 hrs (4.43 cfs 0.141 af)

Inflow Area = 0.64 ac, 56.11% Impervious, Inflow Depth > 5.20" for 50-yr event
Inflow = 3.37 cfs @ 12.09 hrs, Volume= 0.276 af
Outflow = 3.37 cfs @ 12.09 hrs, Volume= 0.276 af, Atten= 0%, Lag= 0.0 min
Primary = 3.37 cfs @ 12.09 hrs, Volume= 0.276 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.55' @ 12.16 hrs
Flood Elev= 314.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.06'	**15.0" Round Culvert** L= 15.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.06' / 309.98' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=313.18' TW=313.27' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond CB800: CB#800

Inflow Area = 0.27 ac, 72.99% Impervious, Inflow Depth > 5.22" for 50-yr event
Inflow = 1.38 cfs @ 12.09 hrs, Volume= 0.117 af
Outflow = 1.38 cfs @ 12.09 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min
Primary = 1.38 cfs @ 12.09 hrs, Volume= 0.117 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 313.57' @ 12.21 hrs
Flood Elev= 314.01'

Device	Routing	Invert	Outlet Devices
#1	Primary	310.27'	**15.0" Round Culvert** L= 22.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 310.27' / 310.16' S= 0.0048 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=312.60' TW=313.13' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB9: CB#9

Inflow Area = 0.90 ac, 54.67% Impervious, Inflow Depth > 5.03" for 50-yr event
Inflow = 4.63 cfs @ 12.09 hrs, Volume= 0.379 af
Outflow = 4.63 cfs @ 12.09 hrs, Volume= 0.379 af, Atten= 0%, Lag= 0.0 min
Primary = 4.63 cfs @ 12.09 hrs, Volume= 0.379 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 315.27' @ 12.09 hrs
Flood Elev= 317.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	314.04'	**15.0" Round Culvert** L= 203.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 314.04' / 310.50' S= 0.0174 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.53 cfs @ 12.09 hrs HW=315.24' TW=313.25' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 4.53 cfs @ 3.74 fps)

Summary for Pond CB90: CB#90

Inflow Area = 0.31 ac, 72.11% Impervious, Inflow Depth > 4.90" for 50-yr event
Inflow = 1.49 cfs @ 12.09 hrs, Volume= 0.128 af
Outflow = 1.49 cfs @ 12.09 hrs, Volume= 0.128 af, Atten= 0%, Lag= 0.0 min
Primary = 1.49 cfs @ 12.09 hrs, Volume= 0.128 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 315.48' @ 12.12 hrs
Flood Elev= 317.72'

Device	Routing	Invert	Outlet Devices
#1	Primary	314.74'	**15.0" Round Culvert** L= 29.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 314.74' / 314.14' S= 0.0201 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.15 cfs @ 12.09 hrs HW=315.44' TW=315.24' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.15 cfs @ 2.34 fps)

Summary for Pond DMH111: DMH#111

[80] Warning: Exceeded Pond CB11 by 0.03' @ 11.85 hrs (1.51 cfs 0.060 af)

Inflow Area =	1.47 ac, 47.09% Impervious, Inflow Depth >	4.95"	for 50-yr event	
Inflow =	7.51 cfs @	12.09 hrs, Volume=	0.605 af	
Outflow =	7.51 cfs @	12.09 hrs, Volume=	0.605 af, Atten= 0%, Lag= 0.0 min	
Primary =	7.51 cfs @	12.09 hrs, Volume=	0.605 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.19' @ 12.35 hrs
Flood Elev= 314.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	309.79'	**24.0" Round Culvert** L= 40.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.79' / 309.59' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=312.64' TW=312.67' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond DMH17: DMH#17

Inflow Area =	3.19 ac, 41.78% Impervious, Inflow Depth >	4.74"	for 50-yr event	
Inflow =	14.58 cfs @	12.11 hrs, Volume=	1.261 af	
Outflow =	14.58 cfs @	12.11 hrs, Volume=	1.261 af, Atten= 0%, Lag= 0.0 min	
Primary =	14.58 cfs @	12.11 hrs, Volume=	1.261 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 276.89' @ 12.13 hrs
Flood Elev= 279.48'

Device	Routing	Invert	Outlet Devices
#1	Primary	274.89'	**24.0" Round Culvert** L= 279.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 274.89' / 272.09' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=13.13 cfs @ 12.11 hrs HW=276.87' TW=275.06' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 13.13 cfs @ 5.26 fps)

Summary for Pond DMH18: DMH#18

Inflow Area =	2.45 ac, 33.78% Impervious, Inflow Depth >	4.63"	for 50-yr event	
Inflow =	10.98 cfs @	12.12 hrs, Volume=	0.946 af	
Outflow =	10.98 cfs @	12.12 hrs, Volume=	0.946 af, Atten= 0%, Lag= 0.0 min	
Primary =	10.98 cfs @	12.12 hrs, Volume=	0.946 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 278.49' @ 12.12 hrs
Flood Elev= 281.88'

Device	Routing	Invert	Outlet Devices
#1	Primary	276.06'	**18.0" Round Culvert** L= 71.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 276.06' / 274.99' S= 0.0149 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=10.52 cfs @ 12.12 hrs HW=278.42' TW=276.87' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 10.52 cfs @ 5.96 fps)

Summary for Pond DMH2: DMH#2

Inflow Area = 1.67 ac, 66.11% Impervious, Inflow Depth > 4.55" for 50-yr event
Inflow = 7.31 cfs @ 12.09 hrs, Volume= 0.635 af
Outflow = 7.31 cfs @ 12.09 hrs, Volume= 0.635 af, Atten= 0%, Lag= 0.0 min
Primary = 7.31 cfs @ 12.09 hrs, Volume= 0.635 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 293.75' @ 12.13 hrs
Flood Elev= 297.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.19'	**18.0" Round Culvert** L= 50.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 291.19' / 291.04' S= 0.0030 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.65 cfs @ 12.09 hrs HW=293.67' TW=293.23' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 5.65 cfs @ 3.20 fps)

Summary for Pond DMH8: DMH#8

[80] Warning: Exceeded Pond CB80 by 0.29' @ 12.05 hrs (3.19 cfs 0.138 af)

Inflow Area = 1.54 ac, 55.26% Impervious, Inflow Depth > 5.10" for 50-yr event
Inflow = 8.01 cfs @ 12.09 hrs, Volume= 0.655 af
Outflow = 8.01 cfs @ 12.09 hrs, Volume= 0.655 af, Atten= 0%, Lag= 0.0 min
Primary = 8.01 cfs @ 12.09 hrs, Volume= 0.655 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 313.37' @ 12.12 hrs
Flood Elev= 314.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	309.88'	**18.0" Round Culvert** L= 13.4' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 309.88' / 309.81' S= 0.0052 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.48 cfs @ 12.09 hrs HW=313.26' TW=312.68' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 6.48 cfs @ 3.66 fps)

Summary for Link A: Western Shadowbrook Drive Treatment Area

Inflow Area = 5.76 ac, 32.84% Impervious, Inflow Depth > 3.48" for 50-yr event
Inflow = 14.58 cfs @ 12.11 hrs, Volume= 1.669 af
Primary = 14.58 cfs @ 12.11 hrs, Volume= 1.669 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: pond at beginning of neighborhood

Inflow Area = 5.28 ac, 37.67% Impervious, Inflow Depth > 4.06" for 50-yr event
Inflow = 10.33 cfs @ 12.13 hrs, Volume= 1.788 af
Primary = 10.33 cfs @ 12.13 hrs, Volume= 1.788 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Wetlands

Inflow Area = 9.23 ac, 21.04% Impervious, Inflow Depth > 3.72" for 50-yr event
Inflow = 22.54 cfs @ 12.26 hrs, Volume= 2.862 af
Primary = 22.54 cfs @ 12.26 hrs, Volume= 2.862 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

18. RIP RAP APRON CALCULATIONS

KEACH-NORDSTROM ASSOCIATES, INC.

RIP RAP OUTLET PROTECTION APRON CALCULATIONS

Project: **Sheperd's Hill** Date: **5/2/2022**
KNA #: 17-0824-1

The purpose of this spreadsheet is to calculate the dimensions of Inlet/Outlet Protection apron (riprap) required during the SCS/NRCS 25-year type III 24-hr storm event. The spillway weir(s) inlet/outlet apron protection will be sized for the SCS/NRCS 25-year type III 24-hr storm event.

Required Inp

Q	peak flow in CFS
Do	diameter in feet of outlet or width of channel
Tw	tail water at end of apron

Depending on the tail water conditions, either **column 1** or **column 2** is used for calculations

Column One where Tw<1/2Do	Column Two where Tw>1/2Do
Length of Apron	
La = (1.8Q/Do^3/2)+7Do	**La = 3*Q/Do^3/2+7Do**
Width of Apron at outfall	
W1 = 3*Do	W1 = 3*Do
W2 = 3*Do + La	W2 = 3*Do+0.4*La

If defined channel, then use channel width for W1 and W2

Rock Rip Rap Size:
d50 = (0.02*Q^4/3)/(Tw*Do)

RIRAP GRADATION ENVELOPE

Calculation Summary Table:

Input to Chart					Calculated Output						d100		d85		d50		d15			USE			
Description	(Optional)	Q-25 (cfs)	Do (ft)	Tw (ft)	La	W1	W2 no channel	d50, ft	d50 in	USE d50 in.	FROM in	TO in	FROM in	TO in	FROM in	TO in	FROM in	TO in	depth in	Depth in.	Length ft.	W1 ft.	W2 ft.
HW#1	DMH#2 - Outlet Protection	5.99	1.50	2.16	20	5	13	0.1	0.81	2	3	4	3	4	2	3	1	1	5	5	20	5	13
HW#7	DMH#8 - Outlet Protection	6.51	1.50	2.87	21	5	13	0.1	0.68	2	3	4	3	4	2	3	1	1	5	5	21	5	13
HW#10	DMH#111 - Outlet Protection	6.07	2.00	3.17	20	4	4	0.0	0.42	2	3	4	3	4	2	3	1	1	5	5	20	4	4
HW#22	OS#21 Outlet Protection	0.13	1.25	0.50	9	10	10	0.0	0.03	2	3	4	3	4	2	3	1	1	5	5	9	10	10
HW#16	DMH#17 Outlet Protection	11.70	2.00	2.23	26	10	10	0.1	1.43	2	3	4	3	4	2	3	1	1	5	5	26	10	10
HW#24	OS#23 Outlet Protection	11.40	1.50	0.60	22	4	4	0.6	6.84	6	9	12	8	11	6	9	2	3	15	15	22	4	4
HW#200	CB#201 Outlet Protection	2.73	1.25	1.75	15	4	4	0.0	0.42	2	3	4	3	4	2	3	1	1	5	5	15	4	4

* Center Apron with Headwall and Outlet Pipe (All Cases)

* Line Apron with 6.0 oz. Geotextile Fabric (All Cases)

19. SITE SPECIFIC SOIL REPORT

Stoney Ridge
ENVIRONMENTAL LLC

October 21, 2020

Matt Peterson
Keach-Nordstrom Associates, Inc
10 Commerce Park North, Suite 3
Bedford, NH 03110

RE: Shepherd's Hill Condominiums
Top of the Hill and Below Extension
Hudson, New Hampshire

SUBJECT: Site-Specific Soil Map Report

Dear Mr. Peterson,

The purpose of this soil report and accompanying map is to document the soil characteristics for the project location referenced above. The above noted area is located off of Shadowbrook Drive, in Hudson, NH and can be found on Tax Map 177, labeled as Lot 5. For purposes of this project SRE has identified two areas of mapping, the Top of the Hill and Below/the lower section. This report has been combined to discuss both areas.

This soil map was prepared by Stoney Ridge Environmental (SRE) by utilizing the Site-Specific Soil Mapping Standards for New Hampshire and Vermont (SSSMS), SSSNNE Special Publication No. 3, Version 5, December 2017. The soil map units were identified using the New Hampshire State-Wide Numerical Soils Legend, Issue #10, January 2011. The Site-Specific Standards apply the latest up to date knowledge of soils and provide the public with the most advanced soil resource information available today. The Site-Specific Standards are based on a universally recognized taxonomic system of soil classification and are supported by national soil mapping standards established by the USDA National Cooperative Soil Survey. They allow for the development of multi-purpose soil map products, which are carefully controlled and monitored through a state, regional, and national quality assessment program. The Site-Specific Standards are backed by the most advanced soil research program in the world. The Site-Specific Standards have been developed by the Society of Soil Scientists of Northern New England in cooperation with the USDA Natural Resources Conservation Service in response to the need to provide regulatory agencies, local officials, and land use planners with consistent high quality large scale soil resource information.

The accompanying soil maps were developed on a base map of 1" = 30', with contour intervals of 2'. The base existing conditions plans were supplied by Keach-Nordstrom Associates, Inc. (KNA). The wetlands on site were delineated by others. The soils fieldwork for the Site-Specific Soils Map was performed on August 5, 2020 with hand dug pits and August 24, 2020 by observing soil profiles via machine-dug test pits within the site. Further field work was completed on August 6, 2020 as well. The final drafting of the soil map took place on September 10th and 11th of 2020. All field work and soil mapping was completed by Cynthia M. Balcius CSS, CWS & CPESC, Justin Sherman and Diane DeVries of SRE.

Location Description

The site is located off of Shadowbrook Drive in Shepherd's Hill Condominiums in Hudson, New Hampshire. Over all the sites abut an existing residential condominium development with adjacent wooded areas, bordered by Central Street/NH Rt. 111 to the north and northwest, a conservation easement to the east, and Kimball Hill Road to the south and southwest. The topography of the site varied with the Top of the Hill site located at the height of land surrounded by steep graded slopes developed in crushed rock, gravel and sandy fill materials. There are extensive areas of ledge and shallow fill over ledge areas located in this area.

The lower/below area was the stockpile/staging and rock crushing location of the past construction. Most of the area consists of sandy, rocky fill materials that were graded out, a detention basin/drainage structures, stockpile of loam and ledge outcrops with piles of large rocks and boulders. The northwest side of this area is a steep open ledge cut that drops to a level ledge cut that then grades down to the level staging area floor that was leveled with the sandy/rocky fill materials. A large knob ridge of ledge is located in the northeastern section of this area and has been covered with large chunks of rock and boulders, probably remnants of the blasting from prior construction. East and southeast of this area is wooded, although still disturbed this area represents the least disturbed area. The location slopes west from the ledge areas and then more naturally grades out to some wetland areas.

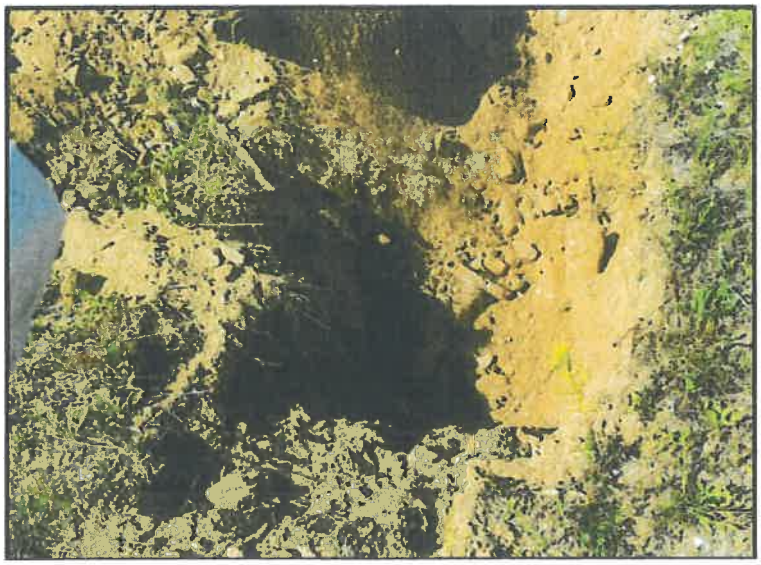
A view of the Top of the Hill mapping area. A thin layer of sandy coarse fill materials has been graded over ledge.

A view of the ledge ridge found in the lower areas of soil mapping. The ledge is covered in stockpiled rocks and boulders.

Site Soil Descriptions

Hollis loamy sand (86 B/RK): This soil map unit was mapped in both areas. A 10 to 20 inch layer of coarse tailings and coarse sandy fill is present over ledge. This map unit is considered excessively well drained and the shallow ledge is a restrictive layer. K_{sat} values for this soil type range from 0.6-6 in/hr in the upper horizons over the ledge.

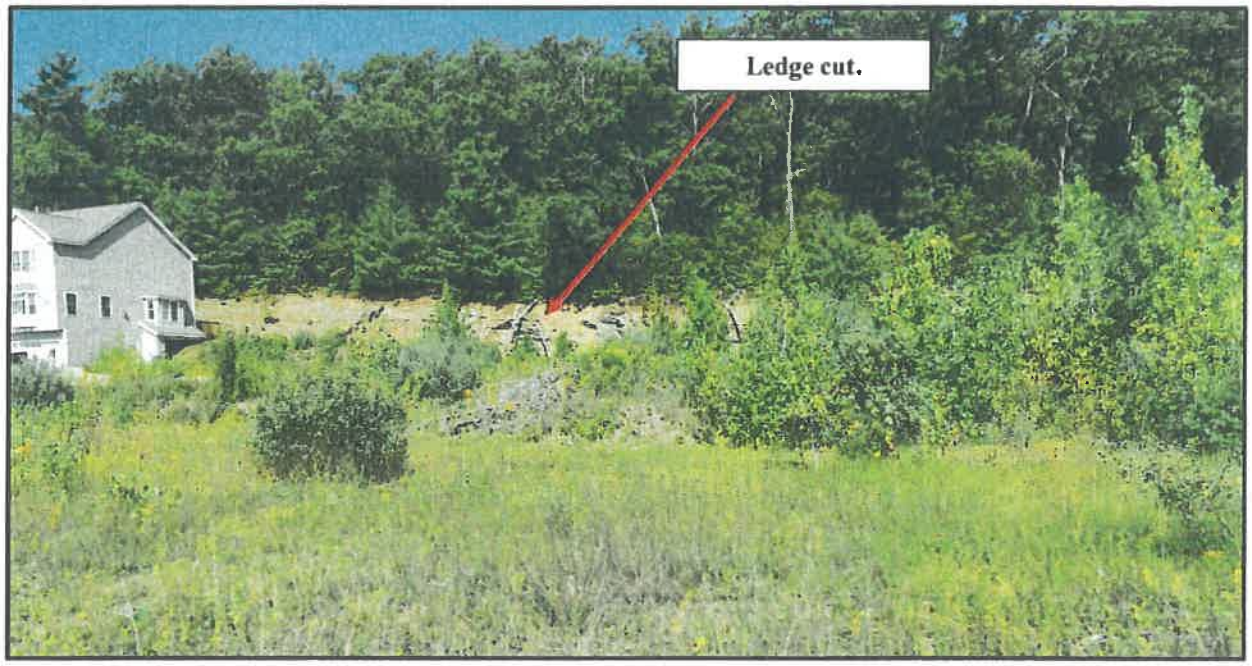
Rock Outcrop (399 A/RK, B/RK, C/RK, D/RK, E/RK, F/RK): Both areas consist of extensive ledge areas that are considered restrictive to overall use and management.



A view of the deeper sandy cobbly fill over natural sandy soil materials of the 550 distrubed soil map unit as described doing machine dug test pits.

Udorthents, sandy cobbly fill over deeper ledge/aaaaa (550 A, B, C, D, E): This map unit consists of the sandy cobbly fill areas that are found surrounding and graded away from the top ledge cap. Ledge in this area was mostly deeper than 4 feet. This same map unit was also observed in the lower area out in the relatively level past staging area. The overall drainage class would be considered excessively well drained with no restrictive layer within 40 inches.

Udorthents, pavement over fill/hahde (500 A, B): This disturbed area is the paved road over the same type of fill materials in the 550 map unit.



Chatfield sandy loam (189 D,E):This map unit developed in loamy glacial till over moderately deep ledge. This soil type is considered moderately well drained with average seasonal high water tables found between 20 and 40 inched below the surface. Ledge is found between 40 to 60 inches in depth below the surface. K_{sat} values for this soil type range from 0.6-6 in/hr in the upper horizons and 0.06-0.6 in/hr in the lower horizons. The soil type was mapped in the transition area between the open staging area and the natural wetlands located to the east on site.

Timakwa mucky peat (393 A,VPD): This very poorly drained soil map unit has formed in organic materials over sand. The wetland area to the east contained this hydric soil type. The water table is found at the surface for most of the year and exhibits a Ksat rate of 6.0 to 100 In/hr.

An example of Timakwa very poorly drained soils mapped in the wetlands on-site.

A Site-Specific Soil Map Unit legend for the site-specific soil map symbols used in the preparation of this map is attached to this report.

This completes the narrative report that accompanies the site-specific soil map prepared for the site located identified as Shepherds Hill, Hudson. If there are any questions regarding the soil map or the report, please feel free to contact SRE at 776-5825.

Sincerely,
Stoney Ridge Environmental, LLC

STATE OF NEW HAMPSHIRE CYNTHIA M. BALCIUS NO. 084 CERTIFIED SOIL SCIENTIST

Cynthia M. Balcius, CSS, CWS, CPESC
Senior Soil & Wetland Scientist

Attachments: Site-Specific Soil Map

Stoney Ridge ENVIRONMENTAL LLC

N43°03'50"W
101.5900'

N43°03'50"W
487.6800'

EXIST. BLDG.

EXIST. BLDG.

EXIST. BLDG.

EXIST. GUARDRAIL (TYP.)

S46°27'45"E
28.6900'

S45°24'14"W
394.8600'

S45°24'14"W
155.0000'

S01°50'45"W
137.0000'

S61°05'55"W
284.9900'

S61°05'55"W
517.2400'

S04°43'42"W
200.0000'

S19°29'17"E
100.0000'

S58°51'03"E
150.0000'

S89°57'58"E
125.8600'

S45°15'56"E
296.8200'

N47°35'30"E
807.5400'

EXIST. TREELINE (TYP.)

EXIST. GRAVEL ROAD

EXIST. BITUMINOUS WALK

EXIST. GARAGE

EXIST. TRANS CABLE PAD BOX

CABLE BOX

VERTICAL PVC (TYP)

6" PVC

25.78' VARIES

26.72' VARIES

12 335.21 SPIKE SET

13 328.28 HUB SET

14 312.39 HUB SET

15 310.12 HUB SET

11 332.75 HUB SET

1 308.99 PK SET

2 295.45 PK SET

3 280.10 PK SET

4 HUB SET

5 294.23

SMH RIM=198.95 INV.OUT=195.15

SMH RIM=202.17 INV.OUT=189.69

SMH RIM=197.87 INV.IN=193.37 INV.OUT=193.34

SMH RIM=200.72 INV.IN=188.98(NE) INV.IN=188.99(NW) INV.OUT=188.91

SMH RIM=189.31 INV.IN=182.3 INV.OUT=174.61

SMH RIM=174.32 DROP INLET INV.IN TOP OF P INV.IN=162.9 INV.OUT=

399A 399B 399C 399D 399E 399F 399G 399H 399J 550A 550B 550C 550D 550E 550F 550G 550H 550J 550K 550L 550M 550N 550P 550Q 550R 550S 550T 550U 550V 550W 550X 550Y 550Z

N46°18'55"E
164.3400'
N54°33'18"E
268.9200'
N51°54'28"E
85.3600'
N51°42'38"E
141.0300'
N46°34'08"E
N48°10'45"E
50.4400'
S05°46'29"E
39.6300'
N37°25'58"E
168.2400'
S05°46'29"E
203.1800'
N64°33'40"W
23.7200'
S09°59'35"W
34.6800'
S00°52'37"E
35.3400'
S13°25'46"E
34.2700'
S05°56'22"W
165.7400'
N22°41'59"W
24.7900'
N67°27'40"W
145.0000'
BP: 0+00.00
EP: 7+80.27
PT: 7+22.27
PC: 6+27.73
PT: 3+09.14
PC: 3+67.87
PC: 4+33.04
S73°08'45"E
732.2800'
N52°28'53"W
62.6800'
N51°17'32"W
10.5400'
N51°42'41"W
60.0800'
N72°19'40"W
51.7400'
N86°35'53"W
31.4900'
N61°21'14"W
26.8100'
N31°31'02"W
31.2900'
S64°03'10"W
64.6700'
S81°02'29"W
60.6800'
N2°19'45"E
3.6300'
Existing Right of Way
Extent of Survey
1" = 30'
Date: 12

KNA, Sheppards Hill, Hudson
Hudson, NH-Top of the Hill
SRE# 20-069
September 10, 2020

SITE-SPECIFIC SOIL MAP UNIT KEY

Symbol	Map Unit	Slope Class	Drainage Class	HSG/Group
86B/Rk	Hollis loamy sand	3-8%	Excessively Well Drained	C/4
399A/Rk	Rock Outcrop	0-3%		
399B/Rk	Rock Outcrop	3-8%		
399C/Rk	Rock Outcrop	8-15%		
399D/Rk	Rock Outcrop	15-25%		
399E/Rk	Rock Outcrop	25-50%		
399F/Rk	Rock Outcrop	50%+		
550A	Udorthents, sandy cobbly fill over deeper ledge/aaaaa	0-3% slopes	Excessively Well Drained	A/1
550B	Udorthents, sandy cobbly fill over deeper ledge/aaaaa	3-8% slopes	Excessively Well Drained	A/1
550C	Udorthents, sandy cobbly fill over deeper ledge/aaaaa	8-15% slopes	Excessively Well Drained	A/1
550D	Udorthents, sandy cobbly fill over deeper ledge/aaaaa	15-25% slopes	Excessively Well Drained	A/1
550E	Udorthents, sandy cobbly fill over deeper ledge/aaaaa	25-50% slopes	Excessively Well Drained	A/1
500A	Udorthents, pavement over fill/hahde	0-3%	Impervious	N/A
500B	Udorthents, pavement over fill/hahde	3-8%	Impervious	N/A

"This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product, produced by a certified soil scientist, and is not a product of the USDA Natural Resources Conservation Service. There is a narrative report that accompanies this map and map key."

KNA, Sheppards Hill, Hudson
Hudson, NH-Below
SRE# 20-069
September 10, 2020

SITE-SPECIFIC SOIL MAP UNIT KEY

Symbol	Map Unit	Slope Class	Drainage Class	HSG/Group
86F/Rk	Hollis loamy sand	50%+	Excessively Well Drained	C/4
189D	Chatfield sandy loam	15-25%	Moderately Well Drained	B/3
189E	Chatfield sandy loam	25-50%	Moderately Well Drained	B/3
399A/Rk	Rock Outcrop	0-3%		
399B/Rk	Rock Outcrop	3-8%		
399C/Rk	Rock Outcrop	8-15%		
399D/Rk	Rock Outcrop	15-25%		
399E/Rk	Rock Outcrop	25-50%		
399F/Rk	Rock Outcrop	50%+		
550A	Udorthents, sandy cobbly fill over deeper ledge/aaaaa	0-3%	Excessively Well Drained	A/1
550B	Udorthents, sandy cobbly fill over deeper ledge/aaaaa	3-8%	Excessively Well Drained	A/1
550C	Udorthents, sandy cobbly fill over deeper ledge/aaaaa	8-15%	Excessively Well Drained	A/1
550D	Udorthents, sandy cobbly fill over deeper ledge/aaaaa	15-25%	Excessively Well Drained	A/1
550E	Udorthents, sandy cobbly fill over deeper ledge/aaaaa	25-50%	Excessively Well Drained	A/1
500A	Udorthents, pavement over fill/hahde	0-3%	Impervious	N/A
500B	Udorthents, pavement over fill/hahde	3-8%	Impervious	N/A
393A/VPD	Timakwa mucky peat	0-3%	Very Poorly Drained	D/6

"This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product, produced by a certified soil scientist, and is not a product of the USDA Natural Resources Conservation Service. There is a narrative report that accompanies this map and map key."

20. INFILTRATION FEASIBILITY REPORT

INFILTRATION FEASIBILITY REPORT

SHEPERD'S HILL

Map 117; Lot 5
Shadowbrook Drive
Hudson, New Hampshire

May 2, 2022

TABLE OF CONTENTS:

KNA KEACH-NORDSTROM ASSOCIATES, INC.

I. Location of Practices

Infiltration practice #1 and #2 are proposed for this project. Infiltration pond #1 is located in the center of the cul-de-sac in phase three of this development. Infiltration pond #2 is along the southern portion of phase 3 of the development adjacent to Clearview Circle units. Both ponds will collect, treat and recharge storm water.

II. Existing Topography

The existing topography within the area of both proposed infiltration ponds is mostly level with grades ranging between 0% and 5%.

III. Test Pit Locations

Data from two test pits (TP#14 & 15) performed within the area of the proposed infiltration pond #1 was used to determine infiltration rates and depth to seasonal high water table. Data from two test pits (TP#12 & 13) performed within the area of the proposed infiltration pond #1 was used to determine infiltration rates and depth to seasonal high water table.

IV. Seasonal High Water Table Elevation Summaries

The results from the test pit performed is as follows:

Test Pit #12

The existing elevation of the ground	= 278.75 (approx. original grade)
Distance to SHWT	= 84" (7' bottom of pit)
Elevation of SHWT	= 271.75
Lowest Elevation of Test Pit	= 271.75

In area of Practice (adjacent to TP#13)

The existing elevation of the ground	= 277.5
Distance to SHWT (same as TP#13)	= 84" (7')
Elevation of SHWT	= 270.5
Lowest Elevation of Test Pit	= 270.5

Test Pit #13

The existing elevation of the ground	= 277.02 (approx. original grade)
Distance to SHWT	= 57" (4.75' bottom of pit)
Elevation of SHWT	= 272.27
Lowest Elevation of Test Pit	= 272.27

In area of Practice (adjacent to TP#13)

The existing elevation of the ground	= 277.5
Distance to SHWT (same as TP#13)	= 57" (4.75')

Elevation of SHWT	= 272.75
Lowest Elevation of Test Pit	= 272.75

Test Pit #14

The existing elevation of the ground	= 277.64 (approx. original grade)
Distance to SHWT	= 58" (4.83' bottom of pit)
Elevation of SHWT	= 272.81
Lowest Elevation of Test Pit	= 272.81

In area of Practice (adjacent to TP#14)

The existing elevation of the ground	= 277
Distance to SHWT (same as TP#14)	= 54" (4.83')
Elevation of SHWT	= 272.17
Lowest Elevation of Test Pit	= 272.17

Test Pit #15

The existing elevation of the ground	= 276.39 (approx. original grade)
Distance to SHWT	= 58" (4.83' bottom of pit)
Elevation of SHWT	= 271.56
Lowest Elevation of Test Pit	= 271.56

In area of Practice (adjacent to TP#15)

The existing elevation of the ground	= 277
Distance to SHWT (same as TP#15)	= 58" (4.83')
Elevation of SHWT	= 272.17
Lowest Elevation of Test Pit	= 272.17

V. Infiltration Rate Summary

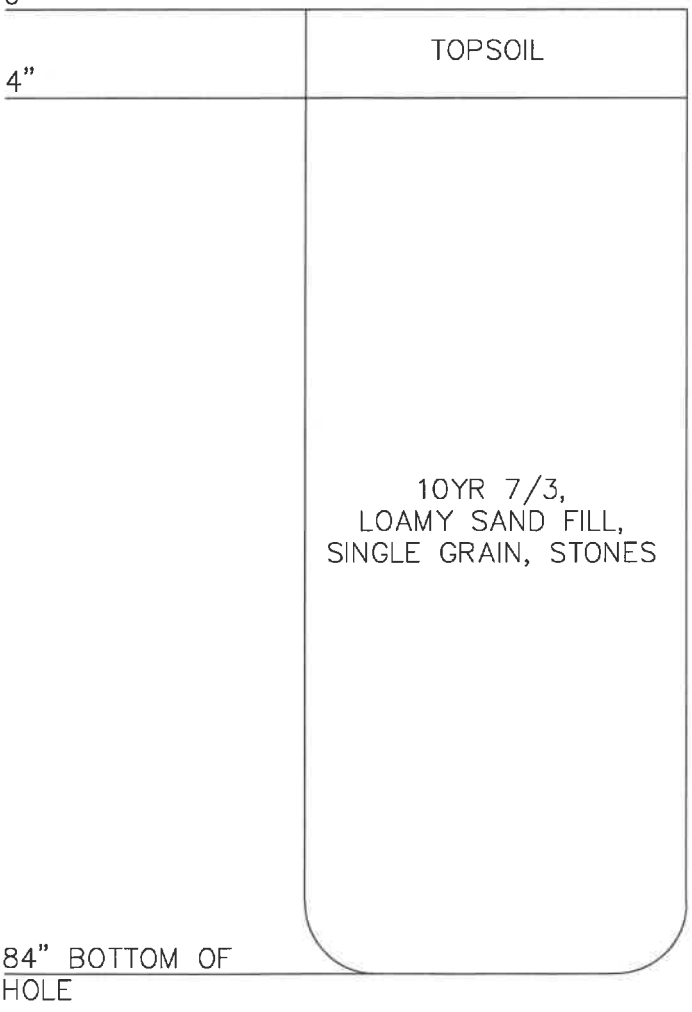
Soils in the area of both infiltration practices have been disturbed and the area was used for staging and stock piling for the other parts of the development. With the parent material being unknown an infiltration rate of 1 in/hr was used based off the soil description in the test pit logs. The logs describe a sandy fill material throughout each pit. A sand fill would be well drained, therefore the 1 in./hr. was chosen as a conservative value.

VI. Profile Descriptions

Profile descriptions are provided as follows.

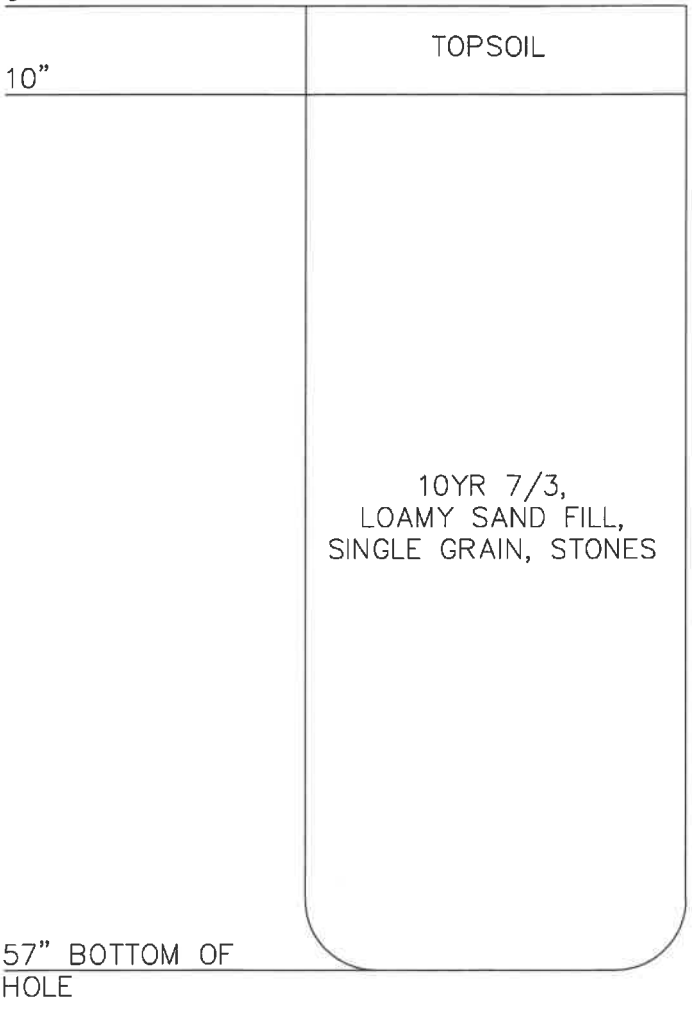
TP #12

LOGGED BY GPC
PERC TEST @ 20"
DATE: 8-24-2020
PERC RATE: 8 MIN./INCH
IMPERVIOUS LAYER: NONE
WATER ENCOUNTERED: NONE



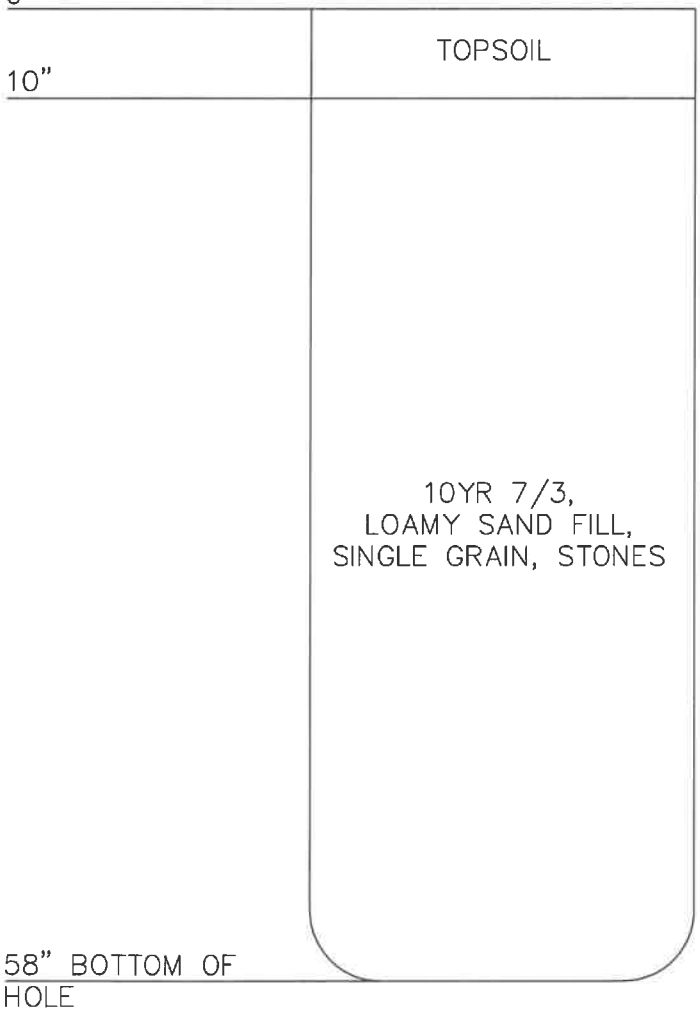
TP #13

LOGGED BY GPC
PERC TEST @ 20"
DATE: 8-24-2020
PERC RATE: 8 MIN./INCH
IMPERVIOUS LAYER: 57"
WATER ENCOUNTERED: NONE



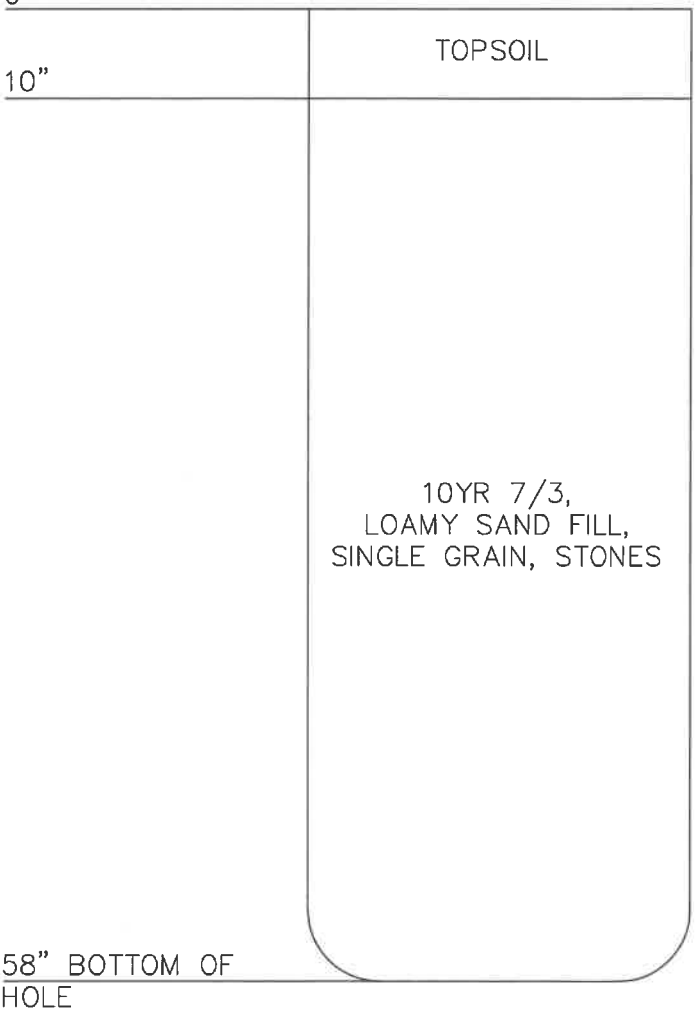
TP #14

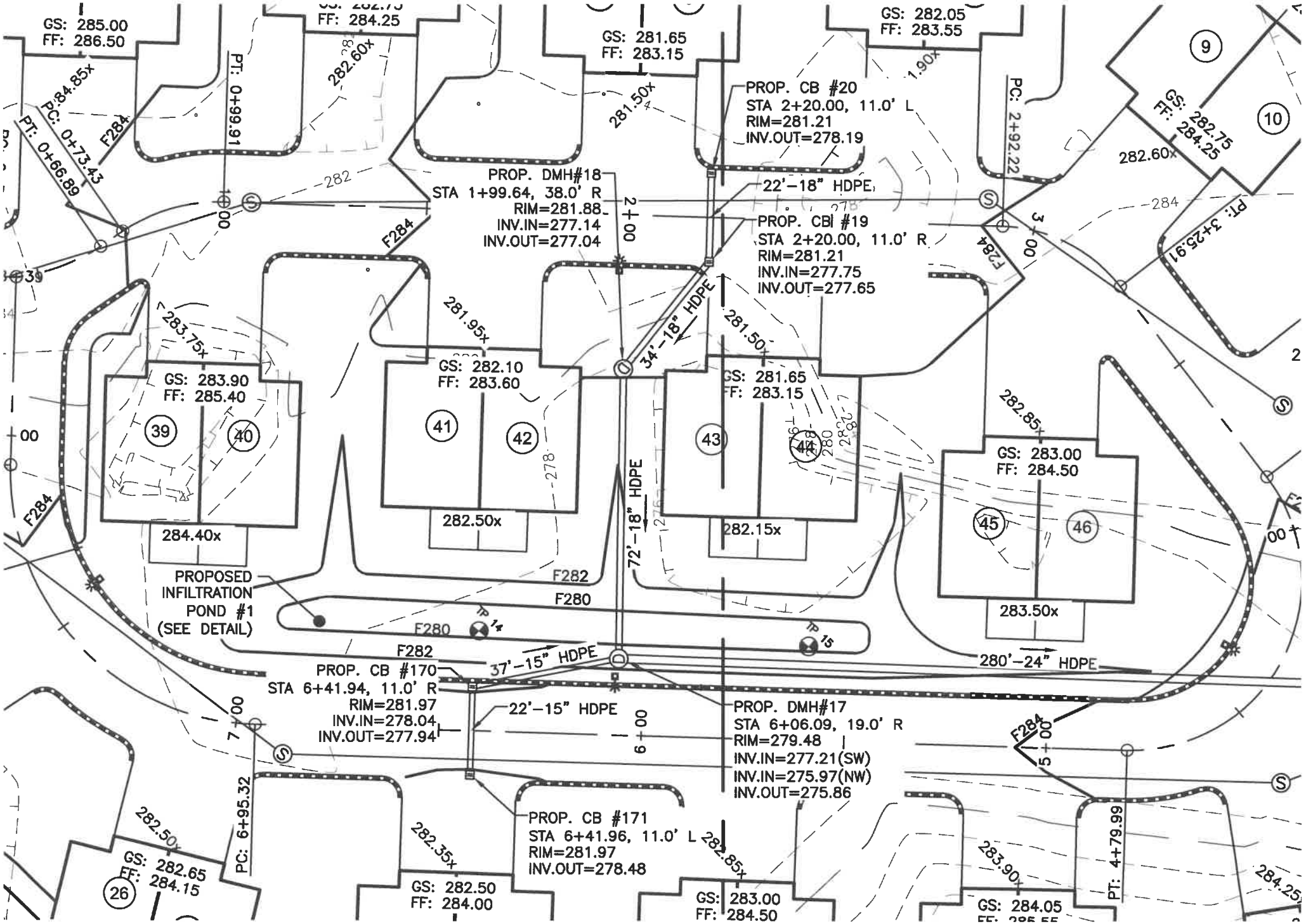
LOGGED BY GPC
PERC TEST @ 20"
DATE: 8-24-2020
PERC RATE: 8 MIN./INCH
IMPERVIOUS LAYER: 58"
WATER ENCOUNTERED: NONE



TP #15

LOGGED BY GPC
PERC TEST @ 20"
DATE: 8-24-2020
PERC RATE: 8 MIN./INCH
IMPERVIOUS LAYER: 58"
WATER ENCOUNTERED: NONE




GS: 285.00
FF: 286.50
FF: 284.25
GS: 281.65
FF: 283.15
GS: 282.05
FF: 283.55
PROP. CB #20
STA 2+20.00, 11.0' L
RIM=281.21
INV.OUT=278.19
PROP. DMH#18
STA 1+99.64, 38.0' R
RIM=281.88
INV.IN=277.14
INV.OUT=277.04
22'-18" HDPE
PROP. CBI #19
STA 2+20.00, 11.0' R
RIM=281.21
INV.IN=277.75
INV.OUT=277.65
34'-18" HDPE
GS: 283.90
FF: 285.40
GS: 282.10
FF: 283.60
GS: 281.65
FF: 283.15
GS: 283.00
FF: 284.50
282.50x
282.15x
283.50x
284.40x
PROPOSED
INFILTRATION
POND #1
(SEE DETAIL)
72'-18" HDPE
F282
F280
37'-15" HDPE
280'-24" HDPE
PROP. CB #170
STA 6+41.94, 11.0' R
RIM=281.97
INV.IN=278.04
INV.OUT=277.94
22'-15" HDPE
PROP. DMH#17
STA 6+06.09, 19.0' R
RIM=279.48
INV.IN=277.21(SW)
INV.IN=275.97(NW)
INV.OUT=275.86
PROP. CB #171
STA 6+41.96, 11.0' L
RIM=281.97
INV.OUT=278.48
GS: 282.65
FF: 284.15
GS: 282.50
FF: 284.00
GS: 283.00
FF: 284.50
GS: 284.05
PC: 0+69.91
PT: 0+84.85
PC: 0+73.43
PT: 0+66.89
PC: 2+92.22
PT: 3+25.91
PT: 4+79.99
PC: 6+95.32
282.60x
281.50x
281.95x
283.75x
282.85x
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283.90x
284.25x
F284
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42
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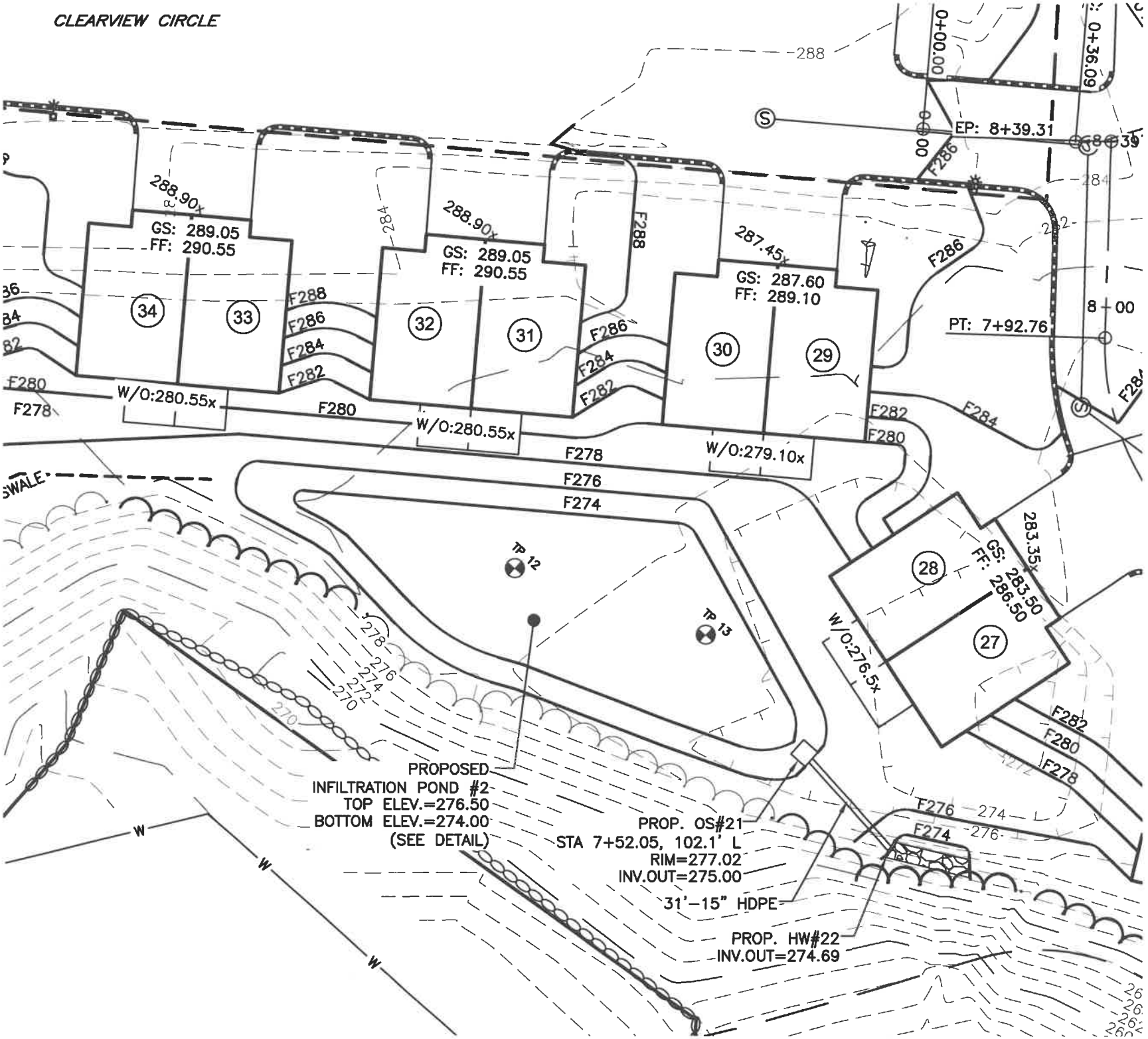
44
45
46
9
10
26


CLEARVIEW CIRCLE
0+00.00
0+36.09
EP: 8+39.31
PT: 7+92.76
8+00
288.90x
GS: 289.05
FF: 290.55
288.90x
GS: 289.05
FF: 290.55
287.45x
GS: 287.60
FF: 289.10
283.35x
GS: 283.50
FF: 286.50
34
33
32
31
30
29
28
27
W/O:280.55x
W/O:280.55x
W/O:279.10x
W/O:276.5x
F288
F286
F284
F282
F280
F278
F276
F274
TP 12
TP 13
SWALE
PROPOSED
INFILTRATION POND #2
TOP ELEV.=276.50
BOTTOM ELEV.=274.00
(SEE DETAIL)
PROP. OS#21
STA 7+52.05, 102.1' L
RIM=277.02
INV.OUT=275.00
31'-15" HDPE
PROP. HW#22
INV.OUT=274.69

21. OPERATION AND MAINTENANCE PLAN WITH CHECKLISTS

STORMWATER

OPERATION & MAINTENANCE PLAN

SHEPHERDS HILL
Shadowbrook Drive
Hudson, New Hampshire

Map 117; Lot 5

May 2, 2022

KEACH-NORDSTROM ASSOCIATES, INC.

TABLE OF CONTENTS:

I. General

Introduction

The project owner or their assigned heirs will maintain the stormwater treatment facilities after construction is completed. The Applicant of the project is Althea Holdings LLC located at 253 Main Street, Nashua NH. The applicant will maintain the stormwater management system until the roadway is constructed and the Sheperd's Hill Homeowners Association will maintain the stormwater system from that time forward.

The subject property is referenced on Map 117; Lot 5 in Hudson, New Hampshire. Any transfer of responsibility for inspection and maintenance activities or transfer of ownership shall be documented to the New Hampshire Department of Environmental Services and Hudson in writing. The contract documents will require the contractor to designate a person responsible for maintenance of the sedimentation control features during construction. Long-term operation and maintenance for the stormwater management facilities are presented below.

Maintenance will be performed as described and required in the Alteration of Terrain Permit unless and until the system is formally accepted by a municipality or quasi-municipal district or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system.

Post Construction:

The following standards will be met after construction is complete:

Documentation:

A maintenance log will be kept summarizing inspections, maintenance, and any corrective actions taken. The log will include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean out of any sediments or debris, the location where the sediment and debris was disposed after removal will be indicated. The log will be made accessible to department and/or Hudson staff and a copy provided upon request.

Maintenance Requirements

Stormwater Ponds:

- Systems should be inspected at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24-hour period, with maintenance or rehabilitation conducted as warranted by such inspection.
- System embankments should be mowed periodically to maintain grass cover and any other vegetation found on the embankment should be removed at each inspection.
- Trash and debris found within the pond or in the outlet structure should be removed at each inspection.
- Removal of accumulated sediment
- Inspection and repair of embankments, inlet and outlet structures, and appurtenances

Infiltration Ponds:

- Systems should be inspected at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24-hour period, with maintenance or rehabilitation conducted as warranted by such inspection.
- Trash and debris should be removed at each inspection.
- Inspection of pre-treatment measures at least twice annually and removal of accumulated sediment as warranted by inspection, but no less than once annually.
- At least once annually, the system should be inspected for drawdown time. If the pond does not drain within 72-hours following a rainfall event, a qualified professional should assess the condition of the facility to determine measures required to restore filtration function or infiltration function (as applicable), including but not limited to the removal of accumulated sediments or reconstruction of the basin bottom.

Sediment Forebays:

- Forebays help reduce the sediment load to downstream BMP's, and will therefore require more frequent cleaning.
- Systems should be inspected at least annually.
- Conduct periodic mowing of embankments (generally two times per year) to control growth of woody vegetation.
- Trash and debris should be removed at each inspection.
- Accumulated sediment should be removed as warranted by such inspection.
- Install and maintain a staff gage or other measuring device, to indicate depth of sediment accumulation and level at which clean-out is required.

Level Spreaders:

- Systems should be inspected at least annually with maintenance or rehabilitation conducted as warranted by such inspection.
- Remove debris and accumulated sediment when exceeds 25% of spreader depth. Disposal of sediment to be done properly.
- Repair eroded areas; remove invasive species and dead vegetation.
- Perform periodic mowing.
- Snow should not be stored within or down-slope of the level spreader.
- Repair any erosion and re-grade was warranted by inspection.
- Reconstruct the spreader if down-slope channelization indicates that the spreader is not level or that discharge has become concentrated, and corrections cannot be made through minor re-grading.

Catch Basins and Closed Drainage Network:

- Catch basins may require frequent maintenance. This may require several cleanings of the sumps each year. At a minimum, it is recommended that catch basins be inspected at least twice annually.
- Sediment should be removed when it approaches half of the sump depth.
- If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other methods and disposed in conformance with the applicable state and federal regulations.

Outlet Protection:

- Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.

General:

- If any invasive species begin to grow in the stormwater management practices the species shall be disposed of in an appropriate manner that will not allow the pest to survive or spread. The disposal of such species shall be witnessed or approved by a state inspector. Methods for disposal may include, but not be limited to:
    - Encapsulating the plant(s) in plastic bags and disposing of the plant material in one of the following ways:
        - Trash pickup;
        - Discarding;
        - Open burning;
        - Incineration; or
        - Burial of infested nursery.

II. Supporting Documents

Annual Inspection and Maintenance Reporting Form
for
Shepherd's Hill
Hudson, New Hampshire

Date: _____

To: Sheperd's Hill Development LLC

Re: Certification of Inspection and Maintenance; Submittal of Forms

Property Name: _____

Property Address: _____

Contact Name: _____

Contact Phone #: _____

Contact Email Address: _____

I verify that the required stormwater facility inspections and required maintenance have been completed in accordance with the Operation & Maintenance Plan associated with the above referenced property.

The required Long-Term Inspection & Maintenance Plan Checklist is attached to this form.

_____ _____
Name of Party Responsible for Inspection & Maintenance | Property Owner

_____ _____
Authorized Signature | Signature

Long-Term Inspection & Maintenance Plan Checklist
Shepherd's Hill – Hudson, NH

Current Owner Name:	Date:
Business Address:	Inspector:
Weather:	
Date of Last Rainfall:	Amount: Inches:

Best Management Practice

Stormwater Ponds	Reason for Inspection		
	Spring ☐	Fall/Yearly ☐	After Major Storm ☐

Maintenance Required? Yes ☐ No ☐
Corrective Action Needed & Notes:

Sideslopes & berms need repair? Yes ☐ No ☐
Clean inlet & outlet structures? Yes ☐ No ☐

Infiltration Ponds	Reason for Inspection		
	Spring ☐	Fall/Yearly ☐	After Major Storm ☐

Maintenance Required? Yes ☐ No ☐
Corrective Action Needed & Notes:

Visual Inspection of vegetation? Yes ☐ No ☐
Maintenance Required? Yes ☐ No ☐
Corrective Action Needed & Notes:

Visual inspection of drawdown time? Yes ☐ No ☐
Drawdown time less than 72 hours? Yes ☐ No ☐
(if no, call a qualified professional for inspection)

Sediment Forebays	Reason for Inspection		
	Spring ☐	Fall/Yearly ☐	After Major Storm ☐

Maintenance Required? Yes ☐ No ☐
Corrective Action Needed & Notes:

Level Spreaders	Reason for Inspection		
	Spring ☐	Fall/Yearly ☐	After Major Storm ☐
Maintenance Required? Corrective Action Needed & Notes:	Yes ☐ No ☐		
Need Repairs?	Yes ☐ No ☐		
Catch Basins & Closed Drainage Network	Reason for Inspection		
	Spring ☐	Fall/Yearly ☐	After Major Storm ☐
Maintenance Required? Corrective Action Needed & Notes:	Yes ☐ No ☐		
Outlet Protection	Reason for Inspection		
	Spring ☐	Fall/Yearly ☐	After Major Storm ☐
Maintenance Required? Corrective Action Needed & Notes:	Yes ☐ No ☐		
General	Reason for Inspection		
	Spring ☐	Fall/Yearly ☐	After Major Storm ☐
Maintenance Required? Corrective Action Needed & Notes:	Yes ☐ No ☐		

Long-Term Inspection & Maintenance Log
Shepherd's Hill – Hudson, NH

Date	Inspection (Yes or No)	Maintenance (Yes or No)	List BMPs Inspected and/or Provide Comments	Inspected By:

Anti-icing Route Data Form
Shepherds' Hill – Hudson, NH

Truck Station:				
Date:				
Temperature:	Pavement Temperature:	Relative Humidity:	Dew Point:	Sky:
Reason For Applying:				
Route:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				
Name:				

III. Control of Invasive Plants

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some Exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials, or fresh produce. Some exotic plants become invasive and cause harm by:

- becoming weedy and overgrown;
- killing established shade trees;
- obstructing pipes and drainage systems;
- forming dense beds in water;
- lowering water levels in lakes, streams, and wetlands;
- destroying natural communities;
- promoting erosion on stream banks and hillsides; and
- resisting control except by hazardous chemical.

During maintenance activities, check for the presence of invasive plants and suitably remove according to the methods provided in the table below. The following table, based on the "Control of Invasive Plants" published by the New Hampshire Department of Agriculture, describes the most common invasive plants in this region and proper methods of disposal.

Name	Description	Invasive Qualities	Control Methods
Invasive Trees			
Norway Maple	- Large leaves - Will exude milky white sap when leaves are broken - Leaves turn color in Late October (fall foliage is yellow)	- Suppresses growth of grass, garden plants, and forest understory -Wind-borne seeds can germinate and grow in deep shade	- Pull seedlings and small or shallow-rooted plants when soil is moist. Dig out plants, including the root systems. Use a forked spade or weed wrench. - Cut down the tree. Grind out the stump, or clip off re-growth. - Girdle[1] - Frill[2] - Cut stem/ cut stump with glyphosate. Follow label directions for cut stump application. Clip off sucker sprouts or paint with glyphosate.* - Foliar spray with glyphosate [3]* (mid-October to early November).
Tree of Heaven	- Long compound leaves with 11-25 lance shaped leaflets - Smell like peanut butter or burnt coffee when crushed	- Tough, can grow in poor conditions - Produces large quantities of wind-borne seeds - Grows rapidly - Secretes a toxin that kills other plants - Cannot be removed by mechanical means alone	- Pull seedlings when soil is moist. - Frill[2] (no more than 1" gap between cuts). Use Garlon 3a herbicide. - Cut stem/ cut stump with Garlon 3a. Follow label directions for cut stump application. Clip off sucker sprouts or paint with Garlon 3a.* - Foliar spray[3]* (on regrowth) - Paint bottom 12" of bark with Garlon 4 Ultra (February/March). Use maximum strength specified on label for all herbicide applications.
Invasive Shrubs			
Autumn Olive	- Formerly recommended for erosion control and wildlife value	- Highly invasive, diminishes the overall quality of wildlife habitat	- Pull seedlings and small or shallow-rooted plants when soil is moist. Dig out larger plants, including the root systems. Use a forked spade or weed wrench for trees or shrubs (up to 4" diameter trunks). - Cut down the tree. Grind out the stump, or clip off re-growth. - Cut stem/ cut stump with glyphosate. Follow label directions for cut stump application. Clip off sucker sprouts or paint with glyphosate.* - Bury stump - Do not mow

Invasive Shrubs (continued)			
Multiflora Rose	- Formerly recommended for erosion control, hedges, and wildlife habitat - Covered in white flowers in June - Very hard, curved thorns - Fringed edge to leaf stalk	- Huge shrub that chokes out all other vegetation - Too dense for most birds to nest in - Grows up trees like a vine in Shade	- Pull seedlings and small or shallow-rooted plants when soil is moist. Dig out larger plants, including the root systems (at least 6" from the crown and 6" down). Use a forked spade or weed wrench for trees or shrubs. - Controlled burning[4] (on extensive infestations) - Cut stem/ cut stump with glyphosate. Follow label directions for cut stump application. Clip off sucker sprouts or paint with glyphosate.* - Foliar spray[3]* (mix Rodeo with extra sticker-spreader, or use Roundup Sure Shot Foam on small plants) - Herbicide may be applied in winter when other plants are dormant.
Bush Honeysuckles	- Includes Belle, Amur, Morrow's, and Tatarian Honeysuckle	- Creates dense shade reducing plant diversity and eliminating nest sites in forest interior spaces	- Deadhead to prevent spread of seeds (on ornamentals). Cut off seeds or fruits before they ripen. Bag and burn, or send to a landfill. - Pull seedlings and small or shallow-rooted plants when soil is moist. Dig out larger plants, including the root systems. Use a forked spade or weed wrench for trees or shrubs. - Mow or cutting at least 4 times a season to deplete plants' store of nutrients and carbohydrates, reduce seed formation, and kill or minimize spread of plants. If necessary, repeat each year (on shady sites only, brush cut in early spring and fall). - Controlled burning[4] (during growing season) - Cut down the tree. Grind out the stump, or clip off re-growth. - Cut stem/ cut stump with Glyphosate (late in the growing season). Follow label directions for cut stump application. Clip off sucker sprouts or paint with glyphosate.*

Invasive Shrubs (continued)			
Blunt-Leaved Privet	- Medium sized shrub - Simple, oblong, dark green leaves 1-2" in length - Fragrant white flowers (spring) - Blackish-purple fruit (late summer)	- Toxic to mammals - Loss of valuable habitat	- Pull seedlings and small or shallow-rooted plants when soil is moist. Dig out larger plants, including the root systems. Use a forked spade or weed wrench for trees or shrubs. - Cut down the tree. Grind out the stump, or clip off re-growth. - Cut stem/ cut stump with Glyphosate. Follow label directions for cut stump application. Clip off sucker sprouts or paint with glyphosate.* - Trim off all flowers - Do not cut back or mow
Burning Bush, Winged Euonymus	- Wide, corky wings on the Branches - Brilliant red autumn leaves - Fruit	- High seed production	- Pull seedlings and small or shallow-rooted plants when soil is moist. Dig out larger plants, including the root systems. Use a forked spade or weed wrench for trees or shrubs. - Cut down the tree. Grind out the stump, or clip off re-growth. - Cut stem/ cut stump with Glyphosate. Follow label directions for cut stump application. Clip off sucker sprouts or paint with glyphosate.* - Trim off all flowers
Japanese Barberry	- Spiny deciduous shrub - Small leaves	- Very dense, displaces native plants - Can change chemistry of soil	- Pull seedlings and small or shallow-rooted plants when soil is moist. Dig out larger plants, including the root systems. Use a forked spade or weed wrench for trees or shrubs. - Cut down the tree. Grind out the stump, or clip off re-growth. - Cut stem/ cut stump with Glyphosate. Follow label directions for cut stump application. Clip off sucker sprouts or paint with glyphosate.* - Trim off all flowers

Invasive Woody Vines			
Japanese Honeysuckle	- Gold and White flowers - Heavy scent and sweet nectar in June	- Shade shrubs and young trees of the forest understory, eventually killing them, and changing the open structure of the forest into a dense tangle - Rampant grower - Spirals around trees, often strangling them	- Pull seedlings and small or shallow-rooted plants when soil is moist. Dig out larger plants, including the root systems. Use a forked spade or weed wrench for trees or shrubs. - Mow or cutting at least 4 times a season to deplete plants' store of nutrients and carbohydrates, reduce seed formation, and kill or minimize spread of plants. If necessary, repeat each year. - Cut stem/ cut stump with Glyphosate. Follow label directions for cut stump application. Clip off sucker sprouts or paint with glyphosate.* - Foliar spray[3]* (fall or early spring when native vegetation is dormant) Plan to re-treat repeatedly
Oriental Bittersweet	- Bright orange seed capsules in clusters all along the stem - Flowers	- Shade shrubs and young trees of the forest understory, eventually killing them, and changing the open structure of the forest into a dense tangle	- Pull seedlings and small or shallow-rooted plants when soil is moist. Dig out larger plants, including the root systems. Use a forked spade or weed wrench for trees or shrubs. - Keep ornamental plants cut back, remove all fruits as soon as they open, and bag or burn fruits. - Cut stem/ cut stump with Garlon 3a. Follow label directions for cut stump application. Clip off sucker sprouts or paint with Garlon 3a.*
Japanese Knotweed, Mexican Bamboo	- The stems have knotty joints, similar to bamboo - Grows 6-10' tall - Large, pointed oval or triangular leaves	- Shade shrubs and young trees of the forest understory, eventually killing them, and changing the open structure of the forest into a dense tangle - Can grow in shade	- Cut stem/ cut stump with Glyphosate (at least 3 times each during growing season). Follow label directions for cut stump application. Clip off sucker sprouts or paint with glyphosate.* - Foliar spray[3]* - Treat with Rodeo - In gardens, heavy mulch or dense shade may kill it.

Invasive Herbaceous Plants			
Garlic Mustard	- White-flowered biennial - Rough scalloped leaves (kidney, heart, or arrow shaped) - Garlic smell, mustard taste when its leaves are crushed	- Shade shrubs and young trees of the forest understory, eventually killing them, and changing the open structure of the forest into a dense tangle - Rampant grower - Spirals around trees, often strangling them	- Pull seedlings and small or shallow-rooted plants when soil is moist (before it flowers in spring). Dig out larger plants, including the crown and root systems. Use a forked spade or weed wrench for trees or shrubs. Tamp down soil afterwards. - Deadhead to prevent spread of seeds. Cut off seeds or fruits before they ripen. Bag and burn or send to a landfill. - Foliar spray[3]* (may be appropriate in some settings)
Japanese Stilt Grass	- Lime green color - Line of silvery hairs down the middle of the 2-3" long blade	- Tolerates sun or dense shade -Quickly invades areas left bare or disturbed by tilling or flooding - Builds a large seed bank in the soil	- Pull seedlings and small or shallow-rooted plants when soil is moist (pulled easily in early to mid-summer).Dig out larger plants, including root systems. Use a forked spade or weed wrench for trees or shrubs. Be sure to pull before it goes to seed. If seeds have formed, bag and burn or send to a landfill. - Mow or cutting at least 4 times a season to deplete plants' store of nutrients and carbohydrates, reduce seed formation, and kill or minimize spread of plants. If necessary, repeat each year. Mowing weekly or when it has just begun to flower may prevent it from setting seed. - Foliar spray[3]* (use glyphosate or herbicidal soap on large infestations. - Use a corn-based pre-emergence herbicide on annual weeds (spring). This product is also an organic fertilizer, i.e., it can stimulate growth of existing plants, including weeds, so it is appropriate for lawns and gardens but may not be appropriate in woodlands.

Invasive Herbaceous Plants (continued)			
Mile-A-Minute Vine, Devil's Tail Tearthumb	- Triangular leaves - Barbed stems - Turquoise berries	- Rapid growth - Quickly covers and shades out herbaceous plants	- Pull seedlings and small or shallow-rooted plants when soil is moist (pulled easily in early to mid-summer).Dig out larger plants, including root systems. Use a forked spade or weed wrench for trees or shrubs. Be sure to pull before it goes to seed. If seeds have formed, bag and burn or send to a landfill. - Mow or cutting at least 4 times a season to deplete plants' store of nutrients and carbohydrates, reduce seed formation, and kill or minimize spread of plants. If necessary, repeat each year. Mowing weekly or when it has just begun to flower may prevent it from setting seed. - Foliar spray[3]* (use glyphosate or herbicidal soap on large infestations. - Use a corn-based pre-emergence herbicide on annual weeds (spring). This product is also an organic fertilizer, i.e., it can stimulate growth of existing plants, including weeds, so it is appropriate for lawns and gardens but may not be appropriate in woodlands.
Spotted Knapweed	- Thistle-like flowers	- Dense, crowds out native species	- Do not pull unless the plant is young and the ground is very soft. The root will break and produce several new plants. - Wear sturdy gloves - Deadhead to prevent spread of seeds. Cut off seeds or fruits before they ripen. Bag and burn, or send to a landfill. - In lawns, spot treat with broad-leaf weed killer. Good lawn care practices (test soil; use lime and fertilizer only when soil test shows a need; mow high and frequently; leave clippings on lawn) reduce weed infestations. - Cut stem/ cut stump with Glyphosate. Follow label directions for cut stump application. Clip off sucker sprouts or paint with glyphosate.* - Foliar spray[3]*

[1]Girdle: Cut through the bark and growing layer all around the trunk, about 6" above the ground. Girdling is most effective in spring (when the sap is rising) & middle-late summer (when the tree is sending food to the roots). Clip off sucker sprouts.

[2]Frill: Using a machete, hatchet, or similar device, hack scars (several holes in larger trees) downward into the growing layer, and squirt in glyphosate (or triclopyr if specified in table). Follow label directions for injection and frill applications. This is most effective from middle to late summer. Clip off any sucker sprouts or treat with glyphosate.

[3]Foliar Spray: Use a backpack or garden sprayer or mist blower, following label directions. Avoid overspray and/or dripping onto non-target plants, because glyphosate kills most plants except moss. If it rolls off waxy or grass-like foliage, use additional sticker-spreader. Deciduous trees, shrubs, and perennials move nutrients down to the roots in late summer. Glyphosate is particularly effective at this time and when plants have just gone out of flowering. Several invasive species retain their foliage after native plants have lost theirs, and resume growth earlier in spring than most natives. This allows you to treat them without harming the natives. However, the plant must be actively growing for the herbicide to work. Retreatments may be necessary the following year if suckering occurs or the plant hasn't been entirely killed.

[4]Controlled Burning: Burning during the spring (repeated over several years) will allow native vegetation to compete more effectively with the invasive species. This requires a permit. Spot treatment with glyphosate in late fall can be used to make this method more effective

*Herbicides: It is highly recommended that small populations try to be controlled using non-chemical methods where feasible. However, for large infestations, and for a few plants herbicide use is essential. Apply herbicides carefully to avoid non-target plants, glyphosate is the least environmentally damaging herbicide in most cases. Add food coloring for visibility, and a soap-based sticker such as Cide-Kick. Glyphosate is ineffective on some plants; for these, triclopyr or Garlon 3a may be indicated. When using herbicides read the entire label and observe all precautions listed, including proper disposal. If in doubt, call your local Cooperative Extension Service.

IV. Stormwater Practice Location Plan

22. PLANS

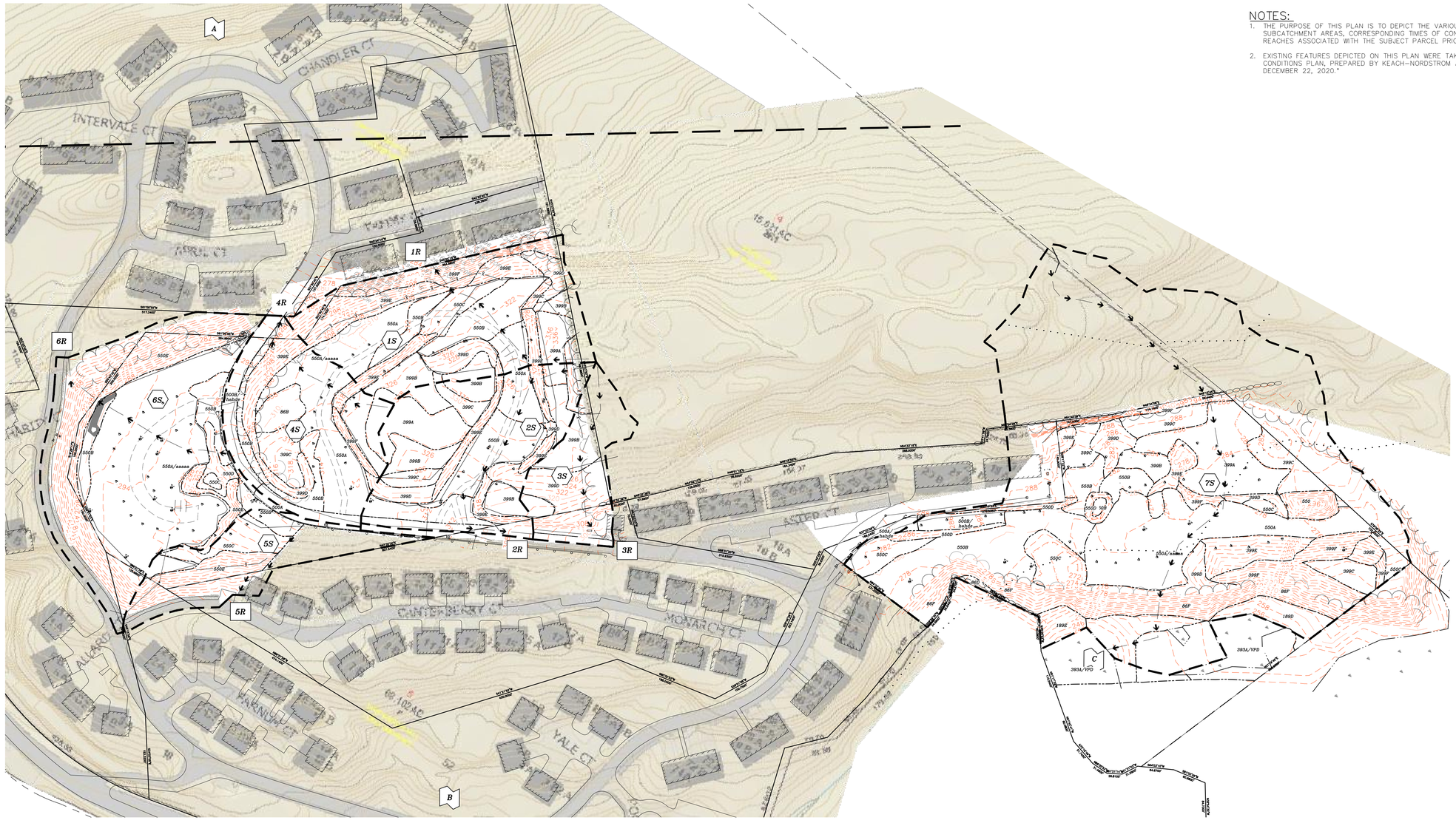
SUBDIVISION PLAN SET (22" X 34")

PRE-DEVELOPMENT DRAINAGE AREAS PLAN (22" X 34")

POST-DEVELOPMENT DRAINAGE AREAS PLANS (22" X 34")

PRE-DEVELOPMENT DRAINAGE AREAS PLAN (22" X 34" – COLOR)

POST-DEVELOPMENT DRAINAGE AREAS PLANS (22" X 34" – COLOR)



NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE VARIOUS STORMWATER SUBCATCHMENT AREAS, CORRESPONDING TIMES OF CONCENTRATION, PONDS, AND REACHES ASSOCIATED WITH THE SUBJECT PARCEL PRIOR TO DEVELOPMENT.
2. EXISTING FEATURES DEPICTED ON THIS PLAN WERE TAKEN FROM "EXISTING CONDITIONS PLAN, PREPARED BY KEACH–NORDSTROM ASSOCIATES, INC. DATED DECEMBER 22, 2020."

DRAINAGE LEGEND:

THE LEGEND BELOW REFLECTS THE HYDROCAD MODEL USED FOR DRAINAGE CALCULATIONS.

- SCS SOIL LINES
- SITE SPECIFIC SOIL LINES
- WnC — DENOTES SOIL TYPE
- P — DENOTES POND
- S — DENOTES SUBCATCHMENT AREA
- R — DENOTES REACH
- L — DENOTES POINT OF INTEREST
- LIMIT OF SUBCATCHMENT AREA
- TIME OF CONCENTRATION
- REACH

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
86B/RK	HOLLIS LOAMY SAND	3–8%	EXCESSIVELY WELL DRAINED	C/4
86F/Rk	HOLLIS LOAMY SAND	50%+	EXCESSIVELY WELL DRAINED	C/4
189D	CHATFIELD SANDY LOAM	15–25%	MODERATELY WELL DRAINED	B/3
189E	CHATFIELD SANDY LOAM	25–50%	MODERATELY WELL DRAINED	B/3
399A/RK	ROCK OUTCROP	0–3%		
399B/RK	ROCK OUTCROP	3–8%		
399C/RK	ROCK OUTCROP	8–15%		
399D/RK	ROCK OUTCROP	15–25%		
399E/RK	ROCK OUTCROP	25–50%		
399F/RK	ROCK OUTCROP	50%+		
550A	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	0–3%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550B	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	3–8%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550C	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	8–15%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550D	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	15–25%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550E	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	25–50%	SLOPES EXCESSIVELY WELL DRAINED	A/1
500A	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	0–3%	IMPERVIOUS	N/A
500B	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	3–8%	IMPERVIOUS	N/A
393A/VPD	TIMAKWA MUCKY PEAT	0–3%	VERY POORLY DRAINED	D/6

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOILS SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, PRODUCED BY A CERTIFIED SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCE CONSERVATION SERVICE. THERE IS A NARRATIVE REPORT THAT ACCOMPANIES THIS MAP AND MAP KEY. CYNTHIA BALCIUS, CSS OF STONEY RIDGE ENVIRONMENTAL LLC PERFORMED THE SOIL MAPPING ON SEPTEMBER 10, 2020.

SCS SOILS LEGEND

WdD	WINDSOR LOAMY SAND, 15–35% SLOPES
WnC	WINDSOR–URBAN LAND COMPLEX, 3–15% SLOPES
SOURCE	USDA–SCS WEB SOIL SURVEY

GRAPHIC SCALE

100 0 100 100 200 400

(IN FEET)
1 inch = 100 ft.

DIG SAFE
811 CALL TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

PRE-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERD'S HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

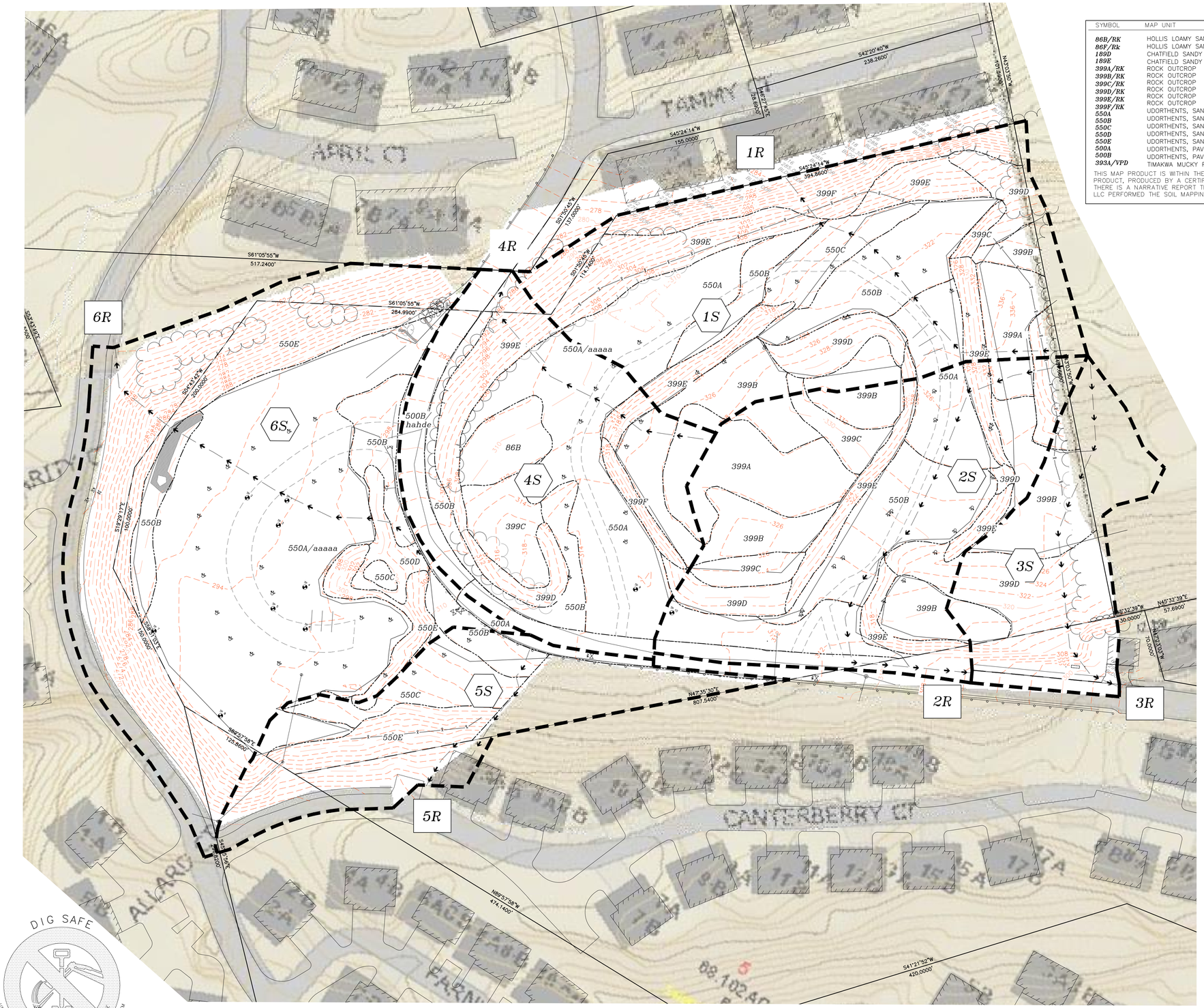
APPLICANT:
SHEPHERDS HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

KEACH–NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS

No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 | SCALE: 1" = 100'
PROJECT NO: 17-0824-1 | SHEET 1 OF 1



SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
86B/RK	HOLLIS LOAMY SAND	3–8%	EXCESSIVELY WELL DRAINED	C/4
86F/Rk	HOLLIS LOAMY SAND	50%+	EXCESSIVELY WELL DRAINED	C/4
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550A	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	0–3%	SLOPES EXCESSIVELY WELL DRAINED	A/1
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550E	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	25–50%	SLOPES EXCESSIVELY WELL DRAINED	A/1
500A	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	0–3%	IMPERVIOUS	N/A
500B	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	3–8%	IMPERVIOUS	N/A
393A/VPD	TIMAKWA MUCKY PEAT	0–3%	VERY POORLY DRAINED	D/6

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DRAINAGE LEGEND:

THE LEGEND BELOW REFLECTS THE HYDROCAD MODEL USED FOR DRAINAGE CALCULATIONS.

- SCS SOIL LINES
- SITE SPECIFIC SOIL LINES
- WnC — DENOTES SOIL TYPE
- P — DENOTES POND
- S — DENOTES SUBCATCHMENT AREA
- R — DENOTES REACH
- L — DENOTES POINT OF INTEREST
- LIMIT OF SUBCATCHMENT AREA
- TIME OF CONCENTRATION
- REACH

GRAPHIC SCALE

50 0 50 50 100 400

(IN FEET)
1 inch = 50 ft.

DIG SAFE
811 CALL TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

PRE-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:	APPLICANT:
SHEPHERD'S HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060

KEACH–NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS

No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 — SCALE: 1" = 50'
PROJECT NO: 17-0824-1 — SHEET 2 OF 6

DIG SAFE

811 CALL TOLL FREE

BEFORE YOU DIG IN MASSACHUSETTS

UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSG/GROUP
86B/RK	HOLLIS LOAMY SAND	3–8%	EXCESSIVELY WELL DRAINED	C/4
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393A/VPD	TIMAKWA MUCKY PEAT	0–3%	VERY POORLY DRAINED	D/6

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- SITE SPECIFIC SOIL LINES
- **WnC** DENOTES SOIL TYPE
- *P* DENOTES POND
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- *R* DENOTES REACH
- *L* DENOTES POINT OF INTEREST
- LIMIT OF SUBCATCHMENT AREA
- TIME OF CONCENTRATION
- REACH

GRAPHIC SCALE

50 0 50 50 100 400

(IN FEET)
1 inch = 50 ft.

PRE-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

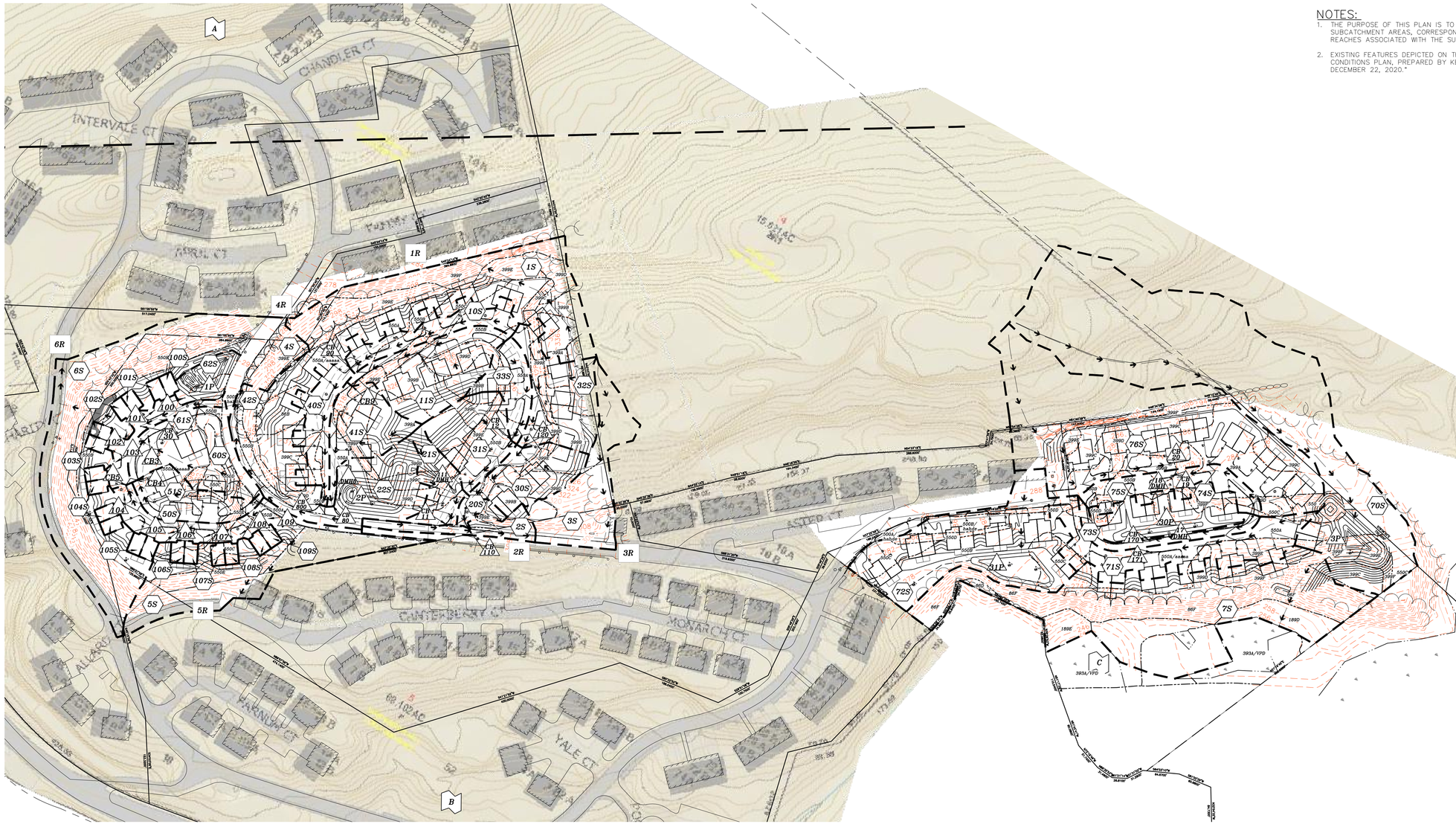
OWNER OF RECORD:	APPLICANT:
SHEPHERD'S HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060

KEACH–NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627–2881

REVISIONS

No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 SCALE: 1" = 50'
PROJECT NO: 17-0824-1 SHEET 3 OF 6



NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE VARIOUS STORMWATER SUBCATCHMENT AREAS, CORRESPONDING TIMES OF CONCENTRATION, PONDS, AND REACHES ASSOCIATED WITH THE SUBJECT PARCEL AFTER DEVELOPMENT.
2. EXISTING FEATURES DEPICTED ON THIS PLAN WERE TAKEN FROM "EXISTING CONDITIONS PLAN, PREPARED BY KEACH–NORDSTROM ASSOCIATES, INC. DATED DECEMBER 22, 2020."

DRAINAGE LEGEND:

THE LEGEND BELOW REFLECTS THE HYDROCAD MODEL USED FOR DRAINAGE CALCULATIONS.

- SCS SOIL LINES
- SITE SPECIFIC SOIL LINES
- WnC — DENOTES SOIL TYPE
- P — DENOTES POND
- S — DENOTES SUBCATCHMENT AREA
- R — DENOTES REACH
- L — DENOTES POINT OF INTEREST
- LIMIT OF SUBCATCHMENT AREA
- TIME OF CONCENTRATION
- REACH

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
86B/RK	HOLLIS LOAMY SAND	3–8%	EXCESSIVELY WELL DRAINED	C/4
86F/Rk	HOLLIS LOAMY SAND	50%+	EXCESSIVELY WELL DRAINED	C/4
189D	CHATFIELD SANDY LOAM	15–25%	MODERATELY WELL DRAINED	B/3
189E	CHATFIELD SANDY LOAM	25–50%	MODERATELY WELL DRAINED	B/3
399A/RK	ROCK OUTCROP	0–3%		
399B/RK	ROCK OUTCROP	3–8%		
399C/RK	ROCK OUTCROP	8–15%		
399D/RK	ROCK OUTCROP	15–25%		
399E/RK	ROCK OUTCROP	25–50%		
399F/RK	ROCK OUTCROP	50%+		
550A	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	0–3%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550B	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	3–8%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550C	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	8–15%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550D	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	15–25%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550E	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	25–50%	SLOPES EXCESSIVELY WELL DRAINED	A/1
500A	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	0–3%	IMPERVIOUS	N/A
500B	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	3–8%	IMPERVIOUS	N/A
393A/VPD	TIMAKWA MUCKY PEAT	0–3%	VERY POORLY DRAINED	D/6

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOILS SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, PRODUCED BY A CERTIFIED SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCE CONSERVATION SERVICE. THERE IS A NARRATIVE REPORT THAT ACCOMPANIES THIS MAP AND MAP KEY. CYNTHIA BALCIUS, CSS OF STONEY RIDGE ENVIRONMENTAL LLC PERFORMED THE SOIL MAPPING ON SEPTEMBER 10, 2020.

SCS SOILS LEGEND

WdD	WINDSOR LOAMY SAND, 15–35% SLOPES
WnC	WINDSOR–URBAN LAND COMPLEX, 3–15% SLOPES
SOURCE	USDA–SCS WEB SOIL SURVEY

GRAPHIC SCALE

100 0 100 100 200 400

(IN FEET)
1 inch = 100 ft.

DIG SAFE
IN MAINE, NH, VT, MA 811 CALL TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

POST-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERD'S HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

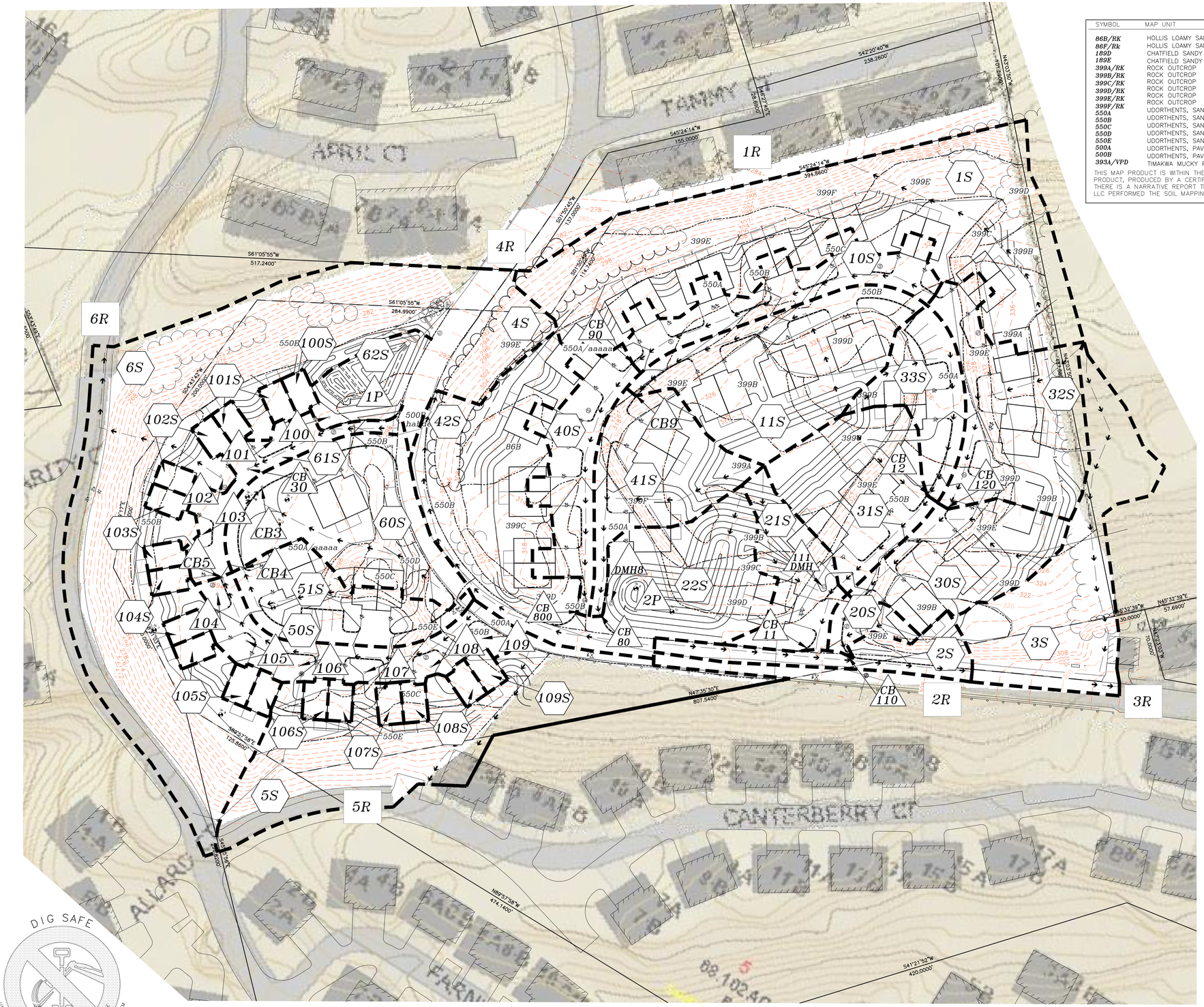
APPLICANT:
SHEPHERDS HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

KEACH–NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS

No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 SCALE: 1" = 100'
PROJECT NO: 17-0824-1 SHEET 4 OF 51



SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
86B/RK	HOLLIS LOAMY SAND	3–8%	EXCESSIVELY WELL DRAINED	C/4
86F/Rk	HOLLIS LOAMY SAND	50%+	EXCESSIVELY WELL DRAINED	C/4
189D	CHATFIELD SANDY LOAM	15–25%	MODERATELY WELL DRAINED	B/3
189E	CHATFIELD SANDY LOAM	25–50%	MODERATELY WELL DRAINED	B/3
399A/RK	ROCK OUTCROP	0–3%		
399B/RK	ROCK OUTCROP	3–8%		
399C/RK	ROCK OUTCROP	8–15%		
399D/RK	ROCK OUTCROP	15–25%		
399E/RK	ROCK OUTCROP	25–50%		
399F/RK	ROCK OUTCROP	50%+		
550A	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	0–3%	SLOPES EXCESSIVELY WELL DRAINED	A/1
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550D	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	15–25%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550E	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	25–50%	SLOPES EXCESSIVELY WELL DRAINED	A/1
500A	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	0–3%	IMPERVIOUS	N/A
500B	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	3–8%	IMPERVIOUS	N/A
393A/VPD	TIMAKWA MUCKY PEAT	0–3%	VERY POORLY DRAINED	D/6

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THE LEGEND BELOW REFLECTS THE HYDROCAD MODEL USED FOR DRAINAGE CALCULATIONS.

- SCS SOIL LINES
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- LIMIT OF SUBCATCHMENT AREA
- TIME OF CONCENTRATION
- REACH

GRAPHIC SCALE

50 0 50 50 100 400

(IN FEET)
1 inch = 50 ft.

DIG SAFE
811 CALL TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

POST-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
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C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

APPLICANT:
SHEPHERDS HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

KEACH–NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS

No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 SCALE: 1" = 50'
PROJECT NO: 17-0824-1 SHEET 5 OF 6

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
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399F/RK	ROCK OUTCROP	50%+		
550A	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	0–3%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550B	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	3–8%	SLOPES EXCESSIVELY WELL DRAINED	A/1
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500A	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	0–3%	IMPERVIOUS	N/A
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POST-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERD'S HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
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REVISIONS

No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 SCALE: 1" = 50'
PROJECT NO: 17-0824-1 SHEET 6 OF 6

DIG SAFE
811 CALL TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE VARIOUS STORMWATER SUBCATCHMENT AREAS, CORRESPONDING TIMES OF CONCENTRATION, PONDS, AND REACHES ASSOCIATED WITH THE SUBJECT PARCEL PRIOR TO DEVELOPMENT.
2. EXISTING FEATURES DEPICTED ON THIS PLAN WERE TAKEN FROM "EXISTING CONDITIONS PLAN, PREPARED BY KEACH-NORDSTROM ASSOCIATES, INC. DATED DECEMBER 22, 2020."

SOIL GROUP A
SOIL GROUP B
SOIL GROUP C
SOIL GROUP D
IMPERVIOUS AREA

DIG SAFE
811 CALL TOLL FREE
RI/ME/MA/VT/NH
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

DRAINAGE LEGEND:

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550E	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	25–50%	SLOPES EXCESSIVELY WELL DRAINED	A/1
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GRAPHIC SCALE

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(IN FEET)
1 inch = 100 ft.

PRE-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERD'S HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

APPLICANT:
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253 MAIN STREET
NASHUA, NH 03060

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REVISIONS

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DATE: MAY 2, 2022 SCALE: 1" = 100'
PROJECT NO: 17-0824-1 SHEET 1 OF 1

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
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PRE-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

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REVISIONS

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DATE: MAY 2, 2022 | SCALE: 1" = 50'
PROJECT NO: 17-0824-1 | SHEET 2 OF 6

DIG SAFE
811 CALL TOLL FREE
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
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GRAPHIC SCALE

50 0 50 50 100 400

(IN FEET)
1 inch = 50 ft.

PRE-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERD'S HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

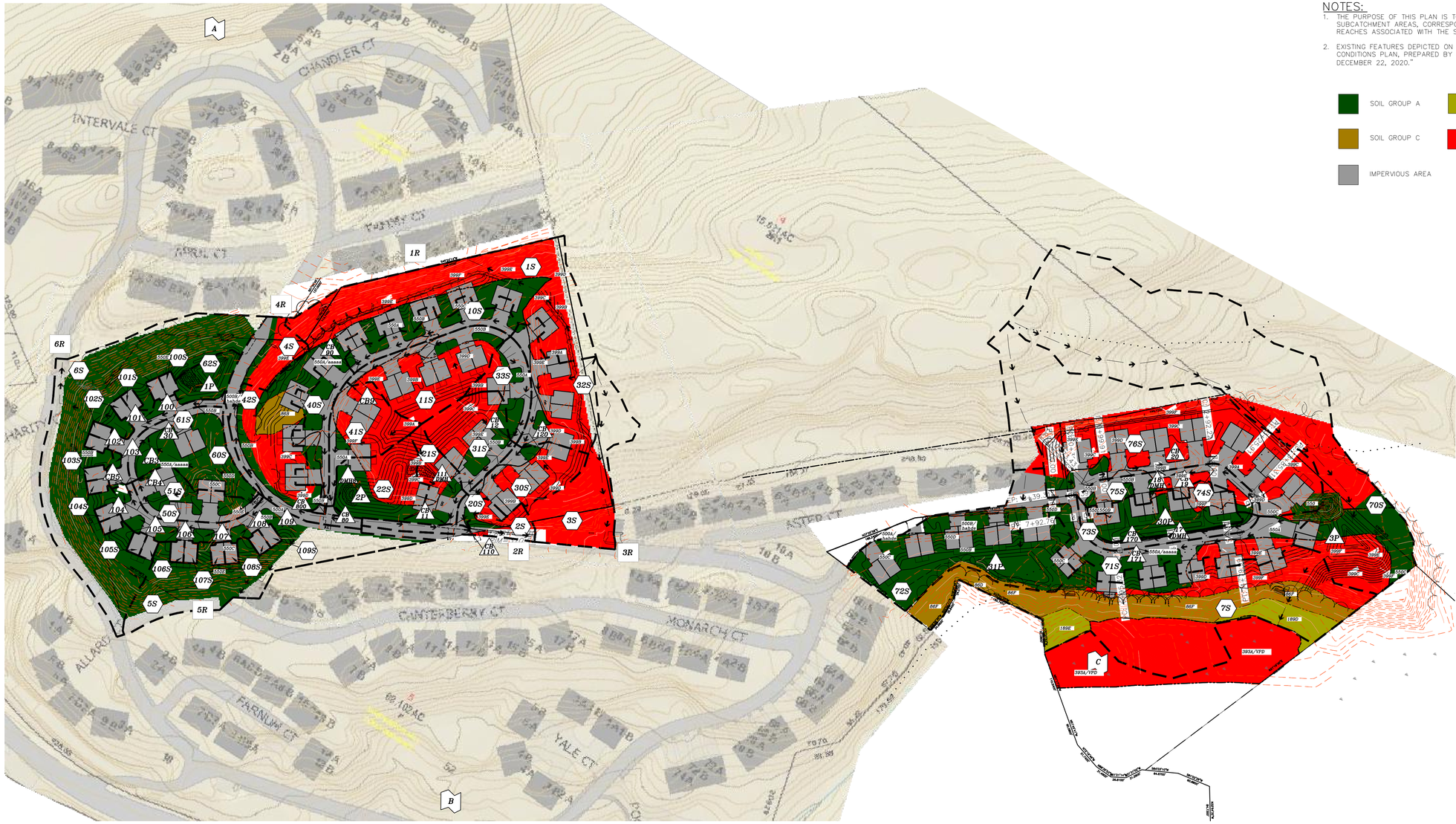
APPLICANT:
SHEPHERDS HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

KNA KEACH–NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS

No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 | SCALE: 1" = 80'
PROJECT NO: 17-0824-1 | SHEET 3 OF 6



NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE VARIOUS STORMWATER SUBCATCHMENT AREAS, CORRESPONDING TIMES OF CONCENTRATION, PONDS, AND REACHES ASSOCIATED WITH THE SUBJECT PARCEL AFTER DEVELOPMENT.
2. EXISTING FEATURES DEPICTED ON THIS PLAN WERE TAKEN FROM "EXISTING CONDITIONS PLAN, PREPARED BY KEACH–NORDSTROM ASSOCIATES, INC. DATED DECEMBER 22, 2020."

SOIL GROUP A
SOIL GROUP B
SOIL GROUP C
SOIL GROUP D
IMPERVIOUS AREA

DRAINAGE LEGEND:

THE LEGEND BELOW REFLECTS THE HYDROCAD MODEL USED FOR DRAINAGE CALCULATIONS.

- SCS SOIL LINES
- SITE SPECIFIC SOIL LINES
- WnC — DENOTES SOIL TYPE
- P — DENOTES POND
- S — DENOTES SUBCATCHMENT AREA
- R — DENOTES REACH
- L — DENOTES POINT OF INTEREST
- LIMIT OF SUBCATCHMENT AREA
- TIME OF CONCENTRATION
- REACH

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
86B/RK	HOLLIS LOAMY SAND	3–8%	EXCESSIVELY WELL DRAINED	C/4
86F/Rk	HOLLIS LOAMY SAND	50%+	EXCESSIVELY WELL DRAINED	C/4
189D	CHATFIELD SANDY LOAM	15–25%	MODERATELY WELL DRAINED	B/3
189E	CHATFIELD SANDY LOAM	25–50%	MODERATELY WELL DRAINED	B/3
399A/RK	ROCK OUTCROP	0–3%		
399B/RK	ROCK OUTCROP	3–8%		
399C/RK	ROCK OUTCROP	8–15%		
399D/RK	ROCK OUTCROP	15–25%		
399E/RK	ROCK OUTCROP	25–50%		
399F/RK	ROCK OUTCROP	50%+		
550A	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	0–3%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550B	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	3–8%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550C	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	8–15%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550D	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	15–25%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550E	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	25–50%	SLOPES EXCESSIVELY WELL DRAINED	A/1
500A	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	0–3%	IMPERVIOUS	N/A
500B	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	3–8%	IMPERVIOUS	N/A
393A/VPD	TIMAKWA MUCKY PEAT	0–3%	VERY POORLY DRAINED	D/6

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOILS SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, PRODUCED BY A CERTIFIED SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCE CONSERVATION SERVICE. THERE IS A NARRATIVE REPORT THAT ACCOMPANIES THIS MAP AND MAP KEY. CYNTHIA BALCIUS, CSS OF STONEY RIDGE ENVIRONMENTAL LLC PERFORMED THE SOIL MAPPING ON SEPTEMBER 10, 2020.

SCS SOILS LEGEND

WdD	WINDSOR LOAMY SAND, 15–35% SLOPES
WnC	WINDSOR–URBAN LAND COMPLEX, 3–15% SLOPES
SOURCE	USDA–SCS WEB SOIL SURVEY

GRAPHIC SCALE

100 0 100 100 200 400

(IN FEET)
1 inch = 100 ft.

DIG SAFE
811 CALL TOLL FREE
RI/ME/MA/VT/NH
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

POST-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

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REVISIONS

No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 SCALE: 1" = 100'
PROJECT NO: 17-0824-1 SHEET 4 OF 51

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
86B/RK	HOLLIS LOAMY SAND	3–8%	EXCESSIVELY WELL DRAINED	C/4
86F/Rk	HOLLIS LOAMY SAND	50%+	EXCESSIVELY WELL DRAINED	C/4
189D	CHATFIELD SANDY LOAM	15–25%	MODERATELY WELL DRAINED	B/3
189E	CHATFIELD SANDY LOAM	25–50%	MODERATELY WELL DRAINED	B/3
399A/RK	ROCK OUTCROP	0–3%		
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399E/RK	ROCK OUTCROP	25–50%		
399F/RK	ROCK OUTCROP	50%+		
550A	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	0–3%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550B	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	3–8%	SLOPES EXCESSIVELY WELL DRAINED	A/1
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550D	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	15–25%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550E	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/AAAAA	25–50%	SLOPES EXCESSIVELY WELL DRAINED	A/1
500A	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	0–3%	IMPERVIOUS	N/A
500B	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	3–8%	IMPERVIOUS	N/A
393A/VPD	TIMAKWA MUCKY PEAT	0–3%	VERY POORLY DRAINED	D/6

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THE LEGEND BELOW REFLECTS THE HYDROCAD MODEL USED FOR DRAINAGE CALCULATIONS.

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(IN FEET)
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POST-DEVELOPMENT DRAINAGE PLAN

SHEPHERD'S HILL

MAP 177 LOT 5
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REVISIONS

No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 SCALE: 1" = 50'
PROJECT NO: 17-0824-1 SHEET 5 OF 6

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ALL UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
86B/RK	HOLLIS LOAMY SAND	3–8%	EXCESSIVELY WELL DRAINED	C/4
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500A	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	0–3%	IMPERVIOUS	N/A
500B	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	3–8%	IMPERVIOUS	N/A
393A/VPD	TIMAKWA MUCKY PEAT	0–3%	VERY POORLY DRAINED	D/6

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PROJECT NO: 17-0824-1 SHEET 6 OF 6

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