



Stormwater Report In Support of

A Site Plan Approval Application, Special Permit Application and Notice of Intent Filing

for **Forest Ridge Drive** (Parcel ID # 7-10-5-1 & 7-10-5-8, 7-10-8 and 7-14) Rowley, MA

> Prepared By: Hancock Associates #26696

Prepared For: Gateway II Trust of 1997

> May 2023 Revised July 2023

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BOSTON, CHELMSFORD, DANVERS, MARLBOROUGH, NEWBURYPORT, PRINCETON, MA | SALEM, NH



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Introduction

Gateway II Trust of 1997 proposes to reduce the length of the existing roadway and construct a new 18,000 S.F. footprint industrial/warehousing building on the subject site on Forest Ridge Drive, Rowley, MA. Associated improvements will include paved vehicular and pedestrian areas, 89 parking spaces, landscaped areas, utility services, and additions to the existing stormwater management system. The project area is currently comprised of undeveloped land but is part of a partially completed industrial park.

The industrial park and drainage system were designed by Meridian Associates, Inc. (hereinafter "Meridian") While the entirety of the industrial park has not been constructed, the Best Management Practice (BMP's) of drainage system have been. The drainage system is comprised of deep sump catch basins and drain manholes connected to sediment forebays and infiltration basins, via a network of pipes. The discharge point for the project currently proposed is an infiltration basin called "Pond 3" in the Stormwater Analysis and Calculations for Forest Ridge (hereinafter "the Stormwater Analysis"), dated January 21, 2000, last revised March 15, 2006, by Meridian. This document was also used as the basis of this design.

The stormwater management system was designed to meet the Stormwater Management Standards described in the Massachusetts Stormwater Handbook. The following report describes how the proposed project remains in compliance with these standards.

July 2023 Revision

This report has been revised based on comments from a Peer Review conducted by H.L Graham Associates. Changes made are comprised of including the Stormwater Analysis by Meridian that references Pond 3 calculations, an annotated Post Development Drainage Plan outlining what has, and has not, been constructed and revised undeveloped areas based on As-Built surveys.

Standard 1: No New Untreated Discharges

The Massachusetts Stormwater Handbook states that no new stormwater conveyances may discharge untreated stormwater directly to or cause erosions in wetlands or waters of the Commonwealth. The existing infiltration basin (Pond 3) provides adequate treatment to meet this Standard.

Standard 2: Peak Rate Attenuation

The Massachusetts Stormwater Handbook states that stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. Infiltration basin Pond 3 is designed to reduce peak rates for the industrial park as a whole. Pond 3 was sized to mitigate runoff from 445,719 square feet of impervious area. The sum of impervious area that is still undeveloped equals 325,562 square feet. The currently proposed project will only consume a net of 35,395 square feet of the undeveloped impervious area. Therefore, following construction of the proposed project, there will only be 155,552 square feet of impervious area draining to Pond 3. Because the sum of impervious area routed to Pond 3 is lower than the area it was originally designed for, peak rates of runoff will be lower than originally designed.



Standard 3: Recharge

The Massachusetts Stormwater Handbook states that loss of annual recharge to groundwater shall be eliminated or minimized. The annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions based on soil type. Recharge volumes are provided for all of the proposed impervious areas.

The Stormwater Analysis by Meridian outlined the following Groundwater Recharge Calculations for the industrial park. These calculations have been updated to reflect current target depth factors:

Total Groundwater Recharge Required:	
336,930 square feet (impervious areas) x 0.05 (A-Soils)	= 16,847 cubic feet required
13,440 square feet (impervious areas) x 0.03 (B-Soils)	= 392 cubic feet required
426,530 square feet (impervious areas) x 0.02 (C-Soils)	= 8,886 cubic feet required
Total Required	= 26,125 cubic feet required

Total Groundwater Recharge Provided:

Detention/Infiltration Basin #2 is designed to recharge 24,900 cubic feet of stormwater runoff Detention/Infiltration Basin #3 is designed to recharge 50,200 cubic feet of stormwater runoff Detention/Infiltration Basin #100 is designed to recharge 2,145 cubic feet of stormwater runoff Total Provided = 77,245 cubic feet

The currently proposed project has a negligible change in impervious area from the previously proposed project. The provided recharge volume in Basin #3 (Pond 3) is 50,200 cubic feet and the required site recharge volume for the entire site is 26,125 cubic feet, nearly half of what is provided in Basin #3 alone. Therefore, the provided recharge volume greatly exceeds what is required, even after the currently proposed project is built.

Standard 4: Water Quality

The Massachusetts Stormwater Handbook states that systems shall be designed to remove 80% of the average annual post-development construction load of Total Suspended Solids (TSS). The treatment BMP's have been sized to provide at least 80% TSS removal and measures will be taken for long-term pollution prevention.

Stormwater runoff from impervious will be treated for at least 80% TSS removal via catch basins with deep sumps, sediment forebay and an infiltration basin sized for 1" over the proposed impervious areas. Infiltration Basin Pond 3 was designed to accommodate 1" over 445,719 square feet of impervious area, which equates to 36,844 cubic feet. Pond 3 has a provided storage of 50,200 cubic feet below the rim.

As mentioned previously, the sum of impervious area that is still undeveloped equals 325,562 square feet. The currently proposed project will only consume a net of 35,395 square feet of the undeveloped impervious area. Therefore, following construction of the proposed project, there will only be 155,552 square feet of impervious area draining to Pond 3.

Because the provided water quality volume is greater than the required water quality volume Standard 4 is met.

Standard 5: Land Uses with Higher Potential Pollutant Loads

The proposed project is not a Land Use with Higher Potential Pollutant Load (LUHPPL).



Standard 6: Critical Area

The proposed project is not within a Critical Area.

Standard 7: Redevelopment

The proposed project is not a redevelopment.

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

Best management practices (BMP) for erosion and sedimentation control are staked straw bales, filter fences, wattles, hydro seeding, and phased development. Many stormwater BMP technologies (e.g., infiltration technologies) are not designed to handle the high concentrations of sediments typically found in construction runoff and must be protected from construction-related sediment loadings. Construction BMP's <u>must</u> be maintained. In developing the proposed project certain measures will be implemented to minimize impacts erosion and sedimentation could have on surrounding areas. This section addresses items that involve proper construction techniques, close surveillance of workmanship, and immediate response to emergency situations. The developer must be prepared to provide whatever reasonable measures are necessary to protect the environment during construction and to stabilize all disturbed areas as soon as construction ends. Construction period pollution prevention and erosion and sediment control shall meet the requirements for the 2022 EPA Construction General Permit for all projects requiring coverage under the CGP.

Pre-Construction

- 1. The contractor shall have a stockpile of materials required to control erosion on-site to be used to supplement or repair erosion control devices. These materials shall include, but are not limited to straw bales, silt fence, wattles and crushed stone.
- 2. The contractor is responsible for erosion control on site and shall utilize erosion control measures where needed, regardless of whether the measures are specified on the plan or in the order of conditions.

Preliminary Site Work

- 1. Excavated materials should be stockpiled, separating the topsoil for future use on the site. Erosion control shall be utilized along the down slope side of the piles and side slopes shall not exceed 2:1.
- 2. If intense rainfall is anticipated, the installation of supplemental straw bale dikes, silt fences, or armored dikes shall be considered.
- 3. Unsuitable excavated material shall be removed from the site.
- 4. Construction entrance shall be installed.
- 5. Existing catch basins shall be protected with silt sacks.

Ongoing Site Work

- 1. Erosion control measures shall be regularly inspected and replaced as needed.
- 2. Dewatering shall be done in a manner so as not to transmit silt, sand or particulate matter to the receiving water or existing drainage system.

Landscaping

1. Landscaping shall occur as soon as possible to provide permanent stabilization of disturbed surfaces.



- 2. If the season or adverse weather conditions do not allow the establishment of vegetation, temporary mulching with straw, wood chips weighted with snow fence or branches, or other methods shall be provided.
- 3. A minimum of 4 inches of topsoil shall be placed and its surface smoothed to the specified grades.
- 4. The use of herbicides is strongly discouraged.
- 5. Hydro seeding is encouraged for steep slopes. Application rates on slopes greater than 3:1 shall have a minimum seeding rate of 5-lbs/1000 SF. A latex or fiber tackifier shall be used on these slopes at a minimum rate of 50 lbs. of tackifier per 500 gallons of water used.

Standard 9: Operations and Maintenance Plan

The information provided herein is intended to provide the base information for operation and maintenance of the site in perpetuity subject to updates and revisions as required at a future date. As such all future property owners must be notified in writing of this plan and be provided with a copy of this plan, a complete set of the design drawings and/or a completed as-built plan showing all the drainage features as they were constructed, which are considered part of this document. Please see the attached Operations and Maintenance Log (Appendix VII).

Stormwater management system owner:	Gateway II Trust of 1997
The party responsible for operation and maintenance:	Gateway II Trust of 1997

<u>Preliminary Stormwater Operation and Maintenance Budget</u> Quarterly Inspection and Maintenance x \$2,500 per visit = \$10,000 annually

Illicit Discharge - Practices to Minimize Storm Water Contamination

- All waste materials will be collected and stored in a securely lidded metal dumpster.
- All trash and debris from the site will be deposited in the dumpster. The dumpster will be emptied on a regular schedule prior to being over full.
- All personnel will be instructed regarding the correct procedure for waste disposal.
- Good housekeeping and spill control practices will be followed to minimize storm water contamination from petroleum products, paints, and cleaning products.
- All site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage.
- Spill kits will be provided with any activity that could provide contamination.
- All paint containers and curing compounds will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewers but will be properly disposed according to the manufacturer's instructions.
- All spills will be cleaned up immediately upon discovery. Spills large enough to reach the storm sewers will be reported to the Massachusetts Department of Environmental Protection Northeast Regional Office at 1-888-304-1133.

Deep Sump Hooded Catch Basins

Inspect deep sump catch basins four times per year including the end of the foliage and snow removal seasons. Sediments must also be removed four times per year or when the depth of deposits is greater than or equal to one half the depth of the sump. Vacuum trucks are to be used to remove trapped sediment and supernatant.

Although catch basin debris often contains concentrations of oil and hazardous materials such as petroleum hydrocarbons and metals, MassDEP classifies them as solid waste. Any contaminated materials must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.00, and



handled as hazardous waste. MassDEP regulations prohibit landfills from accepting materials that contain free draining liquids.

Infiltration Pond

The infiltration basins shall be inspected in early May and the second half of October. Any accumulated silt, trash, or debris shall be removed from the infiltration basins. Outlet control structures should be cleaned as required for proper function. Note any settlement or erosion around drainage inlets, stabilize any eroded areas. The discharge ponds shall be inspected for stability, erosion, siltation and obstructions. Any obstructions including any woody vegetation in the flow path shall be removed.

Roof Drain Leaders

Routine roof inspections shall be performed two times per year. The roof shall be kept clean and free of debris, and the roof drainage systems shall be kept clear. Gutters and downspouts shall be cleaned at least twice per year, or more frequently as necessary.

Vegetated Areas Maintenance

Although not a structural component of the drainage system, the maintenance of vegetated areas may affect the functioning of stormwater management practices. This includes the health/density of vegetative cover and activities such as the application and disposal of lawn and garden care products, disposal of leaves and yard trimmings.

Initial Post-Construction Inspection

During the initial period of vegetation establishment pruning and weeding are required twice in first year by contractor or owner. Any dead vegetation/plantings found after the first year will be replaced. Proper mulching is mandatory and regular watering may be required initially to ensure proper establishment of new vegetation.

Long-Term Maintenance

The planted areas shall be inspected on a semi-annual basis and any litter removed. Weeds and invasive plant species shall be removed by hand. Maintain planted areas adjacent to pavement to prevent soil washout. Immediately clean any soil deposits on pavement. Leaf litter and other detritus shall be removed twice per year. If needed to maintain aesthetic appearance, perennial plantings may be trimmed at the end of the growing season.

Trees and shrubs shall be inspected twice per year to evaluate health and attended to as necessary. Seeded ground cover or grass areas shall not receive mulching. Re-seed bare areas; install appropriate erosion control measures when native soil is exposed or erosion channels are forming. Plant alternative mixtures of grass species in the event of unsuccessful establishment. The grass vegetation should not be cut to a height less than four inches.

Pesticide/Herbicide Usage

No pesticides are to be used unless a single spot treatment is required for a specific control application.

Standard 10: Prohibition of Illicit Discharges

No illicit discharges currently exist and no future illicit discharges will be allowed including wastewater discharges and discharges of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, soil, or grease.

Appendix I Locus Map



Appendix II Stormwater Checklist



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands Program Checklist for Stormwater Report

A. Introduction

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



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

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

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

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

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

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

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



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands Program Checklist for Stormwater Report

B. Stormwater Checklist and Certification

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

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

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

Registered Professional Engineer's Certification

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

Registered Professional Engineer Block and Signature



Checklist

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

- New development
- Redevelopment
- Mix of New Development and Redevelopment



Checklist (continued)

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

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

 \boxtimes No new untreated discharges

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



Checklist (continued)

Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

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

Standard 3: Recharge

Soil Analysis provided.

- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.

Static	Simple Dynamic
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Dynamic Field¹

- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

Property	includes a	M.G.L. c	. 21E site	or a solic	waste la	ndfill and a	a mounding	analysis	is included.

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



Checklist (continued)

Standard 3: Recharge (continued)

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

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

Standard 4: Water Quality

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

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
- Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - involves runoff from land uses with higher potential pollutant loads.
- The Required Water Quality Volume is reduced through use of the LID site Design Credits.
- Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist (continued)
Standard 4: Water Quality (continued)
\boxtimes The BMP is sized (and calculations provided) based on:
\boxtimes The ½" or 1" Water Quality Volume or
The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.
Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)
 The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report. The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted <i>prior to</i> the discharge of stormwater to the post-construction stormwater BMPs.
The NPDES Multi-Sector General Permit does <i>not</i> cover the land use.
LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
All exposure has been eliminated.
All exposure has <i>not</i> been eliminated and all BMPs selected are on MassDEP LUHPPL list.
The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Checklist (continued)

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

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

Limited Proje	ect
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- Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- Bike Path and/or Foot Path
- Redevelopment Project
- Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

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

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

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

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

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



Checklist (continued)

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

- ☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has *not* been included in the Stormwater Report but will be submitted *before* land disturbance begins.
- The project is *not* covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted *prior to* the discharge of any stormwater to post-construction BMPs.

Appendix III Operations and Maintenance Log



Forest Ridge Drive

Operations and Maintenance Log Inspections for Year:_____

Structural Best Management Practice	Action	Date Completed	Completed By	Comments
Deep Sump Hooded Catch Basin–	Inspect/ Clean			
Inspect/clean four times per year. Clean when	Inspect/ Clean			
sump is 50% full.	Inspect/ Clean			
	Inspect/ Clean			
	Inspect/ Clean			
Infiltration Pond and Sediment Forebay–	Inspect			
Inspect twice per year. Clean as required	Inspect			
Roof Drain Leaders – Inspect/clean twice per	Inspect/Clean			
year.	Inspect/Clean			
Vegetated Areas Maintenance – Inspect	Inspect			
twice per year. Maintain as required.	Inspect			

Appendix IV Stormwater Analysis and Calculations (Meridian Associates)

STORMWATER ANALYSIS AND CALCULATIONS for FOREST RIDGE located at ASSESSOR'S MAP 7, LOTS 7, 8, 9, 10A, 10-2, 10-8-1 ROWLEY, MASSACHUSETTS

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RECEIVED



MAR 3 0 2006

TOWN OF ROWLEY CONSERVATION COMMISSION

Applicant/Owner:

Mr. John Coughlin Gateway II Trust of 1997 239 Western Avenue Essex, Massachusetts 01929

Prepared by:

Meridian Associates, Inc. 152 Conant Street Beverly, Massachusetts 01915 (978) 299-0447

January 21, 2000 (Revised: April 20, 2000) (Revised: May 24, 2000) (Revised: October 4, 2005) (Revised: March 15, 2006)

TABLE OF CONTENTS

Calculation Methods

Source of Data

Report Summary:

- * Calculation Objectives
- * Selection of Storm Events
- * Classification of Soils
- * Existing Conditions Overview
- * Proposed Conditions Overview
- * Performance of Stormwater Management Facilities
- * Performance of Peak Rate Runoff
- * Summary of Peak Volume Runoffs
- * Stormwater Management (BMP's)
- * Conclusion

Stormwater Analysis: *

- **Existing Conditions**
 - Watershed Routing Diagram
 - 1-Year 24-Hour Storm Event Analysis
 - 2-Year 24-Hour Storm Event Analysis
 - 10-Year 24-Hour Storm Event Analysis
 - 100-Year 24-Hour Storm Event Analysis
- Proposed Conditions
 - Watershed Routing Diagram
 - 1-Year 24-Hour Storm Event Analysis
 - 2-Year 24-Hour Storm Event Analysis
 - 10-Year 24-Hour Storm Event Analysis
 - 100-Year 24-Hour Storm Event Analysis
- * Sizing of Drainage Pipes (100 Year Analysis)
- * Stormwater Treatment Calculations
- * Sediment Trap (Forebay) Calculations
- * Groundwater Recharge Calculations
- * Infiltration Basin Exfiltration Calculations
- * Exfiltration Calculations
- * Sizing of Catch Basin Grates (100-Year Storm Event)

Appendix:

- * Inspection & Maintenance Program
- * Existing Drainage Basin Plan
- Proposed Drainage Basin Plan
- * Stormwater Management Form
- * TSS Removal Worksheet

CALCULATION METHODS

- TR 20 SCS Unit Hydrograph Procedure
- Runoff Curve Numbers

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- Time of Concentration by TR55 Methodology
- Reach and Pond Rating by the Storage-Indication Method
- Manning Equation

SOURCE OF DATA

- Technical Report No. 20
- Technical Report No. 55
- Technical Paper No. 40
- Partial Field survey by MEI

REPORT SUMMARY:

CALCULATION OBJECTIVES:

The purpose of this drainage analysis is to design a stormwater management system that will both; lower pollutant loads in the stormwater runoff before final discharge, and reduce the peak flow of post construction drainage below the existing conditions peak flow at selected design points. Drainage maps have been incorporated into this report to depict existing and proposed watershed areas and subcatchments for the site.

October 4, 2005 Revision

This development was originally approved by the Rowley Planning Board and Conservation Commission in June of 2000. The roadway, utilities and stormwater management system were completed by the summer of 2001. Since then a 20,000 s.f. building with parking and utilities has been constructed on Lot 4. Also, a 15,000 s.f. building with parking and utilities is currently under construction on Lot 4.

The applicant is proposing a more intensive development for the remaining lots. This drainage analysis was prepared to address this more intensive use. For this analysis, predevelopment conditions are compared with the final proposed conditions for the entire site. The interim conditions as they exist now were not compared.

March 15, 2006 Revision

Site hydrology was revised to reflect significant reductions in impervious surfaces. The amount of retail space proposed was reduced as well as consideration of actual parking needs for industrial/warehouse facilities, which reduced the number of proposed parking spaces. With the reduction in impervious surfaces, proposed Ponds #4 and #6 were able to be eliminated from the October 4, 2005 revised design. This design was also revised to provide both the rate and volume of runoff closer to pre-conditions. Revisions include adjusting the outlet control structures in the existing stormwater management facilities, as well as redirecting roof runoff from some of the proposed buildings to areas that showed reductions in predicted flows.

SELECTION OF STORM EVENTS:

The storm events have been compiled from the Soil Conservation Service Technical Report No. 55 and the U.S. Department of Commerce Technical Paper No. 40. Rainfall frequency data has been provided as follows:

Frequency (Years)	Rainfall [24 hour event (inches)]		
1	2.5"		
2	3.1"		
10	4.5"		
100	6.5"		

CLASSIFICATION OF SOILS:

Based on soil testing by MEI and Natural Resource Conservation Service Maps dated May 1984, the existing soil conditions within the limits of the watershed have been categorized as CbC (Canton Very Stony Fine Sandy Loam, 8-15% Slopes), CbD (Canton Very Stony Fine Sandy Loam, 15 to 25% Slopes), De (Deerfield Loamy Fine Sand), HfB (Hinkley Loamy Sand, 3 to 8% Slopes), HfC (Hinkley Loamy Sand, 8 to 15% Slopes), HWE (Hinkley and Windsor Loamy Sands, Steep), MD (Medisaprists, Shallow), PbC (Paxton Very Stony Fine Sandy Loam, 8 to 15% Slopes), PcD (Paxton Extremely Stony Fine Sandy Loam, 15 to 25%), PcE (Paxton Extremely Stony Fine Sandy Loam, 25 to 45% Slopes), Pg (Pits, Gravel), RIB (Ridgebury and Leicester Extremely Stony Fine Sandy Loams, 3 to 8% Slopes), Se (Scarboro Mucky Fine Sandy Loam), WeA (Wareham Loamy Sand, 0 to 3% Slopes), WeB (Wareham Loamy Sand, 3 to 8% Slopes), WhA (Windsor Loamy Sand, 0 to 3% Slopes), WhB (Windsor Loamy Sand, 3 to 8% Slopes), and are a mix between Hydrologic Group A and C, with a small area consisting of Hydrologic Group B (westerly portion of site).

PRE-DEVELOPMENT CONDITIONS OVERVIEW:

The site is located on Newburyport Turnpike (U.S. Route 1) in Rowley, Massachusetts and is depicted on Assessor's map 7 as Lots 9, 10A, 10-2, 10-5, and 10-8. A portion of the site $(5.4\pm ac.)$ is currently degraded and stripped of top soil/loam due to earlier use as a gravel pit. The remainder of the site is wooded areas in good conditions with gravel paths throughout and wetlands at the low-lying areas of the property. For existing conditions drainage study the site was divided into six (6) drainage areas (to more accurately analyze drainage effects on abutting properties) with corresponding design points as depicted on the pre conditions drainage plan.

Design Points:

(See Pre Development Plans)

Design Point #1:	Stormwater from Subcatchment #1 flows overland to the south through wooded areas into a "channel wetland system" and continues to Design Point #1 (wetlands southerly portion of site). Stormwater From Subcatchment #6 is woods, buildings, pavement and grass, which is over land flow through wooded areas and wetland to Design Point #1.
Design Point #2:	Stormwater from Subcatchment #2 flows overland through wooded areas to Design Point #2 (existing wetlands northwesterly portion of site).
Design Point #3:	Stormwater from Subcatchment #3 flows overland through wooded areas into a "channel wetland system" and then to Design Point #3 (easterly portion of site).

Design Point #4: Stormwater from Subcatchment #4 flows overland through wooded areas to Design Point #4 (easterly portion of site).

Design Point #5: Stormwater from Subcatchment #5 flows overland through wooded areas to Design Point #5 (easterly portion of site).

PROPOSED CONDITIONS OVERVIEW:

This project will include construction of a subdivision, which will consist of retail and industrial buildings totaling about $355,000\pm$ S.F. gross floor area, parking lots, subsurface sewage disposal systems, a 2,200' roadway and associated utilities and grading.

The proposed conditions have been divided into 53 subcatchments. Runoff from each subcatchment is collected by catch basins then through underground piping into the constructed wetlands and infiltration basins or flows directly to infiltration basins or to Design Point #10, 20, 30, 40, and 50 which corresponds to Design Point #1, 2, 3, 4, and 5 referenced in the existing conditions above.

DESIGN POINTS:

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Design Point 10 (Southerly portion of the Site):

Subcatchment #18, 19, 21-26, 33, 70-74, 77-90, 94 – Stormwater from these subcatchments is overland to catch basins with 4' sumps and underground piping then into sediment trap (Forebay) which will allow solids to settle and then stormwater will flow into Detention/Infiltration Basin #2 and then to Design Point #10.

Subcatchment #11, 12, 13, 14, 16, 17, 36, 37, 39, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 61, 62, 63, 64-69 – Stormwater from these subcatchments is overland to catch basins with 4' sumps and underground piping then into sediment trap (Forebay) which will allow solids to settle and then stormwater will flow into Detention/Infiltration Basin #3 and then to Design Point #10.

Subcatchment 28, 29, 31, 32, 34, 59, 60, 91, 92 – Stormwater from these subcatchments will flow overland into catch basins with 4' sumps then it is piped to Constructed Wetland Basin #1 once solids settle the stormwater will be released through a 4" perforated PVC riser to Design Point #10.

Subcatchment #35 - Overland flow from proposed development on Lot 4 (building and parking lot) and grass and wooded areas to Detention/Infiltration Basin #3 then to Design Point #10.

Subcatchment #10 – Overland flow from wooded, wetland, and grass areas which flows to Design Point #10.

Design Point #20:

Stormwater from Subcatchment #20 flows overland through wooded areas to Design Point #20 (existing wetlands northwesterly portion of site).

Design Point #30:

Stormwater from Subcatchment #30 flows overland through wooded areas into a "channel wetland system" and then to Design Point #30 (easterly portion of site).

Design Point #40:

Stormwater from Subcatchment #40 flows overland through wooded areas to Design Point #40 (easterly portion of site).

Design Point #50:

Stormwater from Subcatchment #50 flows overland through wooded areas to Design Point #50 (easterly portion of site).

STORMWATER MANAGEMENT FACILITIES:

Detention Basin #1 (Constructed Wetland Basin):

Detention Basin #1 will have a storage capacity of 4,815 C.F. (100-year storm event) and includes a 4" perforated PVC riser for the outlet of stormwater and a 15' wide broad crested weir (see pond detail on detail sheet). The basin is designed to contain, treat the first 1" of runoff from impervious surfaces, which drain to this basin, and to assist in mitigation for potential increase in the rates of runoff for the 1, 2, 10, and 100-year storm events.

PERFORMANCE OF STORMWATER MANAGEMENT FACILITIES

Constructed Wetland Basin #1

Bottom Elevation: = 61.8 Top Elevation: = 64.0

Storm Event	Peak InFlow (CFS)	Peak Outflow (CFS)	Peak Storage <u>(CF)</u>	Peak Elevation <u>(FT)</u>
1-Year	1.4	0.0	3,521	63.0
2-Year	1.9	0.0	3,758	63.1
10-Year	3.6	0.1	4,322	63.2
100-Year	6.3	0.1	4,819	63.4

Detention Basin #2 (Infiltration Basin):

Detention Basin #2 will have a storage capacity of 59,838 C.F. (100-year storm) and includes an outlet control structure with a 1' x 5' orifice and trash rack (see outlet structure detail on detail sheet). The orifice is set at an elevation to contain, treat and recharge the first 1" of runoff from impervious surfaces flowing to this basin. The detention basin is designed to mitigate for potential increase in the rates of runoff for the 1, 2, 10, and 100-year storm events. Pretreatment includes deep sump catch basins and a sediment forebay.

Detention/Infiltration Basin #2

Bottom Elevation: = 66.5 Top Elevation: = 70.0

Storm Event	Peak InFlow <u>(CFS)</u>	Peak Outflow (CFS)	Peak Storage <u>(CF)</u>	Peak Elevation <u>(FT)</u>	
1-Year	8.9	0.0	6,273	66.8	
2-Year	13.0	0.0	12,508	67.1	
10-Year	24.0	0.5	31,142	68.0	
100-Year	38.5	2.5	59,838	69.0	

Detention Basin #3 (Infiltration Basin):

Detention Basin #3 will have a storage capacity of 88,685 C.F. (100-year storm) and includes an outlet control structure with a 5' x 1.2' orifice and trash rack (see outlet structure detail on detail sheet). The orifice is set at an elevation to contain, treat and recharge the first 1" of runoff from impervious surfaces that flow to this basin. The detention basin is designed to mitigate for potential increase in the rates of runoff for the 1, 2, 10, and 100-year storm events. Pretreatment includes deep sump catch basins and a sediment forebay.

Detention/Infiltration Basin #3

Bottom Elevation: = 69.5 Top Elevation: = 73.0

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Storm Event	Peak InFlow (CFS)	Peak Outflow <u>(CFS)</u>	Peak Storage <u>(CF)</u>	Peak Elevation <u>(FT)</u>	
1-Year	18.8	0.0	20,817	70.1	
2-Year	25.4	0.0	32,708	70.4	
10-Year	41.3	2.4	60,762	71.1	
100-Year	64.4	15.7	88,685	71.8	

Detention/Infiltration Basin #100 (Infiltration Basin):

Detention Basin #100 is comprised of Cultec Recharger 330 infiltration chambers. It will have a storage capacity of 2,674 C.F. (100-year storm) and includes 6-4" outlets. This basin is designed to mitigate for potential increase in the rates of runoff for the 1, 2, 10, and 100-year storm events. Pretreatment will include deep sump catch basins and a stormceptor unit.

Detention/Infiltration Basin #100

Bottom Elevation: = 63.2 Top Elevation: = 66.2

Storm Event	Peak InFlow <u>(CFS)</u>	Peak Outflow (CFS)	Peak Storage <u>(CF)</u>	Peak Elevation <u>(FT)</u>
1-Year	0.7	0.0	149	63.7
2-Year	1.0	0.0	414	63.9
10-Year	1.7	0.0	1,301	64.6
100-Year	2.6	0.3	2,674	66.0

SUMMARY OF PEAK RATE RUNOFFS:

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The table below outlines what the predicted peak stormwater flows from the site, comparing the existing with the proposed condition.

	Design <u>Point #1/10</u>	Design <u>Point #2/20</u>	Design <u>Point #3/30</u>	Design <u>Point #4/40</u>	Design <u>Point #5/50</u>
1-Year: Existing	.7 CFS	1.6 CFS	1.6 CFS	0	0
Proposed	.1 CFS	1.5 CFS	1.4 CFS	0	0
2-Year: Existing	3.7 CFS	3.0 CFS	3.7 CFS	0	0
Proposed	0.9 CFS	2.8 CFS	2.9 CFS	0	0
10-Year: Existing	19.2 CFS	7.0 CFS	10.9 CFS	0	0
Proposed	7.8 CFS	6.5 CFS	7.4 CFS	0	0
100-Year: Existing	55.1 CFS	13.6 CFS	23.7 CFS	0	6 CFS
Proposed	34.5 CFS	12.6 CFS	15.2 CFS	0	0

SUMMARY OF PEAK VOLUME RUNOFF:

The table below illustrates what the predicted stormwater volume from the site will be comparing the existing with the proposed conditions.

	Design <u>Point #1/10</u>	Design <u>Point #2/20</u>	Design <u>Point #3/30</u>	Design <u>Point #4/40</u>	Design <u>Point #5/50</u>
1-Year: Existing	.4 AF	.2 AF	.3 AF	0	0
Proposed	.1 AF	0.2 AF	0.2 AF	0	0
2-Year: Existing	.9 AF	.3 AF	.5 AF	0	0
Proposed	0.3 AF	0.3 AF	0.3 AF	0	0
10-Year: Existing	2.8 AF	0.7 AF	1.2 AF	0	0
Proposed	1.4 AF	0.7 AF	0.8 AF	0	0
100-Year: Existing	6.7 AF	1.3 AF	2.5 AF	0	0.1 AF
Proposed	5.0 AF	1.2 AF	1.6 AF	0	0

STORMWATER MANAGEMENT (BMP'S):

The Department of Environmental Protection's Stormwater Management Policy requires mitigation not only for stormwater quantity (as discussed above) but also to stormwater quality. This policy requires removal of a minimum of 80% of Total Suspended Solids (TSS). To achieve the standards required by the policy, a number of Best Management Practices (BMP's) have been incorporated into the design of this project. These BMP's will remove the required 80% Total Suspended Solids (TSS) that would typically be found in the stormwater runoff from the proposed project. The removal of TSS mitigates potential impacts to the stormwater quality. The proposed BMP's are as follows:

Deep Sump Catch Basins

Similar to an ordinary catch basin but fitted with a PVC "T" outlet to promote separation of floatables such as oil, grease, trash and debris, they also have a four foot deep sump that acts as a small retention system and promotes the settling of suspended solids. A TSS removal rate of 25% is achieved by this BMP.

Sediment Trap (Forebay)

The sediment traps (forebays) are constructed basins designed to temporarily hold stormwater runoff and settle suspended solids. The TSS Removal Rate for this BMP is 25%.

Detention/Infiltration Basin

This BMP is included in the design in order to meet the groundwater recharge and stormwater treatment requirement of the Stormwater Management Policy. The TSS removal rate for this BMP is 80%.

Constructed Stormwater Wetland Basin

This BMP is included in the design in order to meet the stormwater treatment requirement of the Stormwater Management Policy and to reduce peak flows. The TSS removal rate for this BMP is 80%.

CONCLUSION:

The calculations indicate a decrease in the rate of runoff, as well as a reduction in runoff volume for the 2-year, 10-year and 100-year 24-hour storm events. From this, together with use of a TSS Removal Rate greater than 80% utilizing the BMP's described above, it can be predicted that the construction of the project will result in no adverse impacts to the stormwater quantity or quality flowing from the site.

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EXISTING CONDITIONS

WATERSHED ROUTING DIAGRAM



EXISTING CONDITIONS 1-YEAR 24-HOUR STORM EVENT ANALYSIS
3250 pre conditions rev 4-18-00 Prepared by Meridian Engineering, Inc. HydroCAD® 7.00 s/n 000814 © 1986-2003 Applied Microcomputer Systems

3/14/2006

Subcatchment 1S: OVERLAND FLOW TO DP 1

Runoff = 0.4 cts @ 13.94 hrs, Volume= 0.27 af, Depth=	0.08"	
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

_	Area (ac)	CN	Description	
	16.330	30	WOODS GOOD COND GROUP A	
	2.670	55	WOODS GOOD COND GROUP B	
	14.320	70	WOODS GOOD COND GROUP C	
	0.460	76	GRAVEL PATH GROUP A	
	0.250	89	GRAVEL PATH GROUP C	
	0.310	98	RTE 1/HSE/DRIVE	
	0.740	98	WETLANDS	
	3.810	86	STRIPPED	
	38.890	55	Weighted Average	

(min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	100	0.0200	0.1		Sheet Flow, SHEET FLOW
0.8	333	0.1800	6.8		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
1.1	805	0.0630	11.7	385.02	Unpaved Kv= 16.1 fps Channel Flow, CHANNEL FLOW THRU WETLANDS Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.020
23.7	1 220	Total	1		0.01 IC ICIN 00.0 I 0.01 IC 0.030

Subcatchment 2S: OVERLAND FLOW TO DP 2

Runoff = 1.6 cfs @ 12.26 hrs, Volume= 0.20 af, Depth= 0.49"

Area	(ac)	CN	Desc	ription		
0	.040	98	WET	LANDS		
3	.870	70	WOO	DDS GOOI	COND G	ROUPC
0	.800	74	GRA	SS GOOD	COND GR	OUPC
0.	.150	89	GRA	VEL PATH	I GROUP	
4.	.860	71	Weig	ted Aver	age	
Tc (min)	Lengt (feet	h t)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	10	0	0.0500	0.1		Sheet Flow, SHEET FLOW
1.6	58	3	0.1370	6.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps
16.7	683	3	Total		-	

Subcatchment 3S: OVERLAND FLOW TO DP 3

Runoff = 1.6 cfs @ 12.39 hrs, Volume= 0.27 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac) CN	Desc	ription		
7.60	0 70	WOO	DDS GOOI	COND G	ROUPC
0.68	0 74	GRA	SS GOOD	COND GR	OUPC
0.21	0 89	GRA	VEL PATH	I GROUP C	
0.41	98	WET	LANDS		
1.85	0 30	WOO	DDS GOOI	COND GI	ROUP A
0.17) 76	GRA	VEL PATH	I GROUP A	
10.92) 65	Weig	hted Aver	age	
Tc L	ength	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
15.1	100	0.0500	0.1		Sheet Flow, SHEET FLOW
					Woods: Light underbrush n= 0.400 P2= 3.10"
1.9	615	0.1070	5.3		Shallow Concentrated Flow, CONCENTRATED FLOW
					Hannand Kan 161 (ma
					Onpaved Kv= 16.1 rps
1.4	838	0.0480	10.2	336.08	Channel Flow, CHANNEL FLOW THRU WETLANDS

18.4 1,553 Total

Subcatchment 4S: OVERLAND FLOW TO DP 4

Runoff	=	0.0 cfs @	5.00 hrs,	Volume=	0.00 af,	Depth= 0.00
Kunoff	=	U.U CIS	5.00 nrs,	volume=	0.00 af,	Deptn = 0.00

Area	(ac) C	CN	Desc	ription	Sector Sector				
0.200		39	GRA	ASS/FIELD GROUP A					
0.	.510	30 34	Weig	hted Aver	age	ROUPA			
Tc (min)	Lengtl (feet	h :)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
9.1	10	0	0.1800	0.2		Sheet Flow, SHEET FLOW Woods: Light underbrush n= 0.400 P2= 3.10"			
0.2	6	5	0.2000	7.2		Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps			
9.3	16	5	Total						

Prepared by Meridian Engineering, Inc. HydroCAD® 7.00 s/n 000814 © 1986-2003 Applied Microcomputer Systems

Subcatchment 5S: OVERLAND FLOW TO DP 5

Runoff = $0.0 \text{ cfs} @ 5.00 \text{ hrs}$, Volume= $0.0 \text{ cfs} @ 5.00 $	00 af, Depth= 0.00"
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area	(ac)	CN	Desc	ription	-				
1.470 39 GRA			SS/FIELD	GROUP A					
0.150 76 GRAVEL PATH GROUP				VEL PATH	H GROUP	A			
1.050 30 W			WOO	WOODS GOOD COND GROUP A					
2	.670	38	Weig	ted Aver	age				
Tc (min)	Leng (fee	th et)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
10.7	10	00	0.1200	0.2		Sheet Flow, SHEET FLOW Woods: Light underbrush n= 0.400 P2= 3.10"			
1.8	49	90	0.0780	4.5		Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps			
		1	111 × 1						

12.5 590 Total

Subcatchment 6S: OVERLAND FLOW TO DP 6

Runoff = 0.5 cfs @ 12.36 hrs, Volume= 0.09 af, Depth= 0.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area	(ac)	CN	Desc	ription		
0	.050	89	GRA	VEL PATH	H GROUP	2
0	.200	76	GRA	VEL PATH	H/DRIVE C	GROUP A
1	.660	86	STRI	PPED ARE	EAS	
0	.290	39	GRA	SS GOOD	COND GR	OUP A
1	.270	30	WOO	DDS GROU	JP A	
0	.330	98	EXIS	T. DWELL	ING/PAVI	E/RTE 1
3	.800	64	Weig	hted Aver	age	
Tc (min)	Lenş (fe	gth et)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	1	00	0.0800	0.1		Sheet Flow, SHEET FLOW
						Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	4	14	0.1100	5.3		Shallow Concentrated Flow, CONCENTRATED FLOW
						Unpaved Kv= 16.1 fps
0.9	1	70	0.0050	3.1	56.35	Channel Flow, Segment ID:
						Area= 18.0 sf Perim= 21.3' $r= 0.85' n= 0.030$

14.7 684 Total

3/14/2006

Subcatchment 99s: Watershed into wetlands

$Kunon - 55.7 \text{ cis} \oplus 12.92 \text{ hrs, volume} = 14.40 \text{ ar, Deptn} = 0.1232 \text{ hrs, volume} = 14.40 \text{ ar, Deptn} = 14.40 $	Runoff		53.7 cfs @	12.92 hrs,	Volume=	14.40 af, Depth= 0.	30"
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area	(ac) CN	J Desc	ription	-	
580.	.730 65	5 aver	age area &	CN (see wo	orksheet)
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0500	0.1		Sheet Flow,
10.8	740	0.0050	1.1		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, Unpaved Ky= 16.1 fps
26.9	5,300	0.0050	3.3	108.47	Channel Flow,
1.1					Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.030
52.8	6,140	Total			

Reach 1R: DESIGN POINT 1

Inflow An	rea =	42.690 ac	, Inflow Depth = 0.10°	for 1-yr event
Inflow	=	0.7 cfs @	12.81 hrs, Volume=	0.35 af
Outflow	=	0.7 cfs @	12.81 hrs, Volume=	0.35 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.7 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.9 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.13' @ 12.81 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 60R: FLOW TO R61

 Inflow Area =
 3.800 ac, Inflow Depth = 0.27" for 1-yr event

 Inflow =
 0.5 cfs @ 12.36 hrs, Volume=
 0.09 af

 Outflow =
 0.4 cfs @ 12.71 hrs, Volume=
 0.09 af, Atten= 14%, Lag= 21.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 0.5 fps, Min. Travel Time= 11.6 min Avg. Velocity = 0.2 fps, Avg. Travel Time= 25.5 min

Peak Depth= 0.05' @ 12.52 hrs Capacity at bank full= 56.3 cfs 15.00' x 1.00' deep channel, n= 0.030 Length= 350.0' Slope= 0.0050 '/' Side Slope Z-value= 3.0 '/'

gineering, Inc.

Type III 24-hr 1-yr Rainfall=2.50"

3/14/2006

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Pond 99P: Large Wetland Area

Inflow Ar	ea =	580.730 ac	, Inflow D	epth = 0.30''	for 1-yr e	vent	
Inflow	=	53.7 cfs @	12.92 hrs,	Volume=	14.40 af		
Outflow	=	23.0 cfs @	14.44 hrs,	Volume=	14.40 af,	Atten= 57%,	Lag= 91.2 min
Primary	=	23.0 cfs @	14.44 hrs,	Volume=	14.40 af		
Secondary	/ =	0.0 cfs @	5.00 hrs,	Volume=	0.00 af		

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 60.48' @ 14.44 hrs Surf.Area= 2.887 ac Storage= 2.89 af Plug-Flow detention time= 57.8 min calculated for 14.40 af (100% of inflow) Center-of-Mass det. time= 57.6 min (1,024.7 - 967.0)

1		59.00'	342	56 af Cu	istom Stage Data	(Prismatic) Listed below			
Elev	ation (feet)	Sui	rf.Area (acres)	Inc.Stor (acre-fee	re Cum.Store t) (acre-feet)				
	59.00		0.020	0.0	0.00				
	60.00		0.200	0.1	1 0.11				
	62.00		11.500	11.7	0 11.81				
	64.00	1	26.000	137.5	0 149.31				
	65.00	1	30.000	128.0	0 277.31				
	65.50	50 131.000 65.25		5 342.56					
#	Rou	ting	Invert	Outlet D	evices				
1	Prin	nary	59.00'	4.00' x 3	.00' Vert. Orifice,	Grate C= 0.600			
2	2 Secondary 65.00		65.00'	170.0' long x 0.5' breadth Broad-Crested Rectangular Weir					
				Head (fe	et) 0.20 0.40 0.60	0.80 1.00			
				Coef. (Er	nglish) 2.80 2.92 3	3.08 3.30 3.32			
Prin	nary (=Orif	OutFlo	w Max=	23.0 cfs @	14.44 hrs HW=60	48' (Free Discharge)			

Secondary OutFlow Max=0.0 cfs @ 5.00 hrs HW=59.00' (Free Discharge) -2=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

EXISTING CONDITIONS 2-YEAR 24-HOUR STORM EVENT ANALYSIS

3250 pre conditions rev 4-18-00 Prepared by Meridian Engineering, Inc. HydroCAD® 7.00 s/n 000814 © 1986-2003 Applied Microcomputer Systems

3/14/2006

Subcatchment 1S: OVERLAND FLOW TO DP 1

Runoff = 2.6 cfs @ 12.59 hrs, Volume= 0.72 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area (ac)	CN	Description	
16.330	30	WOODS GOOD COND GROUP A	
2.670	55	WOODS GOOD COND GROUP B	
14.320	70	WOODS GOOD COND GROUP C	
0.460	76	GRAVEL PATH GROUP A	
0.250	89	GRAVEL PATH GROUP C	
0.310	98	RTE 1/HSE/DRIVE	
0.740	98	WETLANDS	
3.810	86	STRIPPED	
38.890	55	Weighted Average	

(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description
21.8	100	0.0200	0.1		Sheet Flow, SHEET FLOW
					Woods: Light underbrush n= 0.400 P2= 3.10"
0.8	333	0.1800	6.8		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv= 16.1 fps
1.1	805	0.0630	11.7	385.02	Channel Flow, CHANNEL FLOW THRU WETLANDS
-					Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.030

23.7 1,238 Total

Subcatchment 2S: OVERLAND FLOW TO DP 2

Runoff = 3.0 cfs @ 12.24 hrs, Volume= 0.33 af, Depth= 0.82"

Area	(ac)	CN	Desc	ription							
0	.040	98	WET	ETLANDS							
3.	.870	70	WOO	DDS GOOI	COND G	ROUPC					
0.	.800	74	GRA	RASS GOOD COND GROUP C							
0.	.150	89	GRA	GRAVEL PATH GROUP C							
4.	.860	71	Weig	ted Aver	age						
Tc (min)	Lengt (fee	t)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
15.1	10	00	0.0500	0.1		Sheet Flow, SHEET FLOW					
1.6	58	3	0.1370	6.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps					
16.7	68	3	Total								

3/14/2006

Subcatchment 3S: OVERLAND FLOW TO DP 3

Runoff	=	3.7 cfs @	12.30 hrs,	Volume=	0.50 af, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area	(ac)	CN	I Desc	ription									
7	.600	70	WOO	OODS GOOD COND GROUP C									
0	.680	74	GRA	SS GOOD	COND GR	OUPC							
0	.210	89	GRA	VEL PATH	I GROUP C	2							
0.	.410	98	WET	LANDS									
1.	.850	30	WO0	DDS GOOI	COND G	ROUP A							
0.	.170	76	GRA	GRAVEL PATH GROUP A									
10.	.920	65	Weig	ted Aver	age								
Tc (min)	Leng (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description							
15.1	1	100	0.0500	0.1		Sheet Flow, SHEET FLOW							
1.9	6	515	0.1070	5.3		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW							

40.4	4	m . 1			
1.4	838	0.0480	10.2	336.08	Unpaved Kv= 16.1 fps Channel Flow, CHANNEL FLOW THRU WETLANDS Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.030

18.4 1,553 Total

4

Subcatchment 4S: OVERLAND FLOW TO DP 4

Runoff = 0.0 cfs @ 5.00 hrs, Volume= 0.00 af, Depth= 0.00"

Area	(ac) (CN	Desc	ription					
0. 0.	.200 .310	39 30	GRA WOO	GRASS/FIELD GROUP A WOODS GOOD COND GROUP A					
0.	.510	34	Weig	hted Aver	age				
Tc (min)	Lengt (feet	th t)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
9.1	10	00	0.1800	0.2		Sheet Flow, SHEET FLOW Woods: Light underbrush n= 0.400 P2= 3.10"			
0.2	6	5	0.2000	7.2		Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps			
9.3	16	5	Total						

Type III 24-hr 2-yr Rainfall=3.10"

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Subcatchment 5S: OVERLAND FLOW TO DP 5

Runoff = $0.0 \text{ cfs} @ 5.00 \text{ hrs}$, Volume= 0.00	0 af, Depth= 0.00"
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

(ac) C.	N Desc	ription						
470 3	9 GRA	RASS/FIELD GROUP A						
150 7	6 GRA	RAVEL PATH GROUP A						
050 3	WOO WOO	WOODS GOOD COND GROUP A						
670 3	8 Weig	ted Aver	age					
Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
100	0.1200	0.2		Sheet Flow, SHEET FLOW				
490	0.0780	4.5		Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps				
	(ac) C 470 3 150 7 050 3 670 3 Length (feet) 100 490	(ac) <u>CN</u> Desc 470 39 GRA 150 76 GRA 050 30 WOO 670 38 Weig Length Slope (feet) (ft/ft) 100 0.1200 490 0.0780	(ac) CN Description 470 39 GRASS/FIELD 150 76 GRAVEL PATH 050 30 WOODS GOOI 670 38 Weighted Avera Length Slope Velocity (feet) (ft/ft) (ft/sec) 100 0.1200 0.2 490 0.0780 4.5	(ac) CN Description 470 39 GRASS/FIELD GROUP A 150 76 GRAVEL PATH GROUP A 050 30 WOODS GOOD COND G 670 38 Weighted Average Length Slope Velocity Capacity (feet) (ft/ft) (ft/sec) (cfs) 100 0.1200 0.2 490 0.0780 4.5				

12.5 590 Total

Subcatchment 6S: OVERLAND FLOW TO DP 6

Runoff = 1.2 cfs @ 12.24 hrs, Volume= 0.16 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area (ac)	CN	J Desc	ription		
0.050	89	GRA	VEL PATH	H GROUP (
0.200	76	GRA	VEL PATH	H/DRIVE C	GROUP A
1.660	86	5 STRI	PPED ARE	EAS	
0.290	39	GRA	SS GOOD	COND GR	OUP A
1.270	30	WOO	DDS GROU	ЛРА	
0.330	98	EXIS	T. DWELL	ING/PAVI	E/RTE 1
3.800	64	Weig	ted Aver	age	
Tc Lei (min) (ngth feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0800	0.1		Sheet Flow, SHEET FLOW
1.3	414	0.1100	5.3		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps
0.9	170	0.0050	3.1	56.35	Channel Flow, Segment ID: Area= 18.0 sf Perim= 21.3' r= 0.85' n= 0.030
12.1.2					

14.7 684 Total

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Type III 24-hr 2-yr Rainfall=3.10"

3/14/2006

Subcatchment 99s: Watershed into wetlands

Runoff = 123.5 cfs @ 12.83 hrs, Volume= 26.74 af, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area	(ac) CN	V Desc	ription			
580.	.730 6	5 avera	age area &	CN (see wo	orksheet)	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
15.1	100	0.0500	0.1		Sheet Flow,	_
10.8	740	0.0050	1.1		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow,	
26.9	5,300	0.0050	3.3	108.47	Unpaved Kv= 16.1 fps Channel Flow, Area= 33.0 sf Perim= 36.3' $r= 0.91' = 0.020$	
52.8	6,140	Total			1.100 0010 01 101011 00.0 1 - 0.91 11- 0.050	-

Reach 1R: DESIGN POINT 1

Inflow Area =		42.690 ac	, Inflow Depth	= 0.25"	for 2-yr e	vent	
Inflow	=	3.7 cfs @	12.57 hrs, Volu	me=	0.88 af		
Outflow	=	3.7 cfs @	12.57 hrs, Volu	me=	0.88 af,	Atten= 0%,	Lag = 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.0 fps, Min. Travel Time= 0.0 min Avg. Velocity = 3.5 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.30' @ 12.57 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 60R: FLOW TO R61

Inflow A	rea =	3.800 ac	, Inflow D	epth = 0.51"	for 2-vr event
Inflow	=	1.2 cfs @	12.24 hrs,	Volume=	0.16 af
Outflow	=	1.1 cfs @	12.51 hrs,	Volume=	0.16 af, Atten= 11%, Lag= 16.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 0.7 fps, Min. Travel Time= 7.9 min Avg. Velocity = 0.3 fps, Avg. Travel Time= 21.4 min

Peak Depth= 0.10' @ 12.37 hrs Capacity at bank full= 56.3 cfs 15.00' x 1.00' deep channel, n= 0.030 Length= 350.0' Slope= 0.0050 '/' Side Slope Z-value= 3.0 '/'

Type III 24-hr 2-yr Rainfall=3.10"

3/14/2006

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Pond 99P: Large Wetland Area

Inflow Ar	rea =	580.730 ac	, Inflow D	epth = 0.55''	for 2-yr e	vent	
Inflow	=	123.5 cfs @	12.83 hrs,	Volume=	26.74 af		
Outflow	=	43.5 cfs @	14.22 hrs,	Volume=	26.74 af,	Atten= 65%,	Lag= 83.2 min
Primary	=	43.5 cfs @	14.22 hrs,	Volume=	26.74 af		
Secondary	y =	0.0 cfs @	5.00 hrs,	Volume=	0.00 af		

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 61.26' @ 14.22 hrs Surf.Area= 7.301 ac Storage= 7.46 af Plug-Flow detention time= 96.9 min calculated for 26.74 af (100% of inflow) Center-of-Mass det. time= 96.8 min (1,037.2 - 940.5)

#	In	vert	Avail.Sto	orage	Storag	ge Description	
1	59	9.00'	342.	56 af	Custo	om Stage Data	(Prismatic) Listed below
Elev	vation (feet)	Sui	rf.Area (acres)	Inc. (acre	Store -feet)	Cum.Store (acre-feet)	
	59.00		0.020		0.00	0.00	
	60.00		0.200		0.11	0.11	
	62.00		11.500		11.70	11.81	
	64.00	1	26.000	1	37.50	149.31	
	65.00	1	30.000	1	28.00	277.31	
	65.50	1	31.000		65.25	342.56	
#	Routi	ng	Invert	Outl	et Devi	ces	
1	Prima	ary	59.00'	4.00'	x 3.00	Vert. Orifice,	/Grate C= 0.600
2	Secon	dary	65.00'	170.0)' long	x 0.5' breadth	1 Broad-Crested Rectangular Weir
				Head	1 (feet)	0.20 0.40 0.60	0.80 1.00
				Coef	. (Engli	sh) 2.80 2.92 3	3.08 3.30 3.32

Primary OutFlow Max=43.5 cfs @ 14.22 hrs HW=61.26' (Free Discharge) 1=Orifice/Grate (Orifice Controls 43.5 cfs @ 4.8 fps)

Secondary OutFlow Max=0.0 cfs @ 5.00 hrs HW=59.00' (Free Discharge) -2=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

EXISTING CONDITIONS 10-YEAR 24-HOUR STORM EVENT ANALYSIS

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3/14/2006

Subcatchment 1S: OVERLAND FLOW TO DP 1

Runoff = 15.7 cfs @ 12.41 hrs, Volume= 2.41 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

_	Area (ac)	CN	Description
	16.330	30	WOODS GOOD COND GROUP A
	2.670	55	WOODS GOOD COND GROUP B
	14.320	70	WOODS GOOD COND GROUP C
	0.460	76	GRAVEL PATH GROUP A
	0.250	89	GRAVEL PATH GROUP C
	0.310	98	RTE 1/HSE/DRIVE
	0.740	98	WETLANDS
	3.810	86	STRIPPED
	38.890	55	Weighted Average

(min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	100	0.0200	0.1		Sheet Flow, SHEET FLOW
					Woods: Light underbrush n= 0.400 P2= 3.10"
0.8	333	0.1800	6.8		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv= 16.1 fps
1.1	805	0.0630	11.7	385.02	Channel Flow, CHANNEL FLOW THRU WETLANDS
				_	Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.030

23.7 1,238 Total

Subcatchment 2S: OVERLAND FLOW TO DP 2

Runoff = 7.0 cfs @ 12.22 hrs, Volume= 0.71 af, Depth= 1.75"

Area	(ac) C	N Des	cription		
0.	040	98 WE	FLANDS	100 Mar 1	1
3.	870 5	70 WO	ODS GOOI	COND G	ROUPC
0.	800 7	4 GRA	SS GOOD	COND GR	OUPC
0.	150 8	89 GRA	VEL PATH	H GROUP C	2
4.	860 7	71 Wei	ghted Aver	age	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0500	0.1		Sheet Flow, SHEET FLOW
1.6	583	0.1370	6.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps
16.7	683	Total			

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Subcatchment 3S: OVERLAND FLOW TO DP 3

Runoff	=	10.9 cfs @	12.26 hrs,	Volume=	1.21 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area (ac)	CN	Desc	ription							
7.600	70	WOO	100DS GOOD COND GROUP C							
0.680	74	GRA	SS GOOD	COND GR	OUPC					
0.210	89	GRA	VEL PATH	I GROUP C						
0.410	98	WET	LANDS							
1.850	30	WOO	DDS GOOI	COND G	ROUP A					
0.170	76	GRA	VEL PATH	I GROUP A						
10.920	65	Weig	hted Aver	age						
Tc Ler _(min) (f	ngth Teet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
15.1	100	0.0500	0.1		Sheet Flow, SHEET FLOW					
1.9	615	0.1070	5.3		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps					
1.4	838	0.0480	10.2	336.08	 Onpaved Kv= 16.1 tps Channel Flow, CHANNEL FLOW THRU WETLANDS Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.030 					

18.4 1,553 Total

Subcatchment 4S: OVERLAND FLOW TO DP 4

Runoff	=	0.0 cfs @	21.50 hrs,	Volume=	0.00 af, Depth= 0.02"

Area	(ac)	CN	Desc	ription						
0.200 0.310		39 30	GRA WOO	ASS/FIELD GROUP A DODS GOOD COND GROUP A						
0	.510	34	Weig	tted Avera	age					
Tc (min)	Lengt (fee	th t)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
9.1	10	00	0.1800	0.2		Sheet Flow, SHEET FLOW Woods: Light underbrush n= 0.400 P2= 3.10"				
0.2	6	5	0.2000	7.2		Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps				
03	16	5	Total							

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3/14/2006

Subcatchment 5S: OVERLAND FLOW TO DP 5

Runoff = 0.0 cfs @ 15.05 hrs, Volume= 0.02 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Ar	ea (ac)	Cl	N Desc	ription						
	1.470 0.150 1.050	3 7 3	9 GRA 6 GRA 0 WOO	GRASS/FIELD GROUP A GRAVEL PATH GROUP A WOODS GOOD COND GROUP A						
	2.670	3	8 Weig	ghted Aver	age					
T (mir	C Len n) (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
10.	7 1	100	0.1200	0.2		Sheet Flow, SHEET FLOW				
1.	8 4	190	0.0780	4.5		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Ky= 16.1 fps				
12	5 5	500	Total							

Subcatchment 6S: OVERLAND FLOW TO DP 6

Runoff = 3.9 cfs @ 12.20 hrs, Volume= 0.40 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

14.7

684

Total

ļ	Area (ac)	CI	N Dese	cription						
	0.050	8	9 GRA	VEL PATI	HGROUP	C				
	0.200	7	6 GRA	VEL PATI	H/DRIVE	GROUP A				
	1.660	8	6 STR	PIPED AREAS						
	0.290	3	9 GRA	SS GOOD	COND GR	OUP A				
	1.270	3	0 WOO	ODS GROU	JP A					
	0.330	9	8 EXIS	T. DWELL	ING/PAV	E/RTE 1				
	3.800	64	4 Weig	ghted Aver	age					
	Tc Ler (min) (i	ngth feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
	12.5	100	0.0800	0.1		Sheet Flow, SHEET FLOW				
	1.3	414	0.1100	5.3		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW				
	0.9	170	0.0050	3.1	56.35	Channel Flow, Segment ID: Area= 18.0 sf Perim= 21.3' r= 0.85' n= 0.030				

Type III 24-hr 10-yr Rainfall=4.50"

Subcatchment 99s: Watershed into wetlands

Runoff = 353.7 cfs @ 12.76 hrs, Volume= 64.38 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area	(ac) CN	V Desc	ription		
580	.730 6	5 aver	age area &	CN (see wo	orksheet)
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0500	0.1		Sheet Flow,
10.8	740	0.0050	1.1		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow,
26.9	5,300	0.0050	3.3	108.47	Unpaved Kv= 16.1 fps Channel Flow , Area= 33.0 sf Perim= 36.3' $r= 0.91'$ $n= 0.030$
52.8	6.140	Total			1100 00.0 51 Termi - 00.0 1 - 0.91 II - 0.050

Reach 1R: DESIGN POINT 1

Inflow Area =		42.690 ac	c, Inflow Depth = 0.79°	for 10-yr event
Inflow	=	19.2 cfs @	12.39 hrs, Volume=	2.81 af
Outflow	=	19.2 cfs @	12.39 hrs, Volume=	2.81 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 9.8 fps, Min. Travel Time= 0.0 min Avg. Velocity = 4.4 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.65' @ 12.39 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 60R: FLOW TO R61

 Inflow Area =
 3.800 ac, Inflow Depth = 1.27" for 10-yr event

 Inflow =
 3.9 cfs @ 12.20 hrs, Volume=
 0.40 af

 Outflow =
 3.6 cfs @ 12.35 hrs, Volume=
 0.40 af, Atten=7%, Lag= 9.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 1.2 fps, Min. Travel Time= 5.0 min Avg. Velocity = 0.3 fps, Avg. Travel Time= 16.7 min

Peak Depth= 0.20' @ 12.27 hrs Capacity at bank full= 56.3 cfs 15.00' x 1.00' deep channel, n= 0.030 Length= 350.0' Slope= 0.0050 '/' Side Slope Z-value= 3.0 '/'

#

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Pond 99P: Large Wetland Area

Inflow Area =		580.730 ac	c, Inflow Depth = $1.33"$	for 10-yr event
Inflow	=	353.7 cfs @	12.76 hrs, Volume=	64.38 af
Outflow	=	72.6 cfs @	14.85 hrs, Volume=	64.38 af, Atten= 79%, Lag= 125.3 min
Primary	-	72.6 cfs @	14.85 hrs, Volume=	64.38 af
Secondary	=	0.0 cfs @	5.00 hrs, Volume=	0.00 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 62.21' @ 14.85 hrs Surf. Area= 23.442 ac Storage= 26.15 af Plug-Flow detention time= 182.3 min calculated for 64.38 af (100% of inflow) Center-of-Mass det. time= 182.2 min (1,091.8 - 909.6)

1				ge Description	
1	59.0	00' 342	.56 af Custo	om Stage Data (rismatic) Listed below
Eleva (f	tion feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	
59	9.00	0.020	0.00	0.00	
60	0.00	0.200	0.11	0.11	
62	2.00	11.500	11.70	11.81	
64	4.00	126.000	137.50	149.31	
65	5.00	130.000	128.00	277.31	
65	5.50	131.000	65.25	342.56	
# 1	Routing	g Invert	Outlet Devi	ces	
1 1	Primary	59.00'	4.00' x 3.00'	Vert. Orifice/G	rate C= 0.600
2 5	Seconda	ary 65.00'	170.0' long	x 0.5' breadth I	road-Crested Rectangular Weir
			Head (feet)	0.20 0.40 0.60 0	30 1.00
			Coef. (Engli	sh) 2.80 2.92 3.0	3.30 3.32

1=Orifice/Grate (Orifice Controls 72.6 cfs @ 6.0 fps)

Secondary OutFlow Max=0.0 cfs @ 5.00 hrs HW=59.00' (Free Discharge) -2=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Type III 24-hr 10-yr Rainfall=4.50"

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EXISTING CONDITIONS 100-YEAR 24-HOUR STORM EVENT ANALYSIS

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Subcatchment 1S: OVERLAND FLOW TO DP 1

Runoff	=	47.1 cfs @	12.35 hrs,	Volume=	5.88 af, Depth= 1.81"	
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area (ac)	CN	Description	and the second	
16.330	30	WOODS GOOD COND GROUP A		
2.670	55	WOODS GOOD COND GROUP B		
14.320	70	WOODS GOOD COND GROUP C		
0.460	76	GRAVEL PATH GROUP A		
0.250	89	GRAVEL PATH GROUP C		
0.310	98	RTE 1/HSE/DRIVE		
0.740	98	WETLANDS		
3.810	86	STRIPPED		
38.890	55	Weighted Average		

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
21.8	100	0.0200	0.1		Sheet Flow, SHEET FLOW	
					Woods: Light underbrush n= 0.400 P2= 3.10"	
0.8	333	0.1800	6.8		Shallow Concentrated Flow, CONCENTRATED FLOW	
					Unpaved Kv= 16.1 fps	
1.1	805	0.0630	11.7	385.02	Channel Flow, CHANNEL FLOW THRU WETLANDS	
	_	1222			Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.030	

23.7 1,238 Total

Subcatchment 2S: OVERLAND FLOW TO DP 2

Runoff = 13.6 cfs @ 12.21 hrs, Volume= 1.34 af, Depth= 3.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area	(ac)	CN	Desc	ription					
0.	.040	98	8 WETLANDS						
3.	.870	70	WOO	DDS GOOI	COND G	ROUP C			
0.	.800	74	GRA	SS GOOD	COND GR	OUPC			
0.	.150	89	GRA	VEL PATH	I GROUP C	3			
4.	.860	71	Weig	ted Aver	age				
Tc (min)	Leng (fe	gth et)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
15.1	1	100	0.0500	0.1	1	Sheet Flow, SHEET FLOW Woods: Light underbrush n= 0.400 P2= 3.10"			
1.6	5	583	0.1370	6.0		Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps			
16.7	6	683	Total						

Type III 24-hr 100-yr Rainfall=6.50"

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Subcatchment 3S: OVERLAND FLOW TO DP 3

Runoff = 23.7 cfs @ 12.24 hrs, Volume= 2.48 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

ac) CN	J Desc	ription						
00 7	0 70 WOODS GOOD COND GROUP C							
80 74	4 GRA	SS GOOD	COND GR	OUP C				
10 89	GRA	VEL PATH	I GROUP O					
10 98	B WET	LANDS						
50 30	WOO	DDS GOOI	COND G	ROUP A				
70 76	6 GRA	VEL PATH	I GROUP A	A				
20 65	5 Weig	ted Aver	age					
Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
100	0.0500	0.1	7	Sheet Flow, SHEET FLOW				
615	0.1070	5.3		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps				
838	0.0480	10.2	336.08	Channel Flow, CHANNEL FLOW THRU WETLANDS Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.030				
	ac) <u>CN</u> 00 7(80 74 10 98 50 3(70 76 20 65 Length <u>(feet)</u> 100 615 838	ac) CN Desc 00 70 WO0 80 74 GRA 10 89 GRA 10 98 WET 50 30 WO0 70 76 GRA 20 65 Weig Length Slope (feet) (ft/ft) 100 0.0500 615 0.1070 838 0.0480	ac) CN Description 00 70 WOODS GOOI 80 74 GRASS GOOD 10 89 GRAVEL PATH 10 98 WETLANDS 50 30 WOODS GOOI 70 76 GRAVEL PATH 20 65 Weighted Avera Length Slope Velocity (feet) (ft/ft) (ft/sec) 100 0.0500 0.1 615 0.1070 5.3 838 0.0480 10.2	ac)CNDescription0070WOODS GOOD COND G8074GRASS GOOD COND GR1089GRAVEL PATH GROUP G1098WETLANDS5030WOODS GOOD COND G7076GRAVEL PATH GROUP A2065Weighted AverageLengthSlopeVelocity1000.05000.16150.10705.38380.048010.2336.08				

18.4 1,553 Total

Subcatchment 4S: OVERLAND FLOW TO DP 4

Runoff = 0.0 cfs @ 12.46 hrs, Volume= 0.01 af, Depth= 0.31"

Area	(ac) (CN	Desc	ription		
0.200 39		 39 GRASS/FIELD GROUP A 30 WOODS GOOD COND GI 				ROUP A
0	.510	34	Weig	hted Aver	age	
Tc (min)	Lengt (fee	t)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	10	00	0.1800	0.2		Sheet Flow, SHEET FLOW Woods: Light underbrush p= 0.400 P2- 3.10"
0.2	6	5	0.2000	7.2		Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps
9.3	16	5	Total			

Type III 24-hr 100-yr Rainfall=6.50"

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Subcatchment 5S: OVERLAND FLOW TO DP 5

Runoff =	0.6 cfs @	12.40 hrs,	Volume=	0.12 af, Deptl	n= 0.54"	
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

	Area ((ac) C	N Desc	ription		
	1.4	470 3	39 GRA	SS/FIELD	GROUP A	
0.150 76 GRAVEL PATH GROUP A						A
1.050 30 WOODS GOOD COND GROUP A						ROUP A
	2.6	670 3	88 Weig	ghted Aver	age	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	10.7	100	0.1200	0.2		Sheet Flow, SHEET FLOW
	1.8	490	0.0780	4.5		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps
	10 5	500	m . 1			

12.5 590 Total

Subcatchment 6S: OVERLAND FLOW TO DP 6

Runoff = 8.6 cfs @ 12.19 hrs, Volume= 0.83 af, Depth= 2.63"

Area (ac)	CN	I Desc	ription							
0.050	89	9 GRAVEL PATH GROUP C								
0.200	76	GRA	VEL PATH	H/DRIVE C	GROUP A					
1.660	86	STRI	PPED ARE	EAS						
0.290	39	GRA	SS GOOD	COND GR	OUP A					
1.270	30	WOC	DDS GROU	JP A						
0.330	98	EXIS	T. DWELL	ING/PAVI	E/RTE 1					
3.800	64	Weig	tted Aver	age						
Tc Le _(min)	ength (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
12.5	100	0.0800	0.1	100 m	Sheet Flow, SHEET FLOW					
1.3 0.9	414 170	0.1100	5.3 3.1	56.35	Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps Channel Flow, Segment ID:					
			UIX	50.00	Area= 18.0 sf Perim= $21.3'$ r= $0.85'$ n= 0.030					
14.7	684	Total								

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Subcatchment 99s: Watershed into wetlands

Runoff = 770.4 cfs @ 12.72 hrs, Volume= 131.69 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area	(ac) CN	V Desc	ription		
580	.730 6	5 avera	age area &	CN (see wo	orksheet)
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description .
15.1	100	0.0500	0.1		Sheet Flow,
10.8	740	0.0050	1.1		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow,
26.9	5,300	0.0050	3.3	108.47	Unpaved Kv= 16.1 fps Channel Flow , Area= $33.0 \text{ sf Perim} = 36.3' r = 0.91' n = 0.030$
52.8	6.140	Total			

Reach 1R: DESIGN POINT 1

Inflow Area =		42.690 ac	, Inflow Depth = 1.89"	for 100-yr event		
Inflow	=	55.1 cfs @	12.33 hrs, Volume=	6.71 af		
Outflow	=	55.1 cfs @	12.33 hrs, Volume=	6.71 af, Atten= 0%, Lag= 0.0 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 13.4 fps, Min. Travel Time= 0.0 min Avg. Velocity = 5.3 fps, Avg. Travel Time= 0.0 min

Peak Depth= 1.07' @ 12.33 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 60R: FLOW TO R61

 Inflow Area =
 3.800 ac, Inflow Depth = 2.63" for 100-yr event

 Inflow =
 8.6 cfs @ 12.19 hrs, Volume=
 0.83 af

 Outflow =
 8.3 cfs @ 12.30 hrs, Volume=
 0.83 af, Atten= 4%, Lag= 6.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 1.6 fps, Min. Travel Time= 3.7 min Avg. Velocity = 0.4 fps, Avg. Travel Time= 13.6 min

Peak Depth= 0.33' @ 12.23 hrs Capacity at bank full= 56.3 cfs 15.00' x 1.00' deep channel, n= 0.030 Length= 350.0' Slope= 0.0050 '/' Side Slope Z-value= 3.0 '/'

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Type III 24-hr 100-yr Rainfall=6.50"

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Pond 99P: Large Wetland Area

Inflow Area =		580.730 ac	; Inflow Depth = $2.72"$	for 100-yr event
Inflow	=	770.4 cfs @	12.72 hrs, Volume=	131.69 af
Outflow	=	87.5 cfs @	16.23 hrs, Volume=	120.08 af, Atten= 89%, Lag= 210.4 min
Primary	=	87.5 cfs @	16.23 hrs, Volume=	120.08 af
Secondary	=	0.0 cfs @	5.00 hrs, Volume=	0.00 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 62.88' @ 16.23 hrs Surf.Area= 61.798 ac Storage= 72.21 af Plug-Flow detention time= 398.1 min calculated for 120.08 af (91% of inflow) Center-of-Mass det. time= 354.0 min (1,241.7 - 887.7)

#	Invert	Avail.Storage	Storage Description		
1	50.00	212 56 -6	Custom Class D. (D.) (1) It 11		

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
59.00	0.020	0.00	0.00
60.00	0.200	0.11	0.11
62.00	11.500	11.70	11.81
64.00	126.000	137.50	149.31
65.00	130.000	128.00	277.31

#	Routing	Invert	Outlet Devices
	riouning	THINCH'L	Ounce Devices

131.000

65.50

 1
 Primary
 59.00'
 4.00' x 3.00' Vert. Orifice/Grate
 C= 0.600

 2
 Secondary
 65.00'
 170.0' long x 0.5' breadth Broad-Crested Rectangular Weir

 Head (feet)
 0.20
 0.40
 0.60
 0.80
 1.00

 Coef. (English)
 2.80
 2.92
 3.08
 3.30
 3.32

342.56

Primary OutFlow Max=87.5 cfs @ 16.23 hrs HW=62.88' (Free Discharge)

65.25

Secondary OutFlow Max=0.0 cfs @ 5.00 hrs HW=59.00' (Free Discharge) 2=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

PROPOSED CONDITIONS

WATERSHED ROUTING DIAGRAM



PROPOSED CONDITIONS 1-YEAR 24-HOUR STORM EVENT ANALYSIS

3/14/2006

Subcatchment 10S: OVERLAND FLOW TO DP 10

Runoff = 0.1 cfs @ 16.78 hrs, Volume= 0.04 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac)	CN	Description	
8.872	30	WOODS GROUP A	
1.100	55	WOODS GROUP B	
5.512	70	WOODS GROUP C	
0.270	76	GRAVEL PATH GROUP A	
0.820	98	RTE 1 & WETLANDS .74	
0.050	89	PATH C	
0.300	86	STRIPPED AREAS GROUP C	
0.758	74	GRASS GROUP C	
1.523	39	GRASS GROUP A	
0.176	98	Parking at base of hill	
19.381	50	Weighted Average	

Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
11.5	100	0.1000	0.1		Sheet Flow, SHEET FLOW
					Woods: Light underbrush n= 0.400 P2= 3.10"
0.8	238	0.1000	5.1		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv= 16.1 fps
0.2	80	0.1750	6.7		Shallow Concentrated Flow, OVERLAND TO WET
	_				Unpaved Kv= 16.1 fps

12.5 418 Total

Subcatchment 11S: OVERLAND FLOW TO R29

Runoff = 0.4 cfs @ 12.12 hrs, Volume= 0.03 af, Depth= 1.31"

Area	(ac)	CN	Desc	ription		
0.	170	98	IMPH	ERVIOUS	AREAS	
0.	150	74	GRA	SS GROUI	°C	
0.	320	87	Weig	ted Aver	age	
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0						Direct Entry, 10 MINUTE MINIMUM

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Subcatchment 12S: OVERLAND FLOW TO R28

Runoff = $1.7 \text{ cts} @ 12.15 \text{ hrs}$, Volume= 0.15 at, Dept	th = 1.45''	
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac)	CN	Description				
0.800	98	IMPERVIOUS AREAS				
0.060	70	WOODS GROUP C				
0.400	74	GRASS GROUP C				
1.260	89	Weighted Average				
Tc Len	ngth	Slope Velocity Capacity Description				

(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)
9.3	100	0.1700	0.2	Sheet Flow, SHEET FLOW
				Woods: Light underbrush n= 0.400 P2= 3.10"
0.1	42	0.2400	7.9	Shallow Concentrated Flow, CONCENTRATED FLOW
				Unpaved Kv= 16.1 fps
2.2	294	0.0200	2.3	Shallow Concentrated Flow, CONCENTRATED FLOW
				Unpaved Kv= 16.1 fps
0.9	230	0.0400	4.1	Shallow Concentrated Flow, GUTTER FLOW
				Paved Kv= 20.3 fps
12.5	666	Total		

666 Total

Subcatchment 13S: OVERLAND FLOW TO R24

Runoff =	
----------	--

3

0.4 cfs @ 12.12 hrs, Volume=

0.03 af, Depth= 1.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area	(ac)	CN	Desc	ription			
0.	140	98	IMPI	ERVIOUS A	AREAS		
0.	190	74	GRA	SS GROUP	°C		
0.	.330	84	Weig	ted Aver	age		
Tc	Len	gth	Slope	Velocity	Capacity	Description	
(min)	(fe	eet)	(ft/ft)	(ft/sec)	(cfs)		
10.0						Direct Entry, 10 MINUTE MINIMUM	

Subcatchment 14S: OVERLAND FLOW TO R25

0.4 cfs @ 12.12 hrs, Volume= 0.03 af, Depth= 1.45" Runoff

n

1.1

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0.150 98 IMPERVIOUS AREAS 0.090 74 GRASS GROUP C 0.240 89 Weighted Average Tc Length Slope Velocity Capacity (min) (feet) (ft/ft) (ft/sec) (cfe)	
0.090 74 GRASS GROUP C 0.240 89 Weighted Average Tc Length Slope Velocity Capacity (min) (feet) (ft/ft) (ft/cec) (cfc)	
0.240 89 Weighted Average Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfc)	
Tc Length Slope Velocity Capacity Description	
(1111) (1001) (11/10) (11/200) (013)	
10.0 Direct Entry, 10 MINUTE MINIMUM	
Subcatchment 16S: OVERLAND FLOW TO R22	
Runoff = 0.3 cfs @ 12.11 hrs, Volume= 0.03 af, Depth= 1.87"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Fype III 24-hr 1-yr Rainfall=2.50"	
Area (ac) CN Description	
0.140 98 IMPERVIOUS AREAS	
0.050 74 GRASS GROUP C 0.170 94 Weighted Average	
0.170 94 Weighted Weidge	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 MINUTE MINIMUM	
Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.04 af, Depth= 1.00" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	
A () CN Description	
0 150 98 IMPERVIOUS AREAS	-
0.320 74 GRASS GROUP C	
0.470 82 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MINUTE MINIMUM	
Tc Length Slope Velocity Capacity Description (min) (feet) (ff/ft) (ff/sec) (cfs) 10.0 Direct Entry, 10 MINUTE MINIMUM Subcatchment 18S: OVERLAND FLOW TO R16	
Tc Length Slope Velocity Capacity Description (min) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MINUTE MINIMUM Subcatchment 18S: OVERLAND FLOW TO R16 unoff = 0.1 cfs @ 12.17 hrs, Volume= 0.01 af, Depth= 0.36"	

Type III 24-hr 1-yr Rainfall=2.50"

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0.130	98	IMPERVIC	OUS AREAS	
0.140	39	GRASS GI	ROUP A	
0.270	67	Weighted	Average	
Tc Le (min) (ngth (feet)	Slope Velc (ft/ft) (ft/	ocity Capacity sec) (cfs	ty Description s)
10.0				Direct Entry, 10 MINUTE MINIMUM
		St	ubcatchmen	nt 19S: OVERLAND FLOW TO R17
Runoff =		0.0 cfs @ 12.	42 hrs, Volum	ne= 0.01 af, Depth= 0.15"
Runoff by S Type III 24-) Area (ac)	CS TR- hr 1-yr CN	20 method, U Rainfall=2.5 Description	JH=SCS, Time 0" n	e Span= 5.00-30.00 hrs, dt= 0.05 hrs
0.140	98	IMPERVIC	US AREAS	
0.273	39	GRASS GR	OUP A	
0.413	59	Weighted A	Average	
			city Canacity	av Description
Tc Lei (min) (i	ngth feet)	Slope Velo (ft/ft) (ft/s	sec) (cfs)	s)
Tc Lei (min) (1 10.0	ngth feet)	Slope Velo (ft/ft) (ft/s	sec) (cfs)	Direct Entry, 10 min. minimum
Tc Lei (min) (i 10.0	ngth feet)	Slope Velo (ft/ft) (ft/s Sul	sec) (cfs)	Direct Entry, 10 min. minimum
Tc Ler (min) (1 10.0 Runoff =	ngth feet)	Slope Velo (ft/ft) (ft/: Sul 1.5 cfs @ 12.:	sec) (cfs) ocatchment 25 hrs, Volum	Direct Entry, 10 min. minimum t 20S: OVERLAND FLOW TO DP 20 me= 0.18 af, Depth= 0.49"
Tc Lei (min) (: 10.0 Runoff = Runoff by S0 Fype III 24-h	ngth feet) CS TR- nr 1-yr	Slope Velo (<u>ft/ ft) (ft/:</u> Sul 1.5 cfs @ 12.2 20 method, U Rainfall=2.5(25 hrs, Volum	Direct Entry, 10 min. minimum t 20S: OVERLAND FLOW TO DP 20 me= 0.18 af, Depth= 0.49" e Span= 5.00-30.00 hrs, dt= 0.05 hrs
Tc Ler (min) (: 10.0 Runoff = Runoff by S0 Fype III 24-h Area (ac)	ngth feet) CS TR- ur 1-yr CN	Slope Velo (ft/ft) (ft/: Sul 1.5 cfs @ 12.1 20 method, U Rainfall=2.50 Descriptior	ocatchment 25 hrs, Volum H=SCS, Time	Direct Entry, 10 min. minimum t 20S: OVERLAND FLOW TO DP 20 me= 0.18 af, Depth= 0.49" e Span= 5.00-30.00 hrs, dt= 0.05 hrs
Tc Lei (min) (: 10.0 Runoff = Runoff by SC Fype III 24-h <u>Area (ac)</u> 0.040	ngth feet) CS TR- ur 1-yr <u>CN</u> 98	Slope Velo (ft/ft) (ft/s Sul 1.5 cfs @ 12.3 20 method, U Rainfall=2.50 Description WETLANE	cupacity sec) (cfs) ocatchment 25 hrs, Volum 7H=SCS, Time 7"	Direct Entry, 10 min. minimum t 20S: OVERLAND FLOW TO DP 20 me= 0.18 af, Depth= 0.49" e Span= 5.00-30.00 hrs, dt= 0.05 hrs
Tc Ler (min) (: 10.0 Runoff = Runoff by S0 Type III 24-F Area (ac) 0.040 0.100	ngth feet) CS TR- nr 1-yr CN 98 76	Slope Velo (ft/ft) (ft/s Sul 1.5 cfs @ 12.3 20 method, U Rainfall=2.50 Description WETLAND GRAVEL P	capacity sec) (cfs) catchment 25 hrs, Volum (H=SCS, Time)" 10 10 10 10 10 10 10 10 10 10 10 10 10	Direct Entry, 10 min. minimum t 20S: OVERLAND FLOW TO DP 20 ne= 0.18 af, Depth= 0.49" e Span= 5.00-30.00 hrs, dt= 0.05 hrs
Tc Ler (min) (: 10.0 Runoff = Runoff by S0 Type III 24-h Area (ac) 0.040 0.100 0.400	ngth feet) CS TR- ur 1-yr CN 98 76 74	Slope Velo (ft/ft) (ft/s Sul 1.5 cfs @ 12.1 20 method, U Rainfall=2.50 Description WETLANE GRAVEL P GRASS GR	capacity sec) (cfs) catchment 25 hrs, Volum (H=SCS, Time)" h S ATH GROUP OUP C	Direct Entry, 10 min. minimum t 20S: OVERLAND FLOW TO DP 20 me= 0.18 af, Depth= 0.49" e Span= 5.00-30.00 hrs, dt= 0.05 hrs
Tc Ler (min) (: 10.0 Runoff = Runoff by S0 Type III 24-h Area (ac) 0.040 0.100 0.400 3.930	ngth feet) CS TR- ur 1-yr CN 98 76 74 70	Slope Velo (ft/ft) (ft/s Sul 1.5 cfs @ 12.3 20 method, U Rainfall=2.50 Description WETLANE GRAVEL P GRASS GR WOODS G	capacity sec) (cfs) catchment 25 hrs, Volum 25 hrs, Volum H=SCS, Time H=SCS, Time 30 S ATH GROUP OUP C ROUP C	Direct Entry, 10 min. minimum t 20S: OVERLAND FLOW TO DP 20 me= 0.18 af, Depth= 0.49" e Span= 5.00-30.00 hrs, dt= 0.05 hrs

Sheet Flow, SHEET FLOW 15.1 100 0.0500 0.1 Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW 495 0.1600 6.4 1.3 Unpaved Kv= 16.1 fps

16.4 595 Total

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Subcatchment 21S: OVERLAND FLOW TO R14

Runoff = 0.1 cfs @ 12.13 hrs, Volume= 0.01 af, Depth= 0.69"

Area (ac)	CN	Description			
0.140	98	IMPERVIOUS	SAREAS		
0.084	39	GRASS GROU	JP A		
0.224	76	Weighted Ave	erage		
Tc Le (min) (ngth (feet)	Slope Velocity (ft/ft) (ft/sec	Capacity) (cfs)	Description	
10.0				Direct Entry, 10 min. minimum	
		Subo	atchment	22S: OVERLAND FLOW TO R13	
Runoff =	•	0.1 cfs @ 12.15 ł	nrs, Volume	= 0.01 af, Depth= 0.46"	
Runoff by S	CS TR-	20 method, UH=	SCS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 24-ł	hr 1-yr	Rainfall=2.50"			
Area (ac)	CN	Description			
0.130	98	IMPERVIOUS	AREAS		
0.120	39	GRASS GROU	PA		
0.250	70	Weighted Ave	rage		
Tc Ler	ngth	Slope Velocity	Capacity	Description	
(min) (r	teet)	(ft/ft) (ft/sec)	(cfs)		_
10.0				Direct Entry, 10 MINUTE MINIMUM	
		Subc	atchment	23S: OVERLAND FLOW TO R11	
Pupoff =		0. cfc @ 15.44 h	re Volumo-	0.00 - (Denther 0.02)	
Kunon –		0.0 CIS @ 10.44 II	is, volume-	$-0.00 \text{ ar}, \text{ Deptn} = 0.03^{\circ}$	
Runoff by SC	CS TR-	20 method, UH=	SCS, Time Sp	oan= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 24-h	r 1-yr	Rainfall=2.50"			
	CNI	D			
Area (ac)	CN	Description	ADEAC		
0.140	98	NUPERVIOUS	AKEAS	SC A	
0.525	51	Weighted Aver	ver, Good, H	SG A	
0.003	51	weighted Aver	age		
Tc Len	gth	Slope Velocity	Capacity	Description	
(min) (fe	eet) (ft/ft) (ft/sec)	(cfs)		0
10.0				Direct Entry, 10 MINUTE MINIMUM	

Type III 24-hr 1-yr Rainfall=2.50"

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Subcatchment 24S: OVERLAND FLOW TO R34

Runoff = 0.1 cfs @ 12.13 hrs, Volume= 0.01 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

0.100		Deberr	1			_
P	98	IMPEF	RVIOUS	AREAS		
0.060	39	GRAS	S GROUI	PA		
0.160	76	Weigh	ted Aver	age		
Tc Len (min) (f	igth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0					Direct Entry, 10 MINUTE MINIMUM	
			Subc	atchment	25S: OVERLAND FLOW TO R6	
unoff =		0.2 cfs @	12.16 hr	rs, Volume	= 0.03 af, Depth= 0.39"	
unoff by SC	CS TR-	20 metho	od, UH=S	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs	
pe III 24-h	r 1-yr	Rainfall	=2.50"			
Area (ac)	CN	Descrip	ption		-	
0.140	98	imperv	vious area	1	140	
0.426	74	grass g	ood c soi	1		
0.238	39	grass g	ood a soi	1		
Tc Len min) (fe	gth eet)	Slope V	Velocity (ft/sec)	Capacity (cfs)	Description	
		(III) III)				
10.0		(11/11)			Direct Entry, 10 MINUTE MINIMUM	
10.0	,	(11/11)	Subca	atchment	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5	
10.0	,	(11/ 11)	Subca	atchment	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5	
10.0 unoff =	•	0.3 cfs @	Subc a 12.12 hr	atchment s, Volume=	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5 = 0.02 af, Depth= 1.45"	
10.0 unoff =	'S TR-	0.3 cfs @	Subca 12.12 hr	atchment s, Volume - CS. Time Si	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5 = 0.02 af, Depth= 1.45" pan= 5.00-30.00 hrs. dt= 0.05 hrs.	
10.0 unoff = unoff by SC ype III 24-hi	STR- r 1-yr	0.3 cfs @ 20 metho Rainfall=	Subca 12.12 hr hd, UH=S =2.50"	atchment s, Volume= CS, Time Sj	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5 = 0.02 af, Depth= 1.45" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 unoff = unoff by SC ype III 24-h	STR- r 1-yr	0.3 cfs @ 20 metho Rainfall=	Subca 12.12 hr rd, UH=S =2.50"	atchment s, Volume= CS, Time Sj	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5 = 0.02 af, Depth= 1.45" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 unoff = unoff by SC ype III 24-hu Area (ac)	S TR- r 1-yr CN	0.3 cfs @ 20 metho Rainfall= Descrip	Subca 12.12 hr id, UH=S =2.50" ption	atchment s, Volume= CS, Time Sj	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5 = 0.02 af, Depth= 1.45" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 unoff = unoff by SC ype III 24-hr <u>Area (ac)</u> 0.120	CN 98	0.3 cfs @ 20 metho Rainfall= Descrip IMPER	Subc : 12.12 hr id, UH=S =2.50" <u>otion</u> VIOUS A	atchment s, Volume= CS, Time Sj AREAS	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5 = 0.02 af, Depth= 1.45" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 10.0 unoff = unoff by SC ype III 24-hr <u>Area (ac)</u> 0.120 0.070	CS TR- r 1-yr <u>CN</u> 98 74	0.3 cfs @ 20 metho Rainfall= Descrip IMPER GRASS	Subca 12.12 hr rd, UH=S =2.50" otion VIOUS A GROUP	atchment s, Volume= CS, Time Sp AREAS C	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5 = 0.02 af, Depth= 1.45" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 2unoff = 2unoff by SC 2ype III 24-hi Area (ac) 0.120 0.070 0.190	CN 98 74 89	0.3 cfs @ 20 metho Rainfall= Descrip IMPER GRASS Weight	Subca 12.12 hr hd, UH=S =2.50" otion VIOUS A GROUP red Avera	atchment s, Volume= CS, Time Sj CS, Time Sj AREAS C age	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5 = 0.02 af, Depth= 1.45" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 10.0	CS TR- r 1-yr <u>CN</u> 98 74 89 gth	0.3 cfs @ 20 metho Rainfall= Descrip IMPER GRASS Weight Slope V	Subca 12.12 hr id, UH=S =2.50" otion VIOUS A GROUP red Avera /elocity	atchment s, Volume= CS, Time Sp AREAS C age Capacity	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5 = 0.02 af, Depth= 1.45" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description	
10.0 10.0 2unoff by SC ype III 24-h: <u>Area (ac)</u> 0.120 0.070 0.190 Tc Leng (min) (fe	CS TR- r 1-yr <u>CN</u> 98 74 89 gth eet)	0.3 cfs @ 20 metho Rainfall= Descrip IMPER GRASS Weight Slope V (ft/ft)	Subca 12.12 hr od, UH=S =2.50" otion VIOUS A GROUP ted Avera /elocity (ft/sec)	atchment s, Volume= CS, Time Sp AREAS C age Capacity (cfs)	Direct Entry, 10 MINUTE MINIMUM 26S: OVERLAND FLOW TO R5 = 0.02 af, Depth= 1.45" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description	

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Prepared by Meridian Engineering Inc	Type III 24-hr 1-yr Rainfall=2.50		
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Subcatchment 28S: 0	OVERLAND FLOW TO R1		
Runoff = 0.2 cfs @ 12.13 hrs, Volume=	0.02 af, Depth= 0.84"		
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5. Type III 24-hr 1-yr Rainfall=2.50"	00-30.00 hrs, dt= 0.05 hrs		
Area (ac) CN Description			
0.125 98 IMPERVIOUS AREAS			
0.050 39 GRASS GROUP A			
0.235 79 Weighted Average			
0.200 77 Weighted Weinge			
Tc Length Slope Velocity Capacity Descript (min) (feet) (ft/ft) (ft/sec) (cfs)	ption		
10.0 Direct	Entry, 10 MINUTE MINIMUM		
Subcatchment 29S	OVERLAND FLOW R2		
Runoff = $0.2 \text{ cfs} @ 12.12 \text{ hrs, Volume}=$	0.02 af, Depth= 1.00"		
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.0 Type III 24-hr 1-yr Rainfall=2.50"	0-30.00 hrs, dt= 0.05 hrs		
Area (ac) CN Description			
Area (ac) CN Description 0.131 98 IMPERVIOUS AREAS			
Area (ac)CNDescription0.13198IMPERVIOUS AREAS0.04039GRASS GROUP A			
Area (ac)CNDescription0.13198IMPERVIOUS AREAS0.04039GRASS GROUP A0.04074GRASS GROUP C			

Subcatchment 30S: OVERLAND FLOW TO DP 30

Direct Entry, 10 MINUTE MINIMUM

Runoff = 1.4 cfs @ 12.34 hrs, Volume= 0.21 af, Depth= 0.39"

10.0

Area (ac)	CN	Description					
0.410	98	WETLANDS					
0.090	89	RAVEL PATH GROUP C					
0.030	76	GRAVEL PATH GROUP A					
1.000	74	GRASS GROUP C					
2.100	70	VOODS GROUP C					
1.580	30	WOODS GROUP A					
1.150	98	roof area					
6.360	68	Weighted Average					

Type III 24-hr 1-yr Rainfall=2.50"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0400	0.1		Sheet Flow, SHEET FLOW
	×				Woods: Light underbrush n= 0.400 P2= 3.10"
0.4	113	0.0970	5.0		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv= 16.1 fps
0.5	252	0.2300	7.7		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv= 16.1 fps
0.8	202	0.0690	4.2		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv=16.1 fps
1.0	627	0.0480	10.2	336.08	Channel Flow, CHANNEL THRU WETLANDS
_					Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.030

19.2 1,294 Total

Subcatchment 31S: OVERLAND FLOW TO R31

Runoff	=	0
nunon		υ.

0 cfs @ 14.87 hrs, Volume= 0.00 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac)	CN	Description									
0.033	98	IMPERV AREAS on	IMPERV AREAS on lot								
0.626	39	>75% Grass cover, Good, HSG A									
0.156	98	98 Paved area in Rte. 1									
0.815	53	Weighted Average									
Tc Len (min) (f	igth eet)	Slope Velocity Cap (ft/ft) (ft/sec)	acity Description (cfs)								

10.0

Direct Entry, 10 min. minimum

Subcatchment 32S: OVERLAND FLOW TO R36

Runoff = 0.1 cfs @ 12.14 hrs, Volume= 0.01 af, Depth= 0.61"

Area	(ac)	CN	Desc	Description						
0.	.090	98	IMPI	ERVIOUS	AREAS					
0.	0.070 74 GRASS GROUP C									
0.060 39			GRA	SS GROUI	ΡA					
0.	220	74	Weig	ted Aver	age					
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
10.0						Direct Entry, 10 MINUTE MINIMUM				

		5/14/200
	Subcatchment 33S: OVERLAND	FLOW TO R9
Runoff =	0.1 cfs @ 12.11 hrs, Volume= 0.01 af, Depth=	= 2.24"
Runoff by SCS	TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt=	0.05 hrs
and the second sec	Dainfall-0 EOU	
Type III 24-hr 1	-yr Kallfall-2.50"	
Type III 24-hr 1 Area (ac) C	CN Description	
Type III 24-hr 1 <u>Area (ac) C</u> 0.030	CN Description 98 impervious area	
Type III 24-hr 1 <u>Area (ac) C</u> 0.030 Tc Lengtl (min) (foot	CN Description 98 impervious area h Slope Velocity Capacity Description (ft/ft) (ft/cap) (cfc)	

Subcatchment 34S: OVERLAND FLOW TO R35

Runoff = 0.1 cfs @ 12.11 hrs, Volume= 0.01 af, Depth= 2.24"

0

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Area 0.	<u>(ac) CN</u> .060 98	Descr I Descr IMPE	RVIOUS	AREAS	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 MINUTE MINIMUM
		Ū.	Subcatel	nment 35	S: OVERLAND FLOW TO POND 3
Runoff	=	2.5 cfs @	12.12 hr	s, Volume	= 0.21 af, Depth= 1.31"
Runoff I Type III	by SCS TR 24-hr 1-y	-20 meth r Rainfal	od, UH=S 1=2.50"	CS, Time Sj	pan= 5.00-30.00 hrs, dt= 0.05 hrs

Area (ac)	CN	Desc	ription						
0.630	98	IMPI	ERVIOUS	AREAS					
0.730	98	IMPI	ERVIOUS	POND BOT	ТОМ				
0.056	39	GRA	GRASS GROUP A						
0.426	61	GRA	GRASS GROUP B						
0.024	76	GRA	GRAVEL GROUP A						
0.031	85	GRA	VEL GROU	JP B					
1.897	87	Weig	hted Aver	age					
Tc Ler (min) (f	ngth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
10.0					Direct Entry, MINIMUM - TO POND 3				
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Subcatchment 36S: OVERLAND FLOW TO R56(PCB#4)

Runoff = 0.4 cfs @ 12.19 hrs, Volume= 0.05 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac)	CN	Description
0.140	98	IMPERVIOUS AREA
0.035	70	WOODS GROUP C
0.187	74	GRASS GROUP C
0.233	39	GRASS GROUP A
0.246	98	Paved parking & roofs
0.841	75	Weighted Average

Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
11.5	100	0.1000	0.1		Sheet Flow, SHEET FLOW
					Woods: Light underbrush n= 0.400 P2= 3.10"
0.2	84	0.1400	6.0		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv=16.1 fps
0.5	132	0.0760	4.4		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv=16.1 fps
0.1	67	0.5000	11.4		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv= 16.1 fps
0.6	80	0.0200	2.3		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv= 16.1 fps
0.1	54	0.2200	7.6		Shallow Concentrated Flow, OVERLAND TO DRIVE
					Unpaved Kv=16.1 fps
0.4	71	0.0170	2.6		Shallow Concentrated Flow, DRIVE TO PCB#4
					Paved Kv= 20.3 fps

13.4 588 Total

Subcatchment 37S: OVERLAND FLOW TO R50 (CB#232)

Runoff

0.6 cfs @ 12.17 hrs, Volume= 0

0.05 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac)	CN	Description	_
0.150	98	IMPERVIOUS AREA	
0.250	70	WOODS GOOD GROUP C	
0.282	74	GRASS GOOD GROUP C	
0.050	39	GRASS GOOD GROUP A	
0.090	98	Paved parking & roofs	
0.822	78	Weighted Average	

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Type III 24-hr 1-yr Rainfall=2.50"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.7	100	0.1200	0.2		Sheet Flow, SHEET FLOW	
					Woods: Light underbrush n= 0.400 P2= 3.10"	
0.9	315	0.1200	5.6		Shallow Concentrated Flow, CONCENTRATED FLOW	
					Unpaved Kv= 16.1 fps	
0.0	34	0.5000	11.4		Shallow Concentrated Flow, OVERLAND CUT	
					Unpaved Kv= 16.1 fps	
0.6	80	0.0200	2.3		Shallow Concentrated Flow, OVERLAND CUT TO ROAD	
					Unpaved Kv= 16.1 fps	
0.8	217	0.0450	4.3		Shallow Concentrated Flow, ROAD GUTTER FLOW	
				_	Paved Kv= 20.3 fps	

13.0 746 Total

Subcatchment 39S: PAVEMENT FLOW TO R46

Runoff

0.2 cfs @ 12.11 hrs, Volume= 0.01 af, Depth= 1.96"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area	(ac)	CN	Desc	ription		
0.	070	98	PAV	EMENT FI	LOW	
0.	0.010 74 GRASS GROUP C					
0.	080	95	Weig	ghted Aver	age	
Tc	Len	gth	Slope	Velocity	Capacity	Description
(min)	(fe	eet)	(ft/ft)	(ft/sec)	(cfs)	
10.0						Direct Entry, 10 MINUTE MINIMUM
				Subcat	chment 4	0S: OVERLAND FLOW TO DP 40

0.0 cfs @ 5.00 hrs, Volume= 0.00 af, Depth= 0.00" Runoff =

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac)	CN	Description
0.200	39	GRASS GROUP A
0.310	30	WOODS GROUP A
0.510	34	Weighted Average

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Type III 24-hr 1-yr Rainfall=2.50"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.2		Sheet Flow, SHEET FLOW
					Woods: Light underbrush n= 0.400 P2= 3.10"
0.2	65	0.2000	7.2		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv= 16.1 fps
0.7		_			Direct Entry, 10 MINUTE MINIMUM
10.0	165	Total			

Subcatchment 41S: PAVEMENT FLOW TO R48

Runoff = 0.2 cfs @ 12.11 hrs, Volume= 0.02 af, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

((0	090 98		iption		
0	.070 70	PAVE	EMENT FI	JOW	
C	.020 74	GRAS	S GROUI	°C	
	.110 94	Weig	hted Aver	age	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 MINUTE MINIMUM
			Subca	itchment	42S: PAVEMENT FLOW TO R47
Runoff	=	0.2 cfs @	9 12.11 hr	s, Volume	= 0.01 af, Depth= 2.24"
unoff ype II Area	by SCS TR [24-hr 1-y] (ac) CN	-20 meth r Rainfal Descr	od, UH=S 1=2.50" iption	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
0	.080 98	PAVE	MENT FL	.OW	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 MINUTE MINIMUM
			Subca	tchment	43S: PAVEMENT FLOW TO R49
lunoff	=	0.2 cfs @	12.11 hr	s, Volume	= 0.02 af, Depth= 2.24"

0.100 98 PAVEMENT FLOW

	AD® 7.00 s/n 00	0814 © 1986	-2003 Appl	ed Microcomputer Systems	3/14/2006
Та	Longth Clan	. Volositu	Conseiler	Developing	
(min)	(feet) (ft/ft) (ft/sec)	(cfs)	Description	
10.0				Direct Entry, 10 MINUTE MINI	MUM
		Suba	tehmoni	MS. DAVEMENT EL OM TO	DE1
		Subc	atenniem	445: FAVEIVIENT FLOW TO	K51
Runoff	= 0.2 cfs	s@ 12.11 h	rs, Volume	= 0.02 af, Depth= 2.24"	
Runoff b Type III :	y SCS TR-20 me 24-hr 1-yr Raini	ethod, UH=9 fall=2.50"	SCS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (a	ac) CN Des	cription			
0.1	00 98 PA	VEMENT FL	.OW		
Tc (min)	Length Slope (feet) (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0				Direct Entry, 10 MINUTE MININ	IUM
			Subcate	hment 45S: Runoff to PCB	
D	0.0	@ 10 och			
Kunon	= 0.3 CIS	@ 12.00 hr	s, volume	= 0.02 ar, Depth= 2.24"	
Damaffh			CC Time C	F 00 00 001 1. 0 071	
Kunon by	SCS TR-20 me	thod, $UH=S$	C_5 , Time 5	an = 5.00-30.00 hrs, $dt = 0.05$ hrs	
Type III 2	SCS TR-20 met 4-hr 1-yr Rainf	thod, UH=S all=2.50"	C5, 11me 5	oan= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 2 Area (a	SCS TR-20 me 4-hr 1-yr Rainf c) CN Desc	thod, UH=S all=2.50" cription	C5, 11me 5	oan= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 2 <u>Area (a</u> 0.11	SCS TR-20 me 4-hr 1-yr Rainf c) CN Desc 8 98 imp	thod, UH=S all=2.50" cription ervious	C5, Time 5	oan= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 2 Area (a 0.11 Tc I	SCS TR-20 met 4-hr 1-yr Rainf c) <u>CN Desc</u> 8 98 impo Length Slope	thod, UH=S all=2.50" cription ervious Velocity	Capacity	Description	
Area (a 0.11 Tc I (min)	SCS TR-20 mer 4-hr 1-yr Rainf c) CN Desc 8 98 impo Length Slope (feet) (ft/ft)	thod, UH=S all=2.50" cription ervious Velocity (ft/sec)	Capacity (cfs)	Description	
Area (a 0.11 Tc I (min) 6.0	SCS TR-20 met 4-hr 1-yr Rainf c) <u>CN Desc</u> 8 98 impo ength Slope (feet) (ft/ft)	thod, UH=S all=2.50" ervious Velocity (ft/sec)	Capacity (cfs)	Description Direct Entry, 6 min. minimum	
Area (a 0.11 Tc I (min) 6.0	SCS TR-20 met 4-hr 1-yr Rainf c) <u>CN Desc</u> 8 98 impo ength Slope (feet) (ft/ft)	thod, UH=S all=2.50" ervious Velocity (ft/sec)	Capacity (cfs) Subcate	Description Direct Entry, 6 min. minimum nment 46S: Runoff to PCB	
Area (a 0.11 Tc 1 (min) 6.0	SCS TR-20 met 4-hr 1-yr Rainf c) <u>CN Desc</u> 8 98 impe Length Slope (feet) (ft/ft)	thod, UH=S all=2.50" cription ervious Velocity (ft/sec)	Capacity (cfs) Subcatc	Description Direct Entry, 6 min. minimum nment 46S: Runoff to PCB	
Area (a 0.11 Tc 1 (min) 6.0	SCS TR-20 met 4-hr 1-yr Rainf c) <u>CN Desc</u> 8 98 impo ength Slope (feet) (ft/ft) = 0.3 cfs	thod, UH=S all=2.50" ervious Velocity (ft/sec) @ 12.06 hrs	Capacity (cfs) Subcatc	Description Direct Entry, 6 min. minimum nment 46S: Runoff to PCB 0.02 af, Depth= 2.24"	
Area (a 0.11 Tc 1 (min) 6.0 Runoff	 SCS TR-20 met 4-hr 1-yr Rainf c) CN Desc 8 98 impose .8 9	thod, UH=S all=2.50" cription ervious Velocity (ft/sec) @ 12.06 hrs hod, UH=S	Capacity (cfs) Subcatcl 5, Volume= CS, Time Sp	Description Direct Entry, 6 min. minimum nment 46S: Runoff to PCB 0.02 af, Depth= 2.24" ean= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (a 0.11 Tc 1 (min) 6.0 Runoff Runoff by Type III 24	SCS TR-20 met 4-hr 1-yr Rainf c) CN Desc 8 98 impe Length Slope (feet) (ft/ft) = 0.3 cfs SCS TR-20 met 4-hr 1-yr Rainfa	thod, UH=S all=2.50" cription ervious Velocity (ft/sec) @ 12.06 hrs hod, UH=S0 all=2.50"	Capacity (cfs) Subcatc s, Volume= CS, Time Sp	Description Direct Entry, 6 min. minimum nment 46S: Runoff to PCB 0.02 af, Depth= 2.24" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (a 0.11 Tc 1 (min) 6.0 Runoff Sunoff by Type III 24 Area (ad	SCS TR-20 met 4-hr 1-yr Rainf c) <u>CN Desc</u> 8 98 impo Length Slope (feet) (ft/ft) = 0.3 cfs SCS TR-20 met 4-hr 1-yr Rainfa c) <u>CN Desc</u>	thod, UH=S all=2.50" cription ervious Velocity (ft/sec) @ 12.06 hrs hod, UH=S0 all=2.50" ription	Capacity (cfs) Subcatc	Description Direct Entry, 6 min. minimum mment 46S: Runoff to PCB 0.02 af, Depth= 2.24" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (a 0.11 Tc 1 (min) 6.0 Runoff Runoff by Ype III 24 <u>Area (ac</u> 0.12	SCS TR-20 met 4-hr 1-yr Rainf c) <u>CN Desc</u> 8 98 impo Length Slope (feet) (ft/ft) = 0.3 cfs SCS TR-20 met 1-hr 1-yr Rainfa c) <u>CN Desc</u> 3 98 impe	thod, UH=S all=2.50" cription ervious Velocity (ft/sec) @ 12.06 hrs hod, UH=S(all=2.50" ription ervious	Capacity (cfs) Subcatcl 5, Volume= CS, Time Sp	Description Direct Entry, 6 min. minimum mment 46S: Runoff to PCB 0.02 af, Depth= 2.24" oan= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (a 0.11 Tc 1 (min) 6.0 Runoff Runoff by Type III 24 Area (ac 0.12 Tc L (min)	sCS TR-20 met 4-hr 1-yr Rainf c) CN Desc 8 98 impo Length Slope (feet) (ft/ft) = 0.3 cfs SCS TR-20 met 1-hr 1-yr Rainfa c) CN Desc 3 98 impo Length Slope (feet) (ft/ft)	thod, UH=S all=2.50" cription ervious Velocity (ft/sec) @ 12.06 hrs hod, UH=SC all=2.50" ription ervious Velocity (ft/sec)	Capacity (cfs) Subcatcl s, Volume= CS, Time Sp Capacity (cfs)	Description Direct Entry, 6 min. minimum mment 46S: Runoff to PCB 0.02 af, Depth= 2.24" ban= 5.00-30.00 hrs, dt= 0.05 hrs Description	

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Type III 24-hr 1-yr Rainfall=2.50"

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Subcatchment 47S: Runoff to PCB

Runoff =	1.0 cfs @	12.16 hrs,	Volume=	0.09 af,	Depth=	1.38
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area	(ac) C	N	Desc	ription			
0.	0.472 98 impervious			rvious	11 A		
0.105 70 Woods, Good, HSG C							
0.	187	74	>75%	Grass cov	er, Good, H	HSG C	_
0.	764	88	Weig	hted Aver	age		
Tc (min)	Length (feet	1)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
11.5	100) (0.1000	0.1		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.10"	
0.4	130) (0.1400	6.0		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps	
0.9	175	5 (0.0250	3.2		Shallow Concentrated Flow, Paved Kv= 20.3 fps	

12.8 405 Total

Subcatchment 48S: Side p-lot runoff

Runoff = 0.7 cfs @ 12.06 hrs, Volume= 0.05 af, Depth= 2.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area	(ac)	CN	Desc	ription					
0.	.016	74	>75%	>75% Grass cover, Good, HSG C					
0.	265	98	Pave	d parking	& roofs				
0.	.281	97	Weig	hted Aver	age				
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
6.0						Direct Entry,			

Subcatchment 49S: Future parking expansion

Runoff = 1.0 cfs @ 12.06 hrs, Volume= 0.08 af, Depth= 1.96"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac)	CN	Description	
0.046	70	Woods, Good, HSG C	
0.414	98	Paved parking & roofs	
0.460	95	Weighted Average	

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Tc Length Slope Velocity Capacity Description	
(min) (feet) (ft/ft) (ft/sec) (cfs)	
0.0 Direct Entry,	
Subcatchment 50S: OVERLAND FLOW	TO DP 50
Runoff = 0.0 crs @ 5.00 hrs, Volume= 0.00 af, Depth= 0.00'	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 h	rs
Type III 24-hr 1-yr Rainfall=2.50"	
Area (ac) CN Description	
0.190 39 GRASS GROUP A	
0.140 30 WOODS GROUP A	
0.550 55 Weighted Average	
Tc Length Slope Velocity Capacity Description	
(min) (feet) (ft/ft) (ft/sec) (cfs)	
······································	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hr Type III 24-hr 1-yr Rainfall=2.50"	S
Area (ac) CN Description	
0.120 98 IMPERVIOUS AREA	
0.059 70 WOODS GOOD GROUP C	
0.260 73 Weighted Average	
Tc Length Slope Velocity Capacity Description	
10.0 Direct Entry, MINIMUM	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Subcatchment 59S: Runoff to Cult	ecs
Runoff = 0.7 cfs @ 12.12 hrs, Volume= 0.06 af, Depth= 1.31"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs ype III 24-hr 1-yr Rainfall=2.50"	5
Area (ac) CN Description	
0.297 98 Paved parking & roofs	
0.297 98 Paved parking & roofs 0.236 74 >75% Grass cover, Good, HSG C	

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3250 POST-FEB_2006 Iype III 2	4-hr 1-yr Rainfall=2.50
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Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minimum	
Subcatchment 60S: Runoff to PCB	
Runoff = $0.4 \text{cfs} @ 12.11 \text{hrs} \text{Volume} = 0.03 \text{af} \text{Denth} = 1.78''$	<i>i</i> -
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 24-hr 1-yr Rainfall=2.50"	
Area (ac) CN Description	
0.174 98 Paved parking & roofs	
0.042 74 >75% Grass cover, Good, HSG C	
0.216 93 Weighted Average	
Tc Length Slope Velocity Capacity Description	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 min. minimum Subcatchment 61S: FRONT PARKING- BLDG 12	
Tc Length Slope Velocity Capacity Description (min) (feet) (ff/ft) (ff/sec) (cfs) 10.0 Direct Entry, 10 min. minimum Subcatchment 61S: FRONT PARKING- BLDG 12 Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 2.24" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr. Rainfall=2 50"	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 min. minimum Subcatchment 61S: FRONT PARKING- BLDG 12 Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 2.24" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 min. minimum Subcatchment 61S: FRONT PARKING- BLDG 12 Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 2.24" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 min. minimum Subcatchment 61S: FRONT PARKING- BLDG 12 Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 2.24" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.190 98 Paved parking & roofs	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 min. minimum Subcatchment 61S: FRONT PARKING- BLDG 12 Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 2.24" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.190 98 Paved parking & roofs Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
TcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 min. minimumSubcatchment 61S: FRONT PARKING- BLDG 12Runoff=0.4 cfs @12.11 hrs, Volume=0.04 af, Depth= 2.24"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 1-yr Rainfall=2.50"Area (ac)CNDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacity10.0Direct Entry, 10 MIN. MINIMUM	
TcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 min. minimumSubcatchment 61S: FRONT PARKING- BLDG 12Runoff=0.4 cfs @12.11 hrs, Volume=0.04 af, Depth= 2.24"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt=0.05 hrsType III 24-hr 1-yrRainfall=2.50"Area (ac)CNDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacity10.0Direct Entry, 10 MIN. MINIMUMSubcatchment 62S: SIDE PARKING- BLDG 12	
TcLengthSlopeVelocityCapacityDescription (min) $(feet)$ (ft/ft) (ft/sec) (cfs) 10.0Direct Entry, 10 min. minimumSubcatchment 61S: FRONT PARKING- BLDG 12Runoff= $0.4 cfs @ 12.11 hrs, Volume=$ $0.04 af, Depth= 2.24"$ Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 1-yrRainfall=2.50"Area (ac)CNDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacityDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacityDescription0.00Direct Entry, 10 MIN. MINIMUMSubcatchment 62S: SIDE PARKING- BLDG 12Runoff= $1.0 cfs @ 12.11 hrs, Volume=$ $0.09 af, Depth= 2.24"$	
TcLengthSlopeVelocityCapacityDescription (min) (feet)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 min. minimumSubcatchment 61S: FRONT PARKING- BLDG 12Runoff=0.4 cfs @12.11 hrs, Volume=0.04 af, Depth= 2.24"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 1-yrRainfall=2.50"Area (ac)CNDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacityIt(feet)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 MIN. MINIMUMSubcatchment 62S: SIDE PARKING- BLDG 12Runoff=1.0 cfs @12.11 hrs, Volume=0.09 af, Depth= 2.24"Runoff=1.0 cfs @12.11 hrs, Volume=0.09 af, Depth= 2.24"Runoff=1.0 cfs @12.11 hrs, Volume=0.09 af, Depth= 2.24"	
TcLengthSlopeVelocityCapacityDescription (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0Direct Entry, 10 min. minimumSubcatchment 61S: FRONT PARKING- BLDG 12Runoff= $0.4 cfs @ 12.11 hrs$, Volume= $0.04 af$, Depth= 2.24"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 1-yrRainfall=2.50"Area (ac)CNDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacityDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacityDirect Entry, 10 MIN. MINIMUMSubcatchment 62S: SIDE PARKING- BLDG 12Runoff= $1.0 cfs @ 12.11 hrs, Volume=$ $0.09 af$, Depth= 2.24"Runoff= $1.0 cfs @ 12.11 hrs, Volume=$ $0.09 af$, Depth= 2.24"Runoff= $1.0 cfs @ 12.11 hrs, Volume=$ $0.09 af$, Depth= 2.24"Runoff= $1.0 cfs @ 12.11 hrs, Volume=$ $0.09 af$, Depth= 2.24"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 1-yrRainfall=2.50"Area (ac)CNDescription	

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Subcatchment 63S: ROOF- BLI	DG 12
Runoff = $24 \text{ cfs} @ 1211 \text{ hrs} Volume= 0.21 \text{ sf} Dopth= 2^{\circ}$	24"
	24
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50"	5 hrs
Area (ac) CN Description	
1.150 98 Paved parking & roofs	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 MIN. MI	INIMUM
Subcatchment 64S: ROOF- BLD	9G 11
Runoff = 16 cfc@ 1211 hrs. Volumo= 014 of Dorth= 22	40
	4
$\sim 1.0 \text{ cm} = 1.0 \text{ cm} = 12.11 \text{ ms}, \text{ volume} = 0.14 \text{ ar}, \text{ Deptn} = 2.2$	
Runoff by SCS TR-20 method. UH=SCS. Time Span= $5.00-30.00$ hrs. dt= 0.05	hre
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50"	hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50"	hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description	hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" <u>Area (ac) CN Description</u> 0.760 98 Paved roads w/curbs & sewers	hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers	hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description	hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (ft/ft) 10.0 Direct Entry, 10 MIN. MI	hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 10.0 Direct Entry, 10 MIN. MI	hrs NIMUM
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MI Subcatchment 65S: FRONT PARKING	hrs NIMUM G- BLDG 11
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 0.14 ar, Depth= 2.2 Runoff Subcatchment 655: Construction 0.05 af Denth= 1.12	hrs NIMUM G- BLDG 11
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 10.0 Direct Entry, 10 MIN. MI Subcatchment 65S: FRONT PARKING Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12	hrs NIMUM G- BLDG 11 2"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 10.0 Direct Entry, 10 MIN. MI Subcatchment 65S: FRONT PARKING Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12 Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05	hrs NIMUM G- BLDG 11 2" hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 0.14 ar, Depth= 2.2 Runoff Slope Velocity Sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 0.00 Direct Entry, 10 MIN. MI Subcatchment 65S: FRONT PARKING Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12 Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= Type III 24-hr 1-yr Rainfall=	hrs NIMUM G- BLDG 11 2" hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 0.14 ar, Depth= 2.2 Runoff 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 0.14 ar, Depth= 2.2 Runoff 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) ID Direct Entry, 10 MIN. MI Subcatchment 65S: FRONT PARKING Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12 Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 from State 1.12 State 1.12 hrs Super III 24-hr 1-yr Rainfall=2	hrs NIMUM G- BLDG 11 2" hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) 10.0 Direct Entry, 10 MIN. MI Subcatchment 65S: FRONT PARKING Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12 Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Supper III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description	hrs NIMUM G- BLDG 11 2" hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) 10.0 Direct Entry, 10 MIN. MI Subcatchment 65S: FRONT PARKING Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12 Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Suppe III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.200 98 Paved parking & roofs	hrs NIMUM G- BLDG 11 2" hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 0.05 af, Depth= 1.12 Nunoff 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12 0.05 af, Depth= 1.12 Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.200 98 Paved parking & roofs 0.290 74 0.200 98 Paved parking & roofs 0.290 74 >75% Grass cover, Good, HSG C	hrs NIMUM G- BLDG 11 2" hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 0.05 af, Depth= 1.12 Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12 Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.200 98 Paved parking & roofs 0.290 74 >75% Grass cover, Good, HSG C 0.490 84	hrs NIMUM G- BLDG 11 2" hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) 10.0 Direct Entry, 10 MIN. MI Subcatchment 65S: FRONT PARKING Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12 Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12 Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= Type III 24-hr 1-yr Rainfall= Yara (ac) CN Description 0.200 98 Paved parking & roofs 0.290 74 >75% Grass cover, Good, HSG C 0.490 84 Weighted Average Tr Length Slone <td>hrs NIMUM G- BLDG 11 2" hrs</td>	hrs NIMUM G- BLDG 11 2" hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 Type III 24-hr 1-yr Rainfall=2.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 0.05 af, Depth= 1.12 Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.12 Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 for the second se	hrs NIMUM G- BLDG 11 2" hrs

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Subcatchment 66S: RIGHT PARKING- BLDG 11

Runoff = 0.7 cfs @ 12.12 hrs, Volume= 0.06 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac) CN Description
0.280 98 Paved parking & roofs
0.300 74 >75% Grass cover, Good, HSG C
0.580 86 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM
Subcatchment 67S: LOADING AREA- BLDG 11
Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 2.24"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"
Area (ac) CN Description
0.200 98 Paved parking & roofs
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM
Subastahmant 685: PARKING LOT BLDC #10
Subtatenment 665. 1 ARKING LOT BEDG#10
Runoff = 1.3 cfs @ 12.12 hrs, Volume= 0.11 af, Depth= 1.31"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"
Area (ac) CN Description
0.520 98 Paved parking & roofs
0.470 74 >75% Grass cover, Good, HSG C
0.990 8/ Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM

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Type III 24-hr 1-yr Rainfall=2.50"

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Subcatchment 69S: ROOF - BLDG 10

Runoff = 0.5 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 2.24"

Area (ac) CN Description
0.240 98 Paved parking & roofs
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM
Subcatchment 70S: Runoff to PCB58
Runoff = 0.7 cfs @ 12.12 hrs, Volume= 0.06 af, Depth= 1.31"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"
0.288 98 Paved parking & roofs
0.241 74 >75% Grass cover, Good, HSG C
0.529 87 Weighted Average Tc Length Slope Velocity Capacity Description
(min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 mill. Infilmult
Subcatchment 71S: Runoff to PCB57
Runoff = 0.2 cfs @ 12.16 hrs, Volume= 0.02 af, Depth= 0.42"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"
Area (ac) CN Description
0.278 98 Paved parking & roofs
0.278 39 >75% Grass cover, Good, HSG A
0.556 69 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum

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Runoff	=	0.5 cfs @	12.12 hrs,	Volume=	0.04 af. Depth= 1.31"
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Area (ac) CN Description	
0.199 98 Paved parking & roofs	
0.171 74 >75% Grass cover, Good, HSG C	
0.370 87 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minimum	
Subcatchment 73S: Runoff to PCB52	
Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 1.69"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"	
Area (ac) CN Description	
0.231 98 Paved parking & roofs 0.028 39 >75% Grass cover, Good, HSG A	
0.259 92 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minimum	
Subcatchment 74S: Runoff to PCB60	
Runoff = 0.6 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.06"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"	
Area (ac) CN Description	
0.455 98 Paved parking & roofs	
0.151 39 >75% Grass cover, Good, HSG A	
0.606 83 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minimum	

Subcatchment 75S: Runoff to PCB67

Runoff = 0.1 cfs @ 12.15 hrs, Volume= 0.02 af, Depth= 0.46"

Area (ac) CN Description
0.225 98 Paved parking & roofs
0.203 39 >75% Grass cover, Good, HSG A
0.428 70 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 76S: Runoff to PCB65
Runoff = 0.1 cfs @ 12.14 hrs, Volume= 0.01 af, Depth= 0.61"
Runoff by SCS TR-20 method LIH=SCS. Time Span= $5.00-30.00$ brs. dt= 0.05 brs.
Type III 24-hr 1-yr Rainfall=2.50"
Area (ac) CN Description
0.064 98 Paved parking & roofs
0.043 39 >75% Grass cover, Good, HSG A
0.107 74 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 775: Runoff to PCB79
Runoff = 0.4 cfs @ 12.12 hrs, Volume= 0.03 af, Depth= 1.31"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"
Area (ac) CN Description
0.232 98 Paved parking & roofs
0.052 39 >75% Grass cover, Good, HSG A
0.204 0/ Weighted Average
TcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)
10.0 Direct Entry, 10 min. minimum

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Subcatchment 78S: Runoff to PCB78

Runoff	-	0.3 cfs @	12.11 hrs,	Volume=	0.03 af, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac)	CN Description	
0.173	98 Paved parking & roofs	
0.014	39 >75% Grass cover, Good, HSG A	
0.187	94 Weighted Average	
Tc Leng (min) (fee	th Slope Velocity Capacity Description t) (ft/ft) (ft/sec) (cfs)	
10.0	Direct Entry, 10 min. minimum	
	Subcatchment 79S: Runoff to PCB62	
Runoff =	0.1 cfs @ 12.16 hrs, Volume= 0.02 af, Depth= 0.42"	
Runoff by SCS	TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 24-hr	1-yr Rainfall=2.50"	-
Area (ac)	CN Description	
0.232 0.229	 98 Paved parking & roofs 39 >75% Grass cover, Good, HSG A 	
0.461	69 Weighted Average	
Tc Lengt (min) (fee	h Slope Velocity Capacity Description t) (ft/ft) (ft/sec) (cfs)	
10.0	Direct Entry, 10 min. minimum	
	Subcatchment 80S: Runoff to PCB66	
<pre>tunoff =</pre>	0.5 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 1.69"	
Runoff by SCS	TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 24-hr	l-yr Rainfall=2.50"	
Area (ac)	CN Description	
0.250	98 Paved parking & roofs	
0.028	39 >/5% Grass cover, Good, H5G A 92 Waighted Average	
0.270	72 Weighten Average	
Tc Lengt (min) (fee	h Slope Velocity Capacity Description t) (ft/ft) (ft/sec) (cfs)	
10.0	Direct Entry, 10 min. minimum	

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Subcatchment 81S: Runoff to PCB76

Runoff = 0.3 cfs @ 12.12 hrs, Volume= 0.03 af, Depth= 1.31"

Area (ac) CN Description
0.198 98 Paved parking & roofs
0.045 39 >75% Grass cover, Good, HSG A
0.243 87 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 82R: Runoff to PCB70
Runoff = 0.1 cfs @ 12.32 hrs, Volume= 0.01 af, Depth= 0.24"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.50"
Area (ac) CN Description
0.212 98 Paved parking & roofs 0.311 39 >75% Grass cover Good HSG A
0.523 63 Weighted Average
0 0
Tc Length Slope Velocity Capacity Description
10.0 Direct Entry, 10 min. minimum
Substatement 928, Dur off to DCD70
Subcatchment 835: Runoff to PCB/2
Runoff = 0.3 cfs @ 12.12 hrs, Volume= 0.03 af, Depth= 1.00"
Runoff hu SCS TR 20 method UHI-SCS Time Score 5 00 20 00 has de 0.05 has
Fype III 24-hr 1-yr Rainfall=2.50"
Area (ac) CN Description
0.224 98 Paved parking & roots 0.086 39 >75% Grass cover Good HSC A
0.310 82 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum

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Subcatchment 84S: Runoff to PCB74

Runoff	=	0.3 cfs @	12 13 hrs	Volume=	0.03 af	Denth=	0 79"
Trout to TT		0.0 010 0	Land LLO	Volune	0.00 al,	Deput	0.12

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"

Area (ac)	CN	Description			
0.262	98	Paved parking	& roofs		
0.138	39	>75% Grass cov	er, Good, H	ISG A	
0.400	78	Weighted Avera	age		
Tc Leng (min) (fe	gth (Slope Velocity ft/ft) (ft/sec)	Capacity (cfs)	Description	
10.0				Direct Entry, 10 min. minimum	
			Subcatch	ment 85S: Runoff to PCB89	
Runoff =	0	.6 cfs @ 12.11 hr	s, Volume	= 0.06 af, Depth= 2.15"	
Runoff by SCS	5 TR-2	0 method, UH=S	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 24-hr	1-yr	Rainfall=2.50"			
Area (ac)	CN	Description			
0.303	98	Paved parking &	k roofs		
0.014	74	>75% Grass cov	er, Good, H	ISG C	
Tc Leng (min) (fee	et) (i	Slope Velocity ft/ft) (ft/sec)	Capacity (cfs)	Description	
10.0				Direct Entry, 10 min. minimum	
		1	Subcatch	ment 86S: Runoff to PCB85	
Runoff =	0	1 cfs @ 12.16 hrs	s, Volume=	= 0.01 af, Depth= 0.39"	
Runoff by SCS Type III 24-hr	5 TR-2 1-yr 1	0 method, UH=S Rainfall=2.50"	CS, Time Sj	oan= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (ac)	CN	Description			
0.132	98	Paved parking &	roofs		
0.135	39	>75% Grass cove	er, Good, H	ISG A	
0.008	74	grass good c soil			
0.275	68	Weighted Avera	ge		
Tc Leng (min) (fee	th S et) (1	lope Velocity t/ft) (ft/sec)	Capacity (cfs)	Description	
10.0				Direct Entry, 10 min. minimum	

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Subcatchment 87S: Runoff to PCB83

Runoff = 0.6 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.45"

Area (ac) CN Description
0.334 98 Paved parking & roofs
0.059 39 >75% Grass cover, Good, HSG A
0.393 89 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 88S: Runoff to PCB85
Runoff = $0.6 \text{ cfs} @ 12.11 \text{ hrs}$, Volume= 0.05 af , Depth= 1.96 "
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"
Area (ac) CN Description
0.289 98 Paved parking & roofs 0.036 74 >75% Grass cover, Good, HSG C
0.325 95 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 89S: Runoff to PCB86
Runoff = 0.5 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 2.24"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 1-yr Rainfall=2.50"
Area (ac) CN Description
0.221 98 Paved parking & roofs
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry,

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Subcatchment 90S: Runoff to PCB81

Runoff = 1.1 cfs @ 12.11 hrs, Volume= 0.09 af, Depth= 1.96"

Area (ac)	CN	Description	
0.493	98	Paved parking & roofs	
0.068	74	>75% Grass cover, Goo	od, HSG C
0.561	95	Weighted Average	
Tc Lei (min) (ngth feet)	Slope Velocity Capac (ft/ft) (ft/sec) (c	city Description cfs)
10.0			Direct Entry, 10 min. minimum
		Subca	atchment 91S: Runoff to PCB95
Runoff =		0.2 cfs @ 12.11 hrs, Volu	ume= 0.02 af, Depth= 1.96"
Runoff by S	CS TR	20 method, UH=SCS, Tin	ne Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-1	nr 1-yr	Rainfall=2.50"	
Area (ac)	CN	Description	
0.080 0.012	98 74	Paved parking & roofs >75% Grass cover, Goo	od, HSG C
0.092	95	Weighted Average	
Tc Ler (min) (f	ngth feet)	Slope Velocity Capac (ft/ft) (ft/sec) (c	rity Description fs)
10.0			Direct Entry, 10 min. minimum
		Subca	tchment 92S: Runoff to PCB96
Runoff =		0.3 cfs @ 12.12 hrs, Volu	ume= 0.02 af, Depth= 1.53"
D	סד סר	Down the data ULLECCE The	
Гуре III 24-h	r 1-yr	Rainfall=2.50"	10^{-5} Span = 5.00-50.00 hrs, at = 0.05 hrs
Area (ac)	CN	Description	
0.114	98	Paved parking & roofs	
0.062	74	>75% Grass cover, Goo	d, HSG C
0.176	90	Weighted Average	
Tc Len	igth	Slope Velocity Capaci	ity Description
(min) (f	eet)	(t/t) (t/sec) (c)	IS)
10.0			Direct Entry, 10 min. minimum

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Subcatchment 93S: Runoff to PCB98

Runoff = 0.1 cfs @ 12.15 hrs, Volume= 0.01 af, Depth= 0.46"

Area (ac)	CN	Description	
0.180	98	impervious	
0.162	39	>75% Grass cover, Good, I	HSG A
0.342	70	Weighted Average	
Tc Lei (min) (i	ngth feet)	Slope Velocity Capacity (ft/ft) (ft/sec) (cfs)	Description
10.0			Direct Entry,
Runoff =		Subcatch	= 0.02 af, Depth= 2.24"
Runoff by So Type III 24-h	CS TR- tr 1-yr	20 method, UH=SCS, Time S Rainfall=2.50"	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Area (ac)	CN	Description	
0.102	98	impervious area	
(min) (f	eet)	Slope Velocity Capacity (ft/ft) (ft/sec) (cfs)	Description
10.0			Direct Entry, minimum

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Reach 10R: DP 10

Inflow Area =46.946 ac, Inflow Depth = 0.03" for 1-yr eventInflow =0.1 cfs @ 15.00 hrs, Volume=0.11 afOutflow =0.1 cfs @ 15.00 hrs, Volume=0.11 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 2.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.05' @ 15.00 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 20R: Design Point #20

Inflow A	rea =	4.470 ac	, Inflow Depth = 0.49 "	for 1-yr event		
Inflow	=	1.5 cfs @	12.25 hrs, Volume=	0.18 af		
Outflow	=	1.5 cfs @	12.25 hrs, Volume=	0.18 af, Atten= 0%, Lag= 0.0 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.1 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.21' @ 12.25 hrs Capacity at bank full= 1,287.1 cfs 99.0" Diameter Pipe n= 0.010 Length= 1.0' Slope= 0.0100 '/'

Reach 30R: Design Point #30

Inflow A	rea =	6.360 ac	, Inflow Depth = 0.39°	for 1-yr event		
Inflow	=	1.4 cfs @	12.34 hrs, Volume=	0.21 af		
Outflow	=	1.4 cfs @	12.34 hrs, Volume=	0.21 af, Atten= 0%, Lag= 0.0 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.7 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.19' @ 12.34 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 40R: Design Point #40

Inflow An	rea =	0.510 ac,	Inflow Depth = 0.00°	for 1-yr event		
Inflow	=	0.0 cfs @	5.00 hrs, Volume=	0.00 af		
Outflow	=	0.0 cfs @	5.00 hrs, Volume=	0.00 af, Atten= 0%, Lag= 0.0 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 0.0 fps, Min. Travel Time= 0.0 min Avg. Velocity = 0.0 fps, Avg. Travel Time= 0.0 min

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Type III 24-hr 1-yr Rainfall=2.50"

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Peak Depth= 0.00' @ 5.00 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 99R: Design Point #50

Inflow An	rea =	0.330 ac,	Inflow Depth = 0.00"	for 1-yr event
Inflow	-	0.0 cfs @	5.00 hrs, Volume=	0.00 af
Outflow	=	0.0 cfs @	5.00 hrs, Volume=	0.00 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 0.0 fps, Min. Travel Time= 0.0 min Avg. Velocity = 0.0 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.00' @ 5.00 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

PROPOSED CONDITIONS 2-YEAR 24-HOUR STORM EVENT ANALYSIS

Subcatchment 10S: OVERLAND FLOW TO DP 10

Runoff = 0.3 cfs @ 13.71 hrs, Volume= 0.18 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area (ac)	CN	Description	_
8.872	30	WOODS GROUP A	
1.100	55	WOODS GROUP B	
5.512	70	WOODS GROUP C	
0.270	76	GRAVEL PATH GROUP A	
0.820	98	RTE 1 & WETLANDS .74	
0.050	89	PATH C	
0.300	86	STRIPPED AREAS GROUP C	
0.758	74	GRASS GROUP C	
1.523	39	GRASS GROUP A	
0.176	98	Parking at base of hill	
19.381	50	Weighted Average	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.1000	0.1		Sheet Flow, SHEET FLOW
0.8	238	0.1000	5.1		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
0.2	80	0.1750	6.7		Shallow Concentrated Flow, OVERLAND TO WET Unpaved Kv= 16.1 fps

12.5 418 Total

Subcatchment 11S: OVERLAND FLOW TO R29

Runoff = 0.6 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 1.83"

Area ((ac)	CN	Desc	ription					
0.	170	98	IMPH	APERVIOUS AREAS					
0.	150	74	GRA	GRASS GROUP C					
0.	320	87	Weig	ted Aver	age				
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
10.0						Direct Entry, 10 MINUTE MINIMUM			

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Subcatchment 12S: OVERLAND FLOW TO R28

Runoff 2.4 cfs @ 12.15 hrs, Volume= 0.21 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area	(ac) (CN	Desc	ription		
0	.800	98	IMP	ERVIOUS	AREAS	
0	.060	70	WOO	ODS GROU	ЛС	
0	.400	74	GRA	SS GROUI	PC	
1.	.260	89	Weig	ghted Aver	age	
Tc (min)	Length (feet	n)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	• Description
9.3	100)	0.1700	0.2		Sheet Flow, SHEET FLOW
0.1	42	2 (0.2400	7.9		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
2.2	294		0.0200	2.3	τ. ···	Shallow Concentrated Flow CONCENTRATED FLOW
0.9	230) (0.0400	4.1		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, GUTTER FLOW Paved Kv= 20.3 fps
12.5	666	1 7	Total			*

666 Total

Subcatchment 13S: OVERLAND FLOW TO R24

Runoff

0.5 cfs @ 12.12 hrs, Volume=

0.04 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area	(ac)	CN	Desc	ription			
0.	.140	98	IMP	ERVIOUS	AREAS		
0.	.190	74	GRA	SS GROUI	°C		
0.	.330	84	Weig	ghted Aver	age		
Tc (min)	Leng (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0						Direct Entry, 10 MINUTE MINIMUM	

Subcatchment 14S: OVERLAND FLOW TO R25

Runoff 0.5 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 1.99"

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Area	(ac)	CN	Desc	ription			
0.	150	98	IMPI	ERVIOUS	AREAS		
0.	090	74	GRA	SS GROUI	°C		
0.	240	89	Weig	shted Aver	age		
Tc (min)	Len (f	igth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	-
10.0			<u>XIII</u>			Direct Entry, 10 MINUTE MINIMUM	
						160 OVERIAND ELOW TO RO	

Subcatchment 16S: OVERLAND FLOW TO R22

Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.03 af, Depth= 2.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area	(ac)	CN	Desc	ription		
0.	.140	98	IMPE	ERVIOUS A	AREAS	
0.	.030	74	GRA	SS GROUI	°C	
0.	170	94	Weig	hted Aver	age	
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0						Direct Entry, 10 MINUTE MINIMUM
				Subca	tchment	17S: OVERLAND FLOW TO R21
Runoff	=		0.7 cfs @	@ 12.12 h	rs, Volume	= 0.06 af, Depth= 1.46"
Runoff Type III	by SC 24-h	r 2-yr	-20 metl r Rainfa	nod, UH=S 11=3.10"	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Area	(ac)	CN	Desci	ription		
0	150	98	IMPE	RVIOUS A	AREAS	

0.	150	98	IMPH	ERVIOUS	AREAS		
0.	.320	74	GRA	SS GROUP	ic .		
0.	470	82	Weig	ted Aver	age		
Tc (min)	Leng (fe	gth et)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0				Const.		Direct Entry, 10 MINUTE MINIMUM	
				Subca	tchment	18S: OVERLAND FLOW TO R16	

Runoff = 0.1 cfs @ 12.15 hrs, Volume= 0.01 af, Depth= 0.64"

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Are	a (ac)	CN De	scription		
	0.130	98 IM	PERVIOUS	AREAS	
	0.140	39 GR	ASS GROU	ЛРА	
	0.270	67 We	eighted Ave	erage	
To	: Lengtl	h Slop	e Velocity	Capacity	Description
(min)	(feet	:) (ft/ft) (ft/sec)	(cfs)	
10.0)				Direct Entry, 10 MINUTE MINIMUM
			Subc	atchment	19S: OVERLAND FLOW TO R17
lunoff	=	0.1 cfs	s@ 12.26 h	nrs, Volume	e= 0.01 af, Depth= 0.34"
lunoff Ype II	by SCS 7 II 24-hr 2-	FR-20 me -yr Raini	ethod, UH= fall=3.10"	SCS, Time S	Span= 5.00-30.00 hrs, dt= 0.05 hrs
Area	(ac) C	N Des	cription		
0	0.140	98 IMF	PERVIOUS	AREAS	
0	.273 3	39 GR	ASS GROU	PA	
0	.413 5	59 Wei	ghted Ave	rage	
T		01	** * *		
(min)	Length (feet)	(ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0			(1/200)	(010)	Direct Entry 10 min minimum
					Direct Entry, 10 mill. millingin
			Subcat	tchment 2	20S: OVERLAND FLOW TO DP 20
		100.00			
unoff	=	2.8 cfs	@ 12.23 h	rs, Volume	= 0.30 af, Depth= 0.82"
unoff	L. CCC T	D 20			F 40 90 901
uno III	24.hr 2.	K-20 me	11-2 10"	SCS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
pe m	24-111 2-	yr Kanu	all-3.10		
Area	(ac) Cl	N Desc	ription		
0.	.040 9	8 WET	LANDS		
0.	100 7	6 GRA	VEL PATH	I GROUP C	
0.	400 7	4 GRA	SS GROUI	C	
3.	930 7	0 WOO	ODS GROU	ЛРC	
4.	470 7	1 Weig	ghted Aver	age	
Тс	Lenoth	Slope	Velocity	Canacity	Description
min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description
15.1	100	0.0500	01	(0.0)	Sheet Flow SHEET FLOW
10.1	100	0.0000	0.1		Woode: Light underbruch n= 0.400 D2= 2.10
1.3	495	0.1600	6.4		Shallow Concentrated Flow CONCENTRATED ELOW
-17			0.1		Unpaved Ky=161 free

16.4 595 Total

Subcatchment 21S: OVERLAND FLOW TO R14

Runoff	=	0.2 cfs @	12.13 hrs,	Volume=	0.02 af, Depth= 1.08"
Kunon		0.2 (13 6	12.10 1110,	Volunie	oron un Depart aroo

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area (ac)	CN	Description		
0.140	98	IMPERVIOUS A	AREAS	
0.084	39	GRASS GROUP	A	
0.224	76	Weighted Avera	age	
Tc Leng (min) (fee	gth s et) (Slope Velocity ft/ft) (ft/sec)	Capacity (cfs)	Description
10.0				Direct Entry, 10 min. minimum
		Subca	tchment	22S: OVERLAND FLOW TO R13
Runoff =	0	.2 cfs @ 12.14 hr	s, Volume	= 0.02 af, Depth= 0.77"
Runoff by SCS	STR-2	0 method, UH=S	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr	2-yr	Rainfall=3.10"		
Area (ac)	CN	Description		
0.130 0.120	98 39	IMPERVIOUS A GRASS GROUP	AREAS A	
0.250	70	Weighted Avera	age	
Tc Leng	gth s	Slope Velocity ft/ft) (ft/sec)	Capacity (cfs)	Description
10.0				Direct Entry, 10 MINUTE MINIMUM
		Subca	tchment	23S: OVERLAND FLOW TO R11
Runoff =	0	.0 cfs @ 12.51 hr	s, Volume	= 0.01 af, Depth= 0.13"
Runoff by SCS Type III 24-hr	S TR-2 2-yr	0 method, UH=S Rainfall=3.10"	CS, Time S	5pan= 5.00-30.00 hrs, dt= 0.05 hrs
Area (ac)	CN	Description		
0.140	98	IMPERVIOUS A	AREAS	ICC A
0.523	39	>75% Grass cov	er, Good, I	15G A
0.663	51	Weighted Aver	age	
Tc Leng (min) (fe	gth (Slope Velocity ft/ft) (ft/sec)	Capacity (cfs)	Description
10.0				Direct Entry, 10 MINUTE MINIMUM

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Subcatchment 24S: OVERLAND FLOW TO R34

Runoff = 0.2 cfs @ 12.13 hrs, Volume= 0.01 af, Depth= 1.08"

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
0.160 76 Weighted Average Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MINUTE MINIMUM Subcatchment 25S: OVERLAND FLOW TO R6 Runoff = 0.5 cfs @ 12.14 hrs, Volume= 0.05 af, Depth= 0.68" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.140 98 impervious area 0.426 74 grass good c soil 0.238 39 grass good a soil 0.804 68 Weighted Average	
TcLengthSlopeVelocityCapacity (ff/sec)Description10.0Direct Entry, 10 MINUTE MINIMUMSubcatchment 25S: OVERLAND FLOW TO R6Runoff=0.5 cfs @ 12.14 hrs, Volume=0.05 af, Depth=0.68"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt=0.05 hrsType III 24-hr 2-yrRainfall=3.10"Area (ac)CNDescription0.14098impervious area0.42674grass good c soil0.23839grass good a soil0.80468Weighted Average	
10.0 Direct Entry, 10 MINUTE MINIMUM Subcatchment 25S: OVERLAND FLOW TO R6 Runoff = 0.5 cfs @ 12.14 hrs, Volume= 0.05 af, Depth= 0.68" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.140 98 impervious area 0.426 74 grass good c soil 0.238 39 grass good a soil 0.804 68 Weighted Average	
Subcatchment 25S: OVERLAND FLOW TO R6 Runoff = 0.5 cfs @ 12.14 hrs, Volume= 0.05 af, Depth= 0.68" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.140 98 impervious area 0.426 74 grass good c soil 0.238 39 grass good a soil 0.804 68 Weighted Average	
Runoff= $0.5 \text{ cfs} @ 12.14 \text{ hrs, Volume}=$ $0.05 \text{ af, Depth=} 0.68"$ Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 2-yrRainfall=3.10"Area (ac)CNDescription0.14098impervious area0.42674grass good c soil0.23839grass good a soil0.80468Weighted Average	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.140 98 impervious area 0.426 74 grass good c soil 0.238 39 grass good a soil 0.804 68 Weighted Average	
Area (ac) CN Description 0.140 98 impervious area 0.426 74 grass good c soil 0.238 39 grass good a soil 0.804 68 Weighted Average	
Area (ac) CN Description 0.140 98 impervious area 0.426 74 grass good c soil 0.238 39 grass good a soil 0.804 68 Weighted Average	
Area (ac)CNDescription0.14098impervious area0.42674grass good c soil0.23839grass good a soil0.80468Weighted Average	
0.14098impervious area0.42674grass good c soil0.23839grass good a soil0.80468Weighted Average	
0.42674grass good c soil0.23839grass good a soil0.80468Weighted Average	
0.238 39 grass good a soil 0.804 68 Weighted Average	
0.804 68 Weighted Average	
Tc Length Slope Velocity Capacity Description	
(min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 MINUTE MINIMUM	
Subcatchment 26S: OVERLAND FLOW TO R5	٤,
unoff = 0.4 cfs @ 12.11 hrs, Volume = 0.03 af, Depth = 1.99"	
unoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ hrs, dt= 0.05 hrs	
ype III 24-hr 2-yr Kainrall=3.10"	
Area (ac) CN Description	
0.120 98 IMPERVIOUS AREAS	
0.070 74 GRASS GROUP C	
0.190 89 Weighted Average	
Tc Length Slope Velocity Capacity Description	
(min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry 10 MINUTE MINUTE	

3250 POST-FE	B_2006	Type III 24-hr 2-yr Rainfall=3.10
Prepared by Mer HydroCAD® 7.00	idian Engineering, Inc. /n 000814 © 1986-2003 Applied Microcomputer Systems	3/14/200
	Subcatchment 28S: OVERLAND FL	OW TO R1
Runoff =	0.3 cfs @ 12.12 hrs, Volume= 0.02 af, Depth= 1	.26"
Runoff by SCS TR- Type III 24-br 2-yr	20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.0 Rainfall=3.10"	5 hrs
rype in 21 in 2 jr		
Area (ac) CN	Description	
0.125 98	IMPERVIOUS AREAS	
0.050 39	GRASS GROUP A	
0.060 74	GRASS GROUP C	
0.235 79	Weighted Average	
Tc Length (min) (feet)	Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs)	
10.0	Direct Entry, 10 MINUT	'E MINIMUM
	Subcatchment 29S: OVERLAND I	FLOW R2
Runoff =).3 cfs @ 12.12 hrs. Volume= 0.03 af. Depth= 1.	46"
Runoff by SCS TR-	20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.0	5 hrs
Type III 24-hr 2-yr	Rainfall= 3.10 "	
Type III 24-III 2-yi	Kunnun 5.10	
Area (ac) CN	Description	
0.131 98	IMPERVIOUS AREAS	
0.040 39	GRASS GROUP A	
0.040 74	GRASS GROUP C	
0.040 74	Weighted Average	
0.211 02	Weighted Average	
Tc Length	Slope Velocity Capacity Description	
(min) (feet)	ft/ft) (ft/sec) (cfs)	
10.0	Direct Entry, 10 MINUT	EMINIMUM
10.0	2 moti 2 mil / 10 mil 10 m	
	Subcatchment 305: OVERI AND FLO	W TO DP 30
	Subcatchinein 505. OV EREALAD TEO	IT TO DI 50
-	0.26 - 6 - 10.201 - W. I	(PII) .
Runoff =	1.9 cts @ 12.29 hrs, Volume = 0.36 ar, Deptn = 0.16 ar,	00
D (1) 000 TD	20 11 1 1 H L CCC Time Course E 00 20 00 her des 0.0	- her
Runoff by SCS IR-	20 method, OH=500, Time Span=5.00-50.00 ms, ut=0.00	Jus
Type III 24-hr 2-yr	Kaintali=3.10"	
A () CN	Description	
Area (ac) CN		
0.410 98	WEILANDS	
0.090 89	GRAVEL PATH GROUP C	
0.030 76	GRAVEL PATH GROUP A	
1.000 74	GRASS GROUP C	
2.100 70	WOODS GROUP C	
1.580 30	WOODS GROUP A	
1.150 98	roof area	

Weighted Average 6.360 68

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Type III 24-hr 2-yr Rainfall=3.10"

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	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	16.5	100	0.0400	0.1		Sheet Flow, SHEET FLOW
	0.4	113	0.0970	5.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
	0.5	252	0.2300	7.7		Shallow Concentrated Flow, CONCENTRATED FLOW
	0.8	202	0.0690	4.2		Shallow Concentrated Flow, CONCENTRATED FLOW
	1.0	627	0.0480	10.2	336.08	Channel Flow, CHANNEL THRU WETLANDS Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.030
2	100	1 004	T . 1			

19.2 1,294 Total

Subcatchment 31S: OVERLAND FLOW TO R31

Runoff	=	0.0 cfs @	12.44 hrs,	Volume=
--------	---	-----------	------------	---------

0.01 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area (ac)	CN	Description							
0.033	98	IMPERV ARE	PERV AREAS on lot						
0.626	39	>75% Grass co	over, Good, HSG A						
0.156	0.156 98 Paved area in Rte. 1								
0.815	53	Weighted Ave	erage						
Tc Len (min) (f	igth eet)	Slope Velocity	y Capacity Description						

10.0

Direct Entry, 10 min. minimum

Subcatchment 32S: OVERLAND FLOW TO R36

Runoff = 0.2 cfs @ 12.13 hrs, Volume= 0.02 af, Depth= 0.97°

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area	(ac)	CN	Desc	ription			
0.	.090	98	IMP	ERVIOUS	AREAS		
0.	.070	74	GRA	SS GROUI	°C		
0.	.060	39	GRA	SS GROUI	PA		
0.	220	74	Weig	ghted Aver	age		
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0						Direct Entry, 10 MINUTE MINIMUM	

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	3250 POST-FEB_2006	Type III 24-hr 2-yr Rainfall=3.10"
-	Prepared by Meridian Engineering, Inc.	2/11/2006
- Y.	HydroCAD® 7.00 s/n 000814 © 1986-2003 Applied Microcomputer Systems	3/14/2006
	Subcatchment 33S: OVERLAND FLOW 7	'O R9
	Runoff = 0.1 cfs @ 12.11 hrs, Volume= 0.01 af, Depth= 2.82"	
	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	
	Area (ac) CN Description	
	0.030 98 impervious area	
1	Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
	10.0 Direct Entry, 10 MINUTE MIN	IMUM
	Subcatchment 34S: OVERLAND FLOW T	O R35
	Runoff = $0.2 \text{ cfs} @ 12.11 \text{ hrs}$, Volume= 0.01 at , Depth= 2.82°	
	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	
	Area (ac) CN Description	
)	0.060 98 IMPERVIOUS AREAS	
~	Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
	10.0 Direct Entry, 10 MINUTE MIN	IMUM
	Subcatchment 35S: OVERLAND FLOW TO	POND 3
	Runoff = 3.5 cfs @ 12.12 hrs, Volume= 0.29 af, Depth= 1.83"	
	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	
	Type III 24-hr 2-yr Rainfall=3.10"	
	Area (ac) CN Description	
	0.630 98 IMPERVIOUS AREAS	
	0.056 39 GRASS GROUP A	
	0.050 59 GRASS GROUP B	
	0.024 76 CRAVEL CROUP A	
	0.024 70 GRAVEL GROUP B	
	1 897 87 Weighted Average	
	1.077 01 1128-111-10	
	Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
	10.0 Direct Entry, MINIMUM - TO	POND 3
\mathcal{I}		

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Subcatchment 36S: OVERLAND FLOW TO R56(PCB#4)

Runoff = 0.8 cfs @ 12.17 hrs, Volume= 0.07 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area (ac)	CN	Description
0.140	98	IMPERVIOUS AREA
0.035	70	WOODS GROUP C
0.187	74	GRASS GROUP C
0.233	39	GRASS GROUP A
0.246	98	Paved parking & roofs
0.841	75	Weighted Average

(min)	(feet)	(ft/ft)	(ft/sec)	Capacity (cfs)	Description
11.5	100	0.1000	0.1	(010)	Sheet Flow, SHEET FLOW
0.2	84	0.1400	6.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
0.5	132	0.0760	4.4		Shallow Concentrated Flow, CONCENTRATED FLOW
0.1	67	0.5000	11.4		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps
0.6	80	0.0200	2.3		Shallow Concentrated Flow, CONCENTRATED FLOW
0.1	54	0.2200	7.6		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, OVERLAND TO DRIVE Unpaved Kv= 16.1 fps
0.4	71	0.0170	2.6		Shallow Concentrated Flow, DRIVE TO PCB#4 Paved Kv= 20.3 fps
40.4	=	-			

13.4 588 Total

Subcatchment 37S: OVERLAND FLOW TO R50 (CB#232)

Runoff

0.9 cfs @ 12.17 hrs, Volume=

0.08 af, Depth= 1.20"

Area (ac)	CN	Description
0.150	98	IMPERVIOUS AREA
0.250	70	WOODS GOOD GROUP C
0.282	74	GRASS GOOD GROUP C
0.050	39	GRASS GOOD GROUP A
0.090	98	Paved parking & roofs
0.822	78	Weighted Average

Type III 24-hr 2-yr Rainfall=3.10"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.1200	0.2		Sheet Flow, SHEET FLOW
					Woods: Light underbrush n= 0.400 P2= 3.10"
0.9	315	0.1200	5.6		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv=16.1 fps
0.0	34	0.5000	11.4		Shallow Concentrated Flow, OVERLAND CUT
					Unpaved Kv= 16.1 fps
0.6	80	0.0200	2.3		Shallow Concentrated Flow, OVERLAND CUT TO ROAD
					Unpaved Kv=16.1 fps
0.8	217	0.0450	4.3		Shallow Concentrated Flow, ROAD GUTTER FLOW
					Paved Kv= 20.3 fps

γ.

746 Total

Subcatchment 39S: PAVEMENT FLOW TO R46

Runoff

13.0

0.2 cfs @ 12.11 hrs, Volume=

0.02 af, Depth= 2.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area	(ac)	CN	Desc	ription		
0.	070	98	PAV	EMENT FI	LOW	
0.	010	74	GRA	SS GROUI	°C	
0.	080	95	Weig	ghted Aver	age	
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0						Direct Entry, 10 MINUTE MINIMUM
				Subcat	chment 4	0S: OVERLAND FLOW TO DP 40

Runoff = 0.0 cfs @ 5.00 hrs, Volume= 0.00 af, Depth= 0.00"

Area (ac)	CN	Description	
0.200	39	GRASS GROUP A	
0.310	30	WOODS GROUP A	
0.510	34	Weighted Average	

Type III 24-hr 2-yr Rainfall=3.10"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.2		Sheet Flow, SHEET FLOW
0.2	65	0.2000	7.2		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
0.7			_		Unpaved Kv= 16.1 fps Direct Entry, 10 MINUTE MINIMUM
10.0	165	Total			

Subcatchment 41S: PAVEMENT FLOW TO R48

Runoff = 0.3 cfs @ 12.11 hrs, Volume= 0.02 af, Depth= 2.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area	(ac)	CN	Desc	ription			
0	.090	98	PAV	EMENT F	LOW		
0.	.020	74	GRA	SS GROU	PC		
0.	.110	94	Weig	ghted Aven	age		-
Tc (min)	Leng (fe	gth et)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0						Direct Entry, 10 MINUTE MINIMUM	
				Subca	atchment	42S: PAVEMENT FLOW TO R47	
Runoff	=		0.2 cfs	@ 12.11 h	rs, Volume	= 0.02 af, Depth= 2.82"	
Type III Area (0.0	24-hr (ac) 080	2-yr CN 98	Rainfa Descr PAVI	ll=3.10" ription EMENT FL	.OW	pan= 5.00-30.00 hrs, dt= 0.05 hrs	-
Tc (min)	Leng (fee	th ≥t)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0						Direct Entry, 10 MINUTE MINIMUM	
				Subca	tchment	43S: PAVEMENT FLOW TO R49	
Runoff	=	().3 cfs @	9 12.11 hr	s, Volume=	= 0.02 af, Depth= 2.82"	
Runoff b Type III	oy SCS 24-hr	TR-2 2-yr	20 meth Rainfal	nod, UH=S l=3.10"	CS, Time Sj	pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (a	ac)	CN	Descr	iption			

0.100 98 PAVEMENT FLOW

ilyanoc	AD® 7.00	s/n 0008	14 © 1986	-2003 Appli	ed Microcomputer Systems	3/1-
1				<i>c</i>		
(min)	Length (feet)	Slope (ft/ft)	(ft/sec)	Capacity (cfs)	Description	
10.0	(icei)	(11/11)	(11/ 500)	(00)	Direct Entry, 10 MINUTE MINIMU	JM
2010						
			Subc	atchment	44S: PAVEMENT FLOW TO R	51
Runoff	÷	0.3 cfs @	9 12.11 h	rs, Volume	= 0.02 af, Depth= 2.82"	
Runoff	by SCS TR	-20 meth	od. UH=9	SCS. Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III	24-hr 2-y	r Rainfal	1=3.10"		F	
A ====		Docer	intion			
	100 98	PAVE	EMENT FI	LOW		
0.			1.1.1.1	arrive and	2010-00	
Tc	Length	Slope	Velocity	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(CIS)	Direct Entry 10 MINUTE MINIMU	IM
10,0					Direct Entry, to winter it winting	
				Subcato	hment 45S: Runoff to PCB	
Runoff Runoff I	= by SCS TR	0.3 cfs @ -20 meth	0 12.06 hr od, UH=9	Subcato rs, Volume 6CS, Time S	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff Runoff I Type III	= by SCS TR 24-hr 2-yı	0.3 cfs @ -20 meth r Rainfall) 12.06 hr od, UH=5 1=3.10"	Subcato rs, Volume GCS, Time S	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff Runoff I Type III Area	= by SCS TR 24-hr 2-yr (ac) CN	0.3 cfs @ -20 meth Rainfall Descri) 12.06 h od, UH=5 1=3.10" iption	Subcato rs, Volume GCS, Time S	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff Runoff I Type III <u>Area</u> 0.	= by SCS TR 24-hr 2-yı (ac) CN 118 98	0.3 cfs @ -20 meth Rainfall Descri imper) 12.06 hr od, UH=5 l=3.10" iption vious	Subcato rs, Volume SCS, Time S	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff Runoff I Type III <u>Area</u> 0. Tc (min)	= 24-hr 2-yr (ac) CN 118 98 Length (feet)	0.3 cfs @ -20 meth Rainfall Descri imper Slope (ft/ft)) 12.06 hr od, UH=5 l=3.10" iption vious Velocity (ft/sec)	Subcato rs, Volume GCS, Time S Capacity (cfs)	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description	
Runoff Runoff Type III <u>Area</u> 0. Tc (min) 6.0	= 24-hr 2-yr (ac) CN 118 98 Length (feet)	0.3 cfs @ -20 meth r Rainfal Descri imper Slope (ft/ft)) 12.06 hr od, UH=5 1=3.10" iption vious Velocity (ft/sec)	Subcato rs, Volume GCS, Time S Capacity (cfs)	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 6 min. minimum	
Runoff Runoff Type III <u>Area</u> 0. Tc <u>(min)</u> 6.0	= 24-hr 2-yı (ac) CN 118 98 Length (feet)	0.3 cfs @ -20 meth Rainfall Descri imper Slope (ft/ft)) 12.06 hr od, UH=S 1=3.10" iption vious Velocity (ft/sec)	Subcato rs, Volume SCS, Time S Capacity (cfs) Subcato	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 6 min. minimum hment 46S: Runoff to PCB	
Runoff Runoff Type III <u>Area</u> 0. Tc <u>(min)</u> 6.0 Runoff	= 24-hr 2-yn (<u>ac) CN</u> 118 98 Length (feet)	0.3 cfs @ -20 meth Rainfall Descri imper Slope (ft/ft) 0.4 cfs @	 12.06 hr od, UH=5 1=3.10" iption vious Velocity (ft/sec) 12.06 hr 	Subcato rs, Volume SCS, Time S Capacity (cfs) Subcato	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 6 min. minimum hment 46S: Runoff to PCB = 0.03 af, Depth= 2.82"	
Runoff Runoff Type III <u>Area</u> 0. Tc (min) 6.0 Runoff Runoff Type III	= 24-hr 2-yr (ac) CN 118 98 Length (feet) = by SCS TR 24-hr 2-yr	0.3 cfs @ -20 meth r Rainfall Descri imper Slope (ft/ft) 0.4 cfs @ -20 meth r Rainfall	 12.06 hr od, UH=5 l=3.10" iption vious Velocity (ft/sec) 12.06 hr od, UH=5 l=3.10" 	Subcato rs, Volume SCS, Time S Capacity (cfs) Subcato rs, Volume SCS, Time S	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 6 min. minimum hment 46S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff Type III <u>Area</u> 0. Tc (min) 6.0 Runoff Runoff Type III Area	= by SCS TR 24-hr 2-yr (ac) CN (ac) CN (ac) CN (feet) = by SCS TR 24-hr 2-yr (ac) CN	0.3 cfs @ -20 meth Rainfall <u>Descri</u> imper Slope (ft/ft) 0.4 cfs @ -20 meth Rainfall Descri	 12.06 hr od, UH=S 1=3.10" iption vious Velocity (ft/sec) 12.06 hr od, UH=S 1=3.10" iption 	Subcato rs, Volume SCS, Time S Capacity (cfs) Subcato rs, Volume SCS, Time S	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 6 min. minimum hment 46S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff Runoff Type III <u>Area</u> 0. Tc (min) 6.0 Runoff Runoff Type III <u>Area</u> 0.	= 24-hr 2-yn (ac) CN 118 98 Length (feet) = by SCS TR 24-hr 2-yn (ac) CN 123 98	0.3 cfs @ -20 meth Rainfall Descri imper Slope (ft/ft) 0.4 cfs @ -20 meth Rainfall Descri imper	 12.06 hr od, UH=5 l=3.10" iption vious Velocity (ft/sec) 12.06 hr od, UH=5 l=3.10" iption vious 	Subcato rs, Volume SCS, Time S Capacity (cfs) Subcato rs, Volume SCS, Time S	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 6 min. minimum hment 46S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff Type III <u>Area</u> 0. Tc (min) 6.0 Runoff Runoff Type III <u>Area</u> 0.	= by SCS TR 24-hr 2-yr (ac) CN 118 98 Length (feet) = by SCS TR 24-hr 2-yr (ac) CN 123 98 Length	0.3 cfs @ -20 meth Rainfall Descri imper Slope (ft/ft) 0.4 cfs @ -20 meth Rainfall Descri imper	 12.06 hr od, UH=S l=3.10" iption vious Velocity (ft/sec) 12.06 hr od, UH=S l=3.10" iption vious Velocity 	Subcato rs, Volume SCS, Time S Capacity (cfs) Subcato rs, Volume SCS, Time S	hment 45S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 6 min. minimum hment 46S: Runoff to PCB = 0.03 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs	

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Subcatchment 47S: Runoff to PCB

Runoff = 1.4 cfs @ 12.15 hrs, Volume= 0.12 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area	(ac) (CN	Desc	ription			
0	.472	98	impervious		1100		
0	.105	70	Woo	ds, Good, I	HSG C		
0	.187	74	>75%	Grass cov	ver, Good, I	HSG C	
0	.764	88	Weig	ted Aver	age		
Tc (min)	Lengtl (feet	h ;)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
11.5	100	0 (0.1000	0.1		Sheet Flow.	
0.4	130) (0.1400	6.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow,	
0.9	175	5 ().0250	3.2		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, Paved Kv= 20.3 fps	
10.0	105						

12.8 405 Total

Subcatchment 48S: Side p-lot runoff

Runoff = 0.8 cfs @ 12.06 hrs, Volume= 0.06 af, Depth= 2.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

_Area (ac)	CN	Desc	ription			
0.016	74	>75%	6 Grass cov	ver, Good, H	ISG C	
0.265	98	Pave	d parking	& roofs		
0.281	97	Weig	ghted Aver	age		
Tc Le (min) (ngth feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	

6.0

Direct Entry,

Subcatchment 49S: Future parking expansion

Runoff = 1.3 cfs @ 12.06 hrs, Volume= 0.10 af, Depth= 2.54"

Area (ac)	CN	Description	
0.046	70	Woods, Good, HSG C	
 0.414	98	Paved parking & roofs	
0.460	95	Weighted Average	

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Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
6.0 Direct Entry,
Subcatchment 50S: OVERLAND FLOW TO DP 50
Runoff = 0.0 cfs @ 5.00 hrs, Volume= 0.00 af, Depth= 0.00"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"
Area (ac) CN Description
0.190 39 GRASS GROUP A 0.140 30 WOODS GROUP A
0.330 35 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MINUTE MINIMUM
Area (ac) CN Description 0.120 98 IMPERVIOUS AREA
0.059 70 WOODS GOOD GROUP C 0.081 39 GRASS GOOD GROUP A
0.260 73 Weighted Average
Tc Length Slope Velocity Capacity Description
10.0 Direct Entry, MINIMUM
Subcatchment 59S: Kunoff to Cultecs
Runoff = 1.0 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 1.83"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Fype III 24-hr 2-yr Rainfall=3.10"
Area (ac) CN Description
0.297 98 Paved parking & roofs
0.236 74 >75% Grass cover, Good, H5G C 0.533 87 Weighted Average
0,000 07 Freighter Historige
Гуре III 24-hr 2-yr Rainfall=3.10"

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Prepare HydroC	ed by Mo	eridian E	Engineerii	ng, Inc.	ad Microcommuter Systems
		5/110001	114 @ 1700	-2005 Appli	eu wicrocomputer Systems
Tc (min)	Length (feet)	Slope	Velocity (ft/sec)	Capacity	Description
10.0	(icct)	(11/11)	(11/ 500)	((15)	Direct Entry, 10 min. minimum
				Subcate	hment 60S: Runoff to PCB
Runoff	=	0.5 cfs @	9 12.11 h	rs, Volume	= 0.04 af, Depth= 2.35"
Runoff h					and the state of t
Type III Area (oy SCS TI 24-hr 2-y ac) CN	R-20 meth r Rainfal Descr	nod, UH=9 II=3.10" iption	SCS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Type III Area (a	by SCS TI 24-hr 2-y ac) CN 74 98	R-20 meth r Rainfal Descr Paved	iod, UH=5 II=3.10" iption I parking	SCS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Type III <u>Area (a</u> 0.1 0.0	by SCS TI 24-hr 2-y ac) CN 174 98 142 74	R-20 meth r Rainfal Descr Paved >75%	nod, UH=5 II=3.10" iption I parking of Grass cov	SCS, Time S & roofs ver, Good, H	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Area (1000) Area (1000) 0.1 0.1 0.1 0.2	by SCS TI 24-hr 2-y ac) CN 174 98 142 74 216 93	R-20 meth r Rainfal Descr Pavec >75% Weigh	nod, UH=5 II=3.10" iption I parking Grass cov nted Aver	SCS, Time S & roofs /er, Good, H age	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Type III Area (0.1 0.2 0.2 Tc (min)	by SCS TI 24-hr 2-y ac) CN 74 98 942 74 216 93 Length (feet)	R-20 meth r Rainfal Descr Paved >75% Weigh Slope (ft/ft)	nod, UH=5 II=3.10" I parking Grass cov nted Avera Velocity (ft/sec)	SCS, Time S & roofs <u>ver, Good, H</u> age Capacity (cfs)	pan= 5.00-30.00 hrs, dt= 0.05 hrs ISG C Description
Area (i	y SCS TI 24-hr 2-y ac) CN 74 98 942 74 216 93 Length (feet)	R-20 meth r Rainfal Descr Pavec >75% Weigh Slope (ft/ft)	nod, UH=5 II=3.10" iption I parking Grass cov I parking Grass cov I parking Velocity (ft/sec)	SCS, Time S & roofs ver, Good, H age Capacity (cfs)	pan= 5.00-30.00 hrs, dt= 0.05 hrs ISG C Description Direct Entry, 10 min. minimum
Area (i	y SCS TI 24-hr 2-y ac) CN 74 98 942 74 216 93 Length (feet)	R-20 meth r Rainfal Descr Pavec >75% Weigh Slope (ft/ft)	nod, UH=5 II=3.10" I parking Grass cov I parking Grass cov I parking Velocity (ft/sec) Subcat	SCS, Time S & roofs yer, Good, H age Capacity (cfs) tchment 6	pan= 5.00-30.00 hrs, dt= 0.05 hrs ISG C Description Direct Entry, 10 min. minimum 1S: FRONT PARKING- BLDG 12
Area (i	y SCS TI 24-hr 2-y ac) CN 74 98 942 74 216 93 Length (feet)	R-20 meth r Rainfal Descr Pavec >75% Weigh Slope (ft/ft)	nod, UH=5 II=3.10" I parking Grass cov I parking Grass cov I parking Velocity (ft/sec) Subcat	SCS, Time S & roofs <u>ver, Good, H</u> age Capacity (cfs) c chment 6 s, Volume=	pan= 5.00-30.00 hrs, dt= 0.05 hrs ISG C Description Direct Entry, 10 min. minimum 1S: FRONT PARKING- BLDG 12 0.04 af, Depth= 2.82"
Type III Area (1 0.1 0.2 Tc (min) 10.0 Runoff Runoff by Type III 2	y SCS TI 24-hr 2-y ac) CN 74 98 42 74 216 93 Length (feet) = y SCS TR 24-hr 2-yr	R-20 meth r Rainfal Descr Paved >75% Weigh Slope (ft/ft) 0.5 cfs @	nod, UH=S ll=3.10" iption l parking Grass cov nted Avera Velocity (ft/sec) Subcat 12.11 hr od, UH=S	SCS, Time S & roofs <u>ver, Good, H</u> age Capacity (cfs) cchment 6 s, Volume= CS, Time Sp	pan= 5.00-30.00 hrs, dt= 0.05 hrs ISG C Description Direct Entry, 10 min. minimum 1S: FRONT PARKING- BLDG 12 0.04 af, Depth= 2.82" pan= 5.00-30.00 hrs, dt= 0.05 hrs

0.	190 98	Pave	d parking	& roofs	;	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0					Direct Entry, 10 MIN. MINIMUM	
			Subc	atchment	62S: SIDE PARKING- BLDG 12	
unoff	-	1.3 cfs @	2 12.11 hr	s, Volume	= 0.12 af, Depth= 2.82"	
unoff b ype III	y SCS TR 24-hr 2-yr	-20 meth Rainfal	nod, UH=S ll=3.10"	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (ac) CN	Descr	iption	_		
0.5	500 98	Pavec	1 parking 8	k roofs		-
	Longth	Slope	Velocity	Capacity	Description	
Tc min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		

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Subcatchment 63S: ROOF- BLDG 12	
Runoff = 3.0 cfs @ 12.11 hrs, Volume= 0.27 af, Depth= 2.82"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	
Area (ac) CN Description	
1.150 98 Paved parking & roofs	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 MIN. MINIMUN	M
Subcatchment 645: ROOF- BLDC 11	
Runoff = 2.0 cfs @ 12.11 hrs, Volume= 0.18 af, Depth= 2.82"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" <u>Area (ac) CN Description</u> 0.760 98 Paved roads w/curbs & sewers To Length Slope Velocity Capacity Description	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" <u>Area (ac) CN Description</u> 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 10.0 Direct Entry, 10 MIN. MINIMUM	M
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 10.0 Direct Entry, 10 MIN. MINIMUM Subcatchment 65S: FRONT PARKING- BLD	M 0G 11
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" <u>Area (ac) CN Description</u> 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MINIMUN Subcatchment 65S: FRONT PARKING- BLD	м 9G 11
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 10.0 Direct Entry, 10 MIN. MINIMUN Subcatchment 65S: FRONT PARKING- BLD Runoff = 0.8 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 1.60"	M 9G 11
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MINIMUN Subcatchment 65S: FRONT PARKING- BLD Runoff = 0.8 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 1.60" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	M 9G 11
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 10.0 Direct Entry, 10 MIN. MINIMUN Subcatchment 65S: FRONT PARKING- BLD Runoff = 0.8 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 1.60" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description	M 9G 11
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" <u>Area (ac) CN Description</u> 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MINIMUN Subcatchment 65S: FRONT PARKING- BLD Runoff = 0.8 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 1.60" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" <u>Area (ac) CN Description</u> 0.200 98 Paved parking & roofs	M 9G 11
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" <u>Area (ac) CN Description</u> 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MINIMUN Subcatchment 65S: FRONT PARKING- BLD Runoff = 0.8 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 1.60" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" <u>Area (ac) CN Description</u> 0.200 98 Paved parking & roofs 0.290 74 >75% Grass cover, Good, HSG C 0.490 84 Weighted Average	M 0G 11
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MINIMUN Subcatchment 65S: FRONT PARKING- BLD Runoff = 0.8 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 1.60" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10" Area (ac) CN Description 0.200 98 Paved parking & roofs 0.290 74 >75% Grass cover, Good, HSG C 0.490 84 Weighted Average	M 0G 11
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 2-yr Rainfall=3.10"Area (ac)CNDescription0.76098Paved roads w/curbs & sewersTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 MIN. MINIMUNSubcatchment 65S: FRONT PARKING- BLDRunoff=0.8 cfs @ 12.12 hrs, Volume=0.07 af, Depth= 1.60"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 2-yr Rainfall=3.10"Area (ac)CNDescription0.20098Paved parking & roofs0.2900.29074>75% Grass cover, Good, HSG C0.4900.49084Weighted AverageTcLengthTcLengthSlopeVelocityCapacityDescription	M 0G 11

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Subcatchment 66S: RIGHT PARKING- BLDG 11

Runoff = 1.0 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area (ac) CN Description
0.280 98 Paved parking & roofs
0.300 74 >75% Grass cover, Good, HSG C
0.580 86 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM
Subcatchment 67S: LOADING AREA- BLDG 11
Runoff = $0.5 \text{ cfs} @ 12.11 \text{ hrs}$, Volume= 0.05 af , Depth= 2.82 "
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"
Area (ac) CN Description
0.200 98 Paved parking & roofs
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM
Subcatchment 685. PARKINIC LOT PLDC#10
Subtatement 005. I ARKING LOT BLDG#10
Runoff = 1.8 cfs @ 12.12 hrs, Volume= 0.15 af, Depth= 1.83"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"
Area (ac) CN Description
0.520 98 Paved parking & roofs
0.470 74 >75% Grass cover, Good, HSG C
0.990 87 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM

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	3250 POST-FEB_2006 Type III 24	4-hr 2-yr Rainfall=3.10"
0	Prepared by Meridian Engineering, Inc. HydroCAD® 7.00 s/n 000814 © 1986-2003 Applied Microcomputer Systems	3/14/2006
	Subcatchment 69S: ROOF - BLDG 10	
	Runoff = 0.6 cfs @ 12.11 hrs, Volume= 0.06 af, Depth= 2.82"	
	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	
	Area (ac) CN Description	
	0.240 98 Paved parking & roofs	
)	Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
	10.0 Direct Entry, 10 MIN. MINIMUM	
	Subcatchment 70S: Runoff to PCB58	
	Runoff = 1.0 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 1.83"	
	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	
	Area (ac) CN Description	
)	0.288 98 Paved parking & roofs 0.241 74 >75% Grass cover, Good, HSG C	
	0.529 87 Weighted Average	
	Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
	10.0 Direct Entry, 10 min. minimum	
	Subcatchment 71S: Runoff to PCB57	
	Runoff = 0.3 cfs @ 12.14 hrs, Volume= 0.03 af, Depth= 0.72"	
2	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	
	Area (ac) CN Description	
	0.278 98 Paved parking & roofs	
	0.278 39 >75% Grass cover, Good, HSG A	
	0.556 69 Weighted Average	
	Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
	10.0 Direct Entry, 10 min. minimum	

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Subcatchment 72S: Runoff to PCB53

Runoff = 0.7 cfs @ 12.12 hrs, Volume= 0.06 af, Depth= 1.83"

Area (ac) CN Description	
0.199 98 Paved parking & roofs	
0.171 74 >75% Grass cover, Good, HSG C	
0.370 87 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minimum	
Subcatchment 73S: Runoff to PCB52	
Runoff = 0.6 of (0.12.11 hrs. V-1) = 0.05 (0.5.10 hrs.)	
0.05 af, Depth = 2.26"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	
Area (ac) CN Description	
0.231 98 Paved parking & roofs	
0.028 39 >75% Grass cover, Good, HSG A	
0.237 92 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	~
10.0 Direct Entry, 10 min. minimum	
Subcatchment 74S: Runoff to PCB60	
Runoff = 0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 1.53"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 24-hr 2-yr Rainfall=3.10"	
Area (ac) CN Description	
0.455 98 Paved parking & roofs	
0.151 39 >75% Grass cover, Good, HSG A	
0.606 83 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minimum	

3250 POST-FEB_2006	Type III 24-hr 2-yr Rainfall=3.10
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Subcatchment 75S: Runoff to PCE	367
D (() 0.0 () 10.14 hrs. V-hrs. 0.02 of Dorth- 0.77"	
Runoff = $0.3 \text{ cts} @ 12.14 \text{ hrs}, \text{ Volume} = 0.03 \text{ ar}, \text{ Depth} = 0.77^{\circ}$	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-br 2-yr Rainfall=3.10"	s
Area (ac) CN Description	
0.225 98 Paved parking & roofs	
0.203 39 >75% Grass cover, Good, HSG A	
0.428 70 Weighted Average	
Tc Length Slope Velocity Capacity Description	
(min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minim	um
Subsatabant 768. Bunoff to PCB	65
Subcatchinent 705. Rubbit to 1 Cb	105
$P_{\text{unoff}} = 0.1 \text{ cfc} @ 12.13 \text{ hrs} \text{ Volume} = 0.01 \text{ af Depth} = 0.97^{"}$	
Kulton - 0.1 cis @ 12.10 his, volume 0.01 al, Deput 0.37	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	6
Type III 24-hr 2-yr Rainfall=3.10"	
-)[
Area (ac) CN Description	
0.064 98 Paved parking & roofs	
0.043 39 >75% Grass cover, Good, HSG A	
0.107 74 Weighted Average	
Tc Length Slope Velocity Capacity Description	
(min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minim	um
	70
Subcatchment 775: Runoff to PCB	79
D ((@ 1010 hrs. Valueran 0.04 of Dopth= 1.83"	
Runoff = $0.5 \text{ crs } @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ ar}, \text{ Deput} = 1.05 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ crs} @ 12.12 \text{ rrs}, \text{ volume} = 0.04 \text{ crs} @ 12.12 \text{ rrs} @ 12.12 \text{ rrs} $ \text{ rs} @ 12.12 \text{ rs} $ \text{ rs} $ \text{ rs} @ 12.12 \text{ rs} $ \text{ rs} $	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Type III 24-hr 2-yr Rainfall=3.10"	
Area (ac) CN Description	
0.232 98 Paved parking & roots	
0.052 39 >75% Grass cover, Good, FIDG A	
0.204 0/ vvergmed Average	
Tc Length Slope Velocity Capacity Description	
(min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minim	um

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Subcatchment 78S: Runoff to PCB78

Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.04 af, Depth= 2.44"

_Area (ac) CN Description
0.173 98 Paved parking & roofs
0.014 39 >75% Grass cover, Good, HSG A
0.187 94 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subartahmant 705, Barnell to DCD (2)
Subcatchinent 795: Runoff to PCB62
Runoff = 0.3 cfs @ 12.14 hrs, Volume= 0.03 af, Depth= 0.72"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.10"
Area (ac) CN Description
0.232 98 Paved parking & roofs
0.229 39 >75% Grass cover, Good, HSG A
0.461 69 Weighted Average
To Length Slope Velocity Canacity Description
(min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 80S: Runoff to PCB66
Runoff = $0.6 \text{cfs} @ 12.11 \text{brs}$ Volume= 0.05sf Dopth= 2.26"
0.00 ar, Depui- 2.20
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.10"
Area (ac) CN Description
0.250 98 Paved parking & roofs
0.028 39 >75% Grass cover, Good, HSG A
0.278 92 Weighted Average
To Length Slope Velocity Conscity Description
(min) (feet) (ft/ft) (ft/sec) (cfs)

	1-LL	B_2006										Type	III 24-h	ir 2-yr	Kainj	HIL U.I
Prepared I HydroCAD	oy Me ® 7.00	ridian Eng s/n 000814	ineering © 1986-20	, Inc. 003 Appli	ed Micr	ocomput	ter S	Sys	stems	6					3	/14/20
			S	ubcatcl	ıment	81S: R	lur	no	ff t	o PC	B76					
Runoff	-	0.5 cfs @	12.12 hrs,	Volume	-	0.04 at	f, E	Der	oth=	1.83	,n					
Runoff by S	CS TR	-20 method	I. UH=SC	S. Time S	ipan= 5	.00-30.00) hr	rs.	dt=	0.051	nrs					
Type III 24-	hr 2-yr	Rainfall=	3.10"					~,								
Area (ac)	CN	Descript	tion				_	_	_	_						
0.198	98 39	Paved p	arking &	roofs Good F	ISG A											
0.243	87	Weighte	d Averag	;e	100 11		-	-			-					
Tc Le (min) (ngth feet)	Slope Ve (ft/ft) (f	elocity (ft/sec)	Capacity (cfs)	Descr	iption										
10.0			11		Direc	t Entry,	10	m	in. 1	nini	mum	1				
Runoff = Runoff by S Type III 24-1	= CS TR- nr 2-yr	0.2 cfs @ _1 -20 method Rainfall=3	12.16 hrs, , UH=SC 3.10"	Volume S, Time S	= pan= 5.	0.02 af, 00-30.00	, D	Dep s, c	oth= dt= 0	0.48).05 h	rs					
Runoff = Runoff by S Type III 24-1 <u>Area (ac)</u> 0.212	= CS TR- nr 2-yr <u>CN</u> 98	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa	12.16 hrs, , UH=SC 3.10" ion arking & 1	Volume S, Time S roofs	= pan= 5.	0.02 af, 00-30.00	, D)ep	oth= dt= (0.48).05 h	rs					
Runoff = Runoff by S Type III 24-1 <u>Area (ac)</u> 0.212 0.311	CS TRonar 2-yr Nr 2-yr CN 98 39	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa >75% Gr	12.16 hrs, , UH=SCS 3.10" ion arking & 1 ass cover,	Volume S, Time S roofs , Good, F	= pan= 5. ISG A	0.02 af, 00-30.00	, D	Dep	oth= dt= 0	0.48).05 h	rs					
Runoff = Runoff by S Type III 24-1 <u>Area (ac)</u> 0.212 0.311 0.523	CS TRant 2-yr CN 98 39 63	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa >75% Gr Weighter	12.16 hrs, , UH=SC 3.10" ion arking & 1 ass cover, d Average	Volume S, Time S roofs , <u>Good, F</u> e	= pan= 5. ISG A	0.02 af, 00-30.00	, D	Dep	oth= dt= 0	0.48).05 h	rs					
Runoff = Runoff by S Type III 24-1 <u>Area (ac)</u> 0.212 0.311 0.523 Tc Ler (min) (1	CS TR for 2-yr <u>CN</u> 98 39 63 ngth feet)	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa >75% Gr Weighted Slope Ve (ft/ft) (f	12.16 hrs, , UH=SCS 3.10" ion arking & 1 ass cover, d Average clocity C t/sec)	Volume S, Time S roofs , Good, H e Capacity (cfs)	= pan= 5. ISG A Descri	0.02 af, 00-30.00 ption	, D	Dep	oth= dt=0	0.48 0.05 h	rs					
Runoff = Runoff by S Type III 24-1 Area (ac) 0.212 0.311 0.523 Tc Ler (min) (1 10.0	CS TRing for 2-yr CN 98 39 63 63 ngth feet)	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa >75% Gr Weighted Slope Ve (ft/ft) (f	12.16 hrs, , UH=SCS 3.10" ion arking & 1 ass cover, d Average clocity C t/sec)	Volume S, Time S roofs , Good, H e Capacity (cfs)	= pan= 5. ISG A Descri Direct	0.02 af, 00-30.00 ption t Entry,	, D hrs 10	Dep s, c	in. n	0.48 0.05 h	rs					
Runoff = Runoff by S Type III 24-1 Area (ac) 0.212 0.311 0.523 Tc Len (min) (1 10.0	CS TRing for 2-yr CN 98 39 63 63 ngth feet)	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa >75% Gr Weighted Slope Ve (ft/ft) (f	12.16 hrs, , UH=SCS 3.10" ion arking & 1 ass cover, d Average clocity C t/sec) St	Volume S, Time S roofs , Good, H e Capacity (cfs) 1bcatch	= pan= 5. ISG A Descri Direct ment	0.02 af, 00-30.00 ption t Entry, 83S: Rt	, D hrs 10	Dep s, c mi	in. n	0.48 0.05 h	rs num B72					
Runoff = Runoff by S Type III 24-1 <u>Area (ac)</u> 0.212 0.311 0.523 Tc Ler (min) (1 10.0	CS TRing for 2-yr CN 98 39 63 63 ngth feet)	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa >75% Gr Weighted Slope Ve (ft/ft) (f	12.16 hrs, , UH=SCS 3.10" ion arking & r arking & r ass cover, d Average clocity C t/sec) St	Volume S, Time S roofs , Good, F e Capacity (cfs) 1bcatch	= pan= 5. ISG A Descri Direct ment	0.02 af, 00-30.00 ption t Entry, 83S: Ru	, D hrs 10 un	Dep s, c mi	in. n	0.48 0.05 h	rs num B72					
Runoff = Runoff by S Type III 24-1 <u>Area (ac)</u> 0.212 0.311 0.523 Tc Ler (min) (1 10.0 Runoff =	CS TR nr 2-yr CN 98 39 63 ngth feet)	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa >75% Gr Weighted Slope Ve (ft/ft) (f	12.16 hrs, , UH=SCS 3.10" ion arking & 1 arking & 1 arking & 1 d Average clocity C t/sec) St 2.12 hrs,	Volume S, Time S roofs , Good, F e Capacity (cfs) ubcatch Volume=	= pan= 5. ISG A Descri Direct ment	0.02 af, 00-30.00 ption Entry, 83S: R1 0.04 af,	, D hrs 10 un	mi of	in. r	0.48 0.05 h ninin PC 1.46'	num					
Runoff = Runoff by S Type III 24-1 <u>Area (ac)</u> 0.212 0.311 0.523 Tc Ler (min) (1 10.0 Runoff = Runoff by S Type III 24-1	CS TR- nr 2-yr CN 98 39 63 ngth feet) CS TR- nr 2-yr	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa >75% Gr Weighted Slope Ve (ft/ft) (f 0.5 cfs @ 1 20 method, Rainfall=3	12.16 hrs, , UH=SCS 3.10" ion arking & r arking & r arking & r arking & r arking & r arking & r ass cover, d Average clocity C t/sec) St 2.12 hrs, . UH=SCS .10"	Volume S, Time S roofs , Good, F e Capacity (cfs) ubcatch Volume= S, Time Sj	= pan= 5. ISG A Descri Direct ment = pan= 5.0	0.02 af, 00-30.00 ption Entry, 83S: Ru 0.04 af, 00-30.00	, D hrs 10 un hrs	mi of s, d	in. r if to th=	0.48 0.05 h ninin 0 PC 1.46' .05 h	num B72					
Runoff = Runoff by S ⁱ Type III 24-1 <u>Area (ac)</u> 0.212 0.311 0.523 Tc Ler (min) (1 10.0 Runoff = Runoff by S ^o Type III 24-h <u>Area (ac)</u>	CS TR- nr 2-yr 200 98 39 63 63 ngth feet) CS TR- nr 2-yr CN	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa >75% Gr Weighted Slope Ve (ft/ft) (f 0.5 cfs @ 1 20 method, Rainfall=3 Descripti	12.16 hrs, , UH=SCS 3.10" ion arking & r ass cover, d Average clocity C t/sec) St 2.12 hrs, , UH=SCS .10"	Volume S, Time S roofs , Good, F e Capacity (cfs) ubcatch Volume= S, Time Sj	= pan= 5. [SG A Descri Direct ment = pan= 5.0	0.02 af, 00-30.00 ption Entry, 83S: Ru 0.04 af, 00-30.00	, D hrs 10 un hrs	mi of s, d	in. r f to th= 0	0.48 0.05 h ninin PC 1.46' .05 h	num B72					
Runoff = Runoff by S ⁱ Type III 24-1 <u>Area (ac)</u> 0.212 0.311 0.523 Tc Ler (min) (1 10.0 Runoff = Runoff by S ^G Type III 24-1 <u>Area (ac)</u> 0.224 0.086	CS TR- nr 2-yr 98 39 63 ngth feet) CS TR- nr 2-yr CN 98 30	0.2 cfs @ 1 -20 method Rainfall=3 Descript Paved pa >75% Gr Weighted Slope Ve (ft/ft) (f 0.5 cfs @ 1 20 method, Rainfall=3 Descripti Paved pa >75% Gr	12.16 hrs, , UH=SCS 3.10" ion arking & r ass cover, d Average clocity C t/sec) St 2.12 hrs, .10" St 2.12 hrs, .10" con urking & r ass cover	Volume S, Time S roofs , Good, F e Capacity (cfs) ubcatch Volume= S, Time Sp roofs Good, H	= pan= 5. ISG A Descri Direct ment = pan= 5.0	0.02 af, 00-30.00 ption Entry, 83S: R1 0.04 af, 00-30.00	, D hrs 10 un hrs	mi of s, d	oth= dt= 0 in. n if to th= dt= 0	0.48 0.05 h ninin 9 PC 1.46' .05 h	num B72					

Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)

10.0

5

0

Direct Entry, 10 min. minimum

Subcatchment 84S: Runoff to PCB74

Runoff = 0.5 cfs @ 12.12 hrs, Volume= 0.04 af, Depth= 1.20"

Area (ac)	CN	Description	
0.262	98	Paved parking & roofs	
0.138	39	>75% Grass cover, Good, HSG A	
0.400	78	Weighted Average	
Tc Leng (min) (fe	gth eet)	Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs)	
10.0		Direct Entry, 10 min. minimum	
		Subcatchment 85S: Runoff to PCB89	
Runoff =	(0.8 cfs @ 12.11 hrs, Volume= 0.07 af. Depth= 2.73"	
unoff by SCS	STR-2	20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	
ype III 24-hr	2-yr	Rainfall=3.10"	
Area (ac)	CN	Description	
0.303	98	Paved parking & roofs	
0.014	74	>75% Grass cover Good HSC C	
0.317	07	Weighted Average	
0.017		Weighted Average	
Tc Leng	th 9	Slope Velocity Canacity Description	
(min) (fee	et) ((ft/ft) (ft/sec) (cfs)	
10.0		Direct Entry 10 min minimum	
		2 note Entry, to mile million	
		Subcatchment 865: Runoff to PCB85	
		Subtateminent 665. Runoff to T Cbos	
unoff =	0	0.2 cfs @ 12.14 hrs. Volume= $0.02 af$. Depth= 0.68 "	
unoff by SCS	TR-2	20 method, UH=SCS, Time Span= $5.00-30.00$ hrs. dt= 0.05 hrs	
ype III 24-hr :	2-yr	Rainfall=3.10"	
Area (ac)	CN	Description	
0.132	98	Paved parking & roofs	
0.135	39	>75% Grass cover, Good, HSG A	
0.008	74	grass good c soil	
0.275	68	Weighted Average	
Tc Lengt	th S	Slope Velocity Capacity Description	
min) (fee	t) (1	ft/ft) (ft/sec) (cfs)	
10.0		Direct Entry 10 min minimum	

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Subcatchment 87S: Runoff to PCB83

Runoff = 0.8 cfs @ 12.11 hrs, Volume= 0.07 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"

Area (ac) CN Description
0.334 98 Paved parking & roofs
0.059 39 >75% Grass cover, Good, HSG A
0.393 89 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 88S: Runoff to PCB85
Runoff = 0.8 cfs @ 12.11 hrs, Volume= 0.07 af, Depth= 2.54"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"
Area (ac) CN Description
0.289 98 Paved parking & roofs 0.036 74 >75% Grass cover, Good, HSG C
0.325 95 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 89S: Runoff to PCB86
Runoff = 0.6 cfs @ 12.11 hrs, Volume= 0.05 af, Depth= 2.82"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"
Area (ac) CN Description
0.221 98 Paved parking & roofs
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry,

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Type III 24-hr 2-yr Rainfall=3.10"

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Subcatchment 90S: Runoff to PCB81

Runoff = 1.4 cfs @ 12.11 hrs, Volume= 0.12 af, Depth= 2.54"

Area (ac) CN	V Description
0.493 98	8 Paved parking & roofs
0.068 74	4 >75% Grass cover, Good, HSG C
0.561 95	5 Weighted Average
Tc Length (min) (feet)	Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs)
10.0	Direct Entry, 10 min. minimum
	Subcatchment 91S: Runoff to PCB95
Runoff =	0.2 cfs @ 12.11 hrs, Volume= 0.02 af, Depth= 2.54"
Runoff by SCS TR	2-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
ype III 24-hr 2-y	r Rainfall=3.10"
Area (ac) CN	Description
0.080 98	Paved parking & roofs
0.012 74	>75% Grass cover, Good, HSG C
0.092 95	Weighted Average
To Longth	
(min) (feet)	(ft/ft) (ft/sec) (cfc)
10.0	Direct Entry, 10 min. minimum
	Subcatchment 92S: Runoff to PCB96
unoff =	0.4 cfs @ 12.11 hrs, Volume= 0.03 af, Depth= 2.08"
unoff by SCS TR.	20 method UH=SCS Time Span= 5.00.20.00 here it = 0.05 h
vpe III 24-hr 2-vr	Rainfall= 3.10°
)	
Area (ac) CN	Description
0.114 98	Paved parking & roofs
0.062 74	>75% Grass cover, Good, HSG C
0.176 90	Weighted Average
Tc Length	Slope Velocity Capacity Description
(min) (feet)	(ft/ft) (ft/sec) (cfs)
10.0	Direct Entry, 10 min. minimum

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Subcatchment 93S: Runoff to PCB	98
Runoff = $0.2 \text{ cfs} @ 12.14 \text{ hrs}$, Volume= 0.02 af , Depth= $0.77''$	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	5
Area (ac) CN Description	
0.180 98 impervious 0.162 39 575% Grass cover Good HSG A	
0.342 70 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry,	
Subcatchment 945: Runoff to PCB	88
Subtactiment 510, Ranon to 1 02	
Runoff = $0.3 \text{ cfs} @ 12.11 \text{ hrs}$, Volume= 0.02 af , Depth= $2.82^{"}$	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 2-yr Rainfall=3.10"	
Area (ac) CN Description	
0.102 98 impervious area	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	

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Type III 24-hr 2-yr Rainfall=3.10"

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Reach 10R: DP 10

Inflow Area =46.946 ac, Inflow Depth =0.08" for 2-yr eventInflow =0.9 cfs @12.58 hrs, Volume=0.30 afOutflow =0.9 cfs @12.58 hrs, Volume=0.30 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.9 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.7 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.15' @ 12.58 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 20R: Design Point #20

Inflow Area =		4.470 ac, Inflow Depth = 0.82 "			for 2-yr event	
Inflow	=	2.8 cfs @	12.23 hrs,	Volume=	0.30 af	
Outflow	=	2.8 cfs @	12.23 hrs,	Volume=	0.30 af, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.9 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.4 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.28' @ 12.23 hrs Capacity at bank full= 1,287.1 cfs 99.0" Diameter Pipe n= 0.010 Length= 1.0' Slope= 0.0100 '/'

Reach 30R: Design Point #30

Inflow Area =		6.360 ac, Inflow Depth = 0.68 "			for 2-yr event	
Inflow	=	2.9 cfs @	12.29 hrs,	Volume=	0.36 af	
Outflow	=	2.9 cfs @	12.29 hrs,	Volume=	0.36 af, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.9 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.27' @ 12.29 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 40R: Design Point #40

Inflow Area =		0.510 ac,	Inflow Depth = $0.00"$	for 2-yr event
Inflow	=	0.0 cfs @	5.00 hrs, Volume=	0.00 af
Outflow	=	0.0 cfs @	5.00 hrs, Volume=	0.00 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 0.0 fps, Min. Travel Time= 0.0 min Avg. Velocity = 0.0 fps, Avg. Travel Time= 0.0 min

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Peak Depth= 0.00' @ 5.00 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 99R: Design Point #50

Inflow A	rea =	0.330 ac,	Inflow Depth = 0.00"	for 2-yr event
Inflow	=	0.0 cfs @	5.00 hrs, Volume=	0.00 af
Outflow	=	0.0 cfs @	5.00 hrs, Volume=	0.00 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 0.0 fps, Min. Travel Time= 0.0 min Avg. Velocity = 0.0 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.00' @ 5.00 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

PROPOSED CONDITIONS 10-YEAR 24-HOUR STORM EVENT ANALYSIS

Subcatchment 10S: OVERLAND FLOW TO DP 10

Runoff = 4.8 cfs @ 12.31 hrs, Volume= 0.81 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area (ac)	CN	Description
8.872	30	WOODS GROUP A
1.100	55	WOODS GROUP B
5.512	70	WOODS GROUP C
0.270	76	GRAVEL PATH GROUP A
0.820	98	RTE 1 & WETLANDS .74
0.050	89	PATH C
0.300	86	STRIPPED AREAS GROUP C
0.758	74	GRASS GROUP C
1.523	39	GRASS GROUP A
0.176	98	Parking at base of hill
19.381	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.1000	0.1		Sheet Flow, SHEET FLOW Woods: Light underbrush n= 0.400 P2= 3.10"
0.8	238	0.1000	5.1		Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps
0.2	80	0.1750	6.7		Shallow Concentrated Flow, OVERLAND TO WET Unpaved Kv= 16.1 fps

12.5 418 Total

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Subcatchment 11S: OVERLAND FLOW TO R29

Runoff = 1.0 cfs @ 12.11 hrs, Volume= 0.08 af, Depth= 3.10"

Area	(ac)	CN	Desc	ription		
0.	170	98	IMPH	ERVIOUS A	AREAS	
0.	150	74	GRA	SS GROUP	°C	
0.	320	87	Weig	ted Aver	age	
Tc (min)	Len (fe	eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0						Direct Entry, 10 MINUTE MINIMUM

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Subcatchment 12S: OVERLAND FLOW TO R28

Runoff	=	3.8 cfs @	12.15 hrs,	Volume=	0.35 af. Depth= 3 30"
				1 OIGHIC	$0.00 a_1$, $0.00 m = 0.00$

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area	(ac) C	CN	Desc	ription		
0	.800	98	IMPERVIOUS AREAS		AREAS	
0	.060	70	WOC	DDS GROU	JPC	
0	.400	74	GRA	SS GROUI	PC	
1	.260	89	Weig	hted Aver	age	
Tc (min)	Length (feet)	Sl (ft	ope /ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.1	700	0.2		Sheet Flow, SHEET FLOW
0.1	42	0.2	400	7.9		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
2.2	294	0.0	200	2.3		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, CONCENTRATED FLOW
0.9	230	0.04	400	4.1		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, GUTTER FLOW Paved Kv= 20.3 fps
12.5	666	Tot	tal			I.

Subcatchment 13S: OVERLAND FLOW TO R24

Runoff = 0.9 cfs @ 12.11 hrs, Volume= 0.08 af, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area	(ac)	CN	Desc	Description					
0.	.140	98	IMP	ERVIOUS	AREAS				
0.	.190	74	GRA	SS GROUI	PC				
0.	.330	84	Weig	ted Aver	age				
Tc (min)	Leng (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
10.0						Direct Entry, 10 MINUTE MINIMUM			

Subcatchment 14S: OVERLAND FLOW TO R25

Runoff = 0.8 cfs @ 12.11 hrs, Volume= 0.07 af, Depth= 3.30°

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Runoff

Type III 24-hr 10-yr Rainfall=4.50"

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Area (ac)	CN	Desc	ription		
0.150	98	IMPE	ERVIOUS A	AREAS	
0.090	74	GRA	SS GROUI	°C	
0.240	89	Weig	hted Aver	age	
Tc Ler (min) (f	ngth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 MINUTE MINIMUM
			Subca	tchment	16S: OVERLAND FLOW TO R22
Runoff =		0.6 cfs (@ 12.11 hi	s, Volume	= 0.05 af, Depth= 3.80"
Runoff by S Fype III 24-1	CS TR ur 10-y	-20 metl /r Rainf	hod, UH=9 all=4.50"	CS, Time S	Span= 5.00-30.00 hrs, dt= 0.05 hrs
Area (ac)	CN	Desc	ription		
0.140	98	IMPE	ERVIOUS A	AREAS	
0.030	04	Woig	ted Aver	age	
0.170	74	vverg	filed Hven	чЕс	
Tc Ler (min) (f	ngth feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 MINUTE MINIMUM
Runoff =	e)	1.3 cfs (Subca @ 12.12 h	tchment s, Volume	17S: OVERLAND FLOW TO R21 = 0.10 af, Depth= 2.64"
Runoff by So Type III 24-1	CS TR ur 10-y	-20 met yr Rainf	hod, UH=5 fall=4.50"	6CS, Time S	Span= 5.00-30.00 hrs, dt= 0.05 hrs
Area (ac)	CN	Desc	ription	DELC	
0.150	98	IMPI	SECROLI	AREAS	
0.320	82	Weig	ted Aver	age	
Tc Ler	ngth feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	-				Direct Entry, 10 MINUTE MINIMUM
			Subca	atchment	18S: OVERLAND FLOW TO R16
Runoff =	0	0.4 cfs	@ 12.13 h	rs, Volume	e= 0.03 af, Depth= 1.46"

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Type III 24-hr 10-yr Rainfall=4.50"

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Area (a	ac) CN	Desc	ription		
0.1	30 98	IMP	ERVIOUS	AREAS	
0.1	40 39	GRA	SS GROUI	PA	
0.2	70 67	Weig	ghted Aver	age	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 MINUTE MINIMUM
			Subca	tchment	19S: OVERLAND FLOW TO R17
Runoff	=	0.3 cfs	@ 12.14 hr	s, Volume	= 0.03 af, Depth= 0.96"
Runoff by Type III 2 Area (a	sCS TR 4-hr 10-y c) CN	-20 met r Rainf Desci	hod, UH=S all=4.50" ription	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
0.14	10 98	IMPE	RVIOUS	REAS	
0.27	73 39	GRAS	SS GROUP	A	
0.41	3 59	Weig	hted Avera	ige	
Tc I (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0			200		Direct Entry, 10 min. minimum
			Subcate	hment 2	0S: OVERLAND FLOW TO DP 20
Runoff	-	6.5 cfs @	2 12.21 hrs	, Volume=	= 0.65 af, Depth= 1.75"
Runoff by Type III 24	SCS TR- I-hr 10-yr	20 meth Rainfa	od, UH=S0 11=4.50"	CS, Time Sp	oan= 5.00-30.00 hrs, dt= 0.05 hrs
Area (ac) CN	Descr	iption		

Area	(ac) C	N Des	cription						
0.	.040	98 WE	TLANDS	1.1.1.1.1					
0.	100 7	6 GRA	GRAVEL PATH GROUP C						
0.	400 7	4 GRA	SS GROUI	PC					
3.	930 7	70 WO	ODS GROU	ЛРС					
4.	470 7	71 Wei	ghted Aver	age					
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
15.1	100	0.0500	0.1		Sheet Flow, SHEET FLOW				
1.3	495	0.1600	6.4		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps				
16.4	595	Total							

Subcatchment 21S: OVERLAND FLOW TO R14

0.04 af, Depth= 2.13" 0.5 cfs @ 12.12 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area (ac) CN I	Description
0.140 98 I	MPERVIOUS AREAS
0.084 39 0	GRASS GROUP A
0.224 76 V	Veighted Average
Tc Length Slo (min) (feet) (ft/	ope Velocity Capacity Description /ft) (ft/sec) (cfs)
10.0	Direct Entry, 10 min. minimum
	Subcatchment 22S: OVERLAND FLOW TO R13
Runoff = 0.4	cfs @ 12.12 hrs, Volume= 0.03 af, Depth= 1.67"
Runoff by SCS TR-20	method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr R	ainfall=4.50"
Area (ac) CN I	Description
0.130 98 I	MPERVIOUS AREAS
0.120 39 0	GRASS GROUP A
0.250 70 V	Veighted Average
Tc Length Slo (min) (feet) (ft/	ope Velocity Capacity Description /ft) (ft/sec) (cfs)
10.0	Direct Entry, 10 MINUTE MINIMUM
	Subcatchment 23S: OVERLAND FLOW TO R11
Runoff = 0.2	cfs @ 12.21 hrs, Volume= 0.03 af, Depth= 0.55"
Runoff by SCS TR-20	method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr R	ainfall=4.50"
Area (ac) CN I	Description
0.140 98 I	MPERVIOUS AREAS
0.523 39 >	v75% Grass cover, Good, HSG A
0.663 51 V	Veighted Average
Tc Length Slo (min) (feet) (ft,	ope Velocity Capacity Description /ft) (ft/sec) (cfs)
10.0	Direct Entry, 10 MINUTE MINIMUM

10.0

0

)

Subcatchment 24S: OVERLAND FLOW TO R34

Runoff	=	0.3 cfs @	12.12 hrs,	Volume=	0.03 af Denth= 2.13"
				v orallic	$0.00 a_1$. Depute 715

_Area (ac)	CN	Descrip	otion		
0.100	98	IMPER	VIOUS	AREAS	
0.060	39	GRASS	GROUI	ΡA	
0.160	76	Weight	ed Aver	age	
Tc Len (min) (fe	igth s eet) (Slope V ft/ft)	elocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 MINUTE MINIMUM
			Subca	atchmen	t 25S: OVERLAND FLOW TO R6
Runoff =	1	2 cfs @	12.13 hr	s, Volume	e= 0.10 af, Depth= 1.53"
Runoff by SC	STR-2	0 method	l, UH=S	CS, Time	5pan = 5.00-30.00 hrs. dt = 0.05 hrs.
Type III 24-hi	r 10-yr	Rainfall	=4.50"		
Area (ac)	CN	Descript	tion		
0.140	98	impervi	ous area		
0.426	74	grass go	od c soil		
0.238	39	grass go	od a soil		
0.804	68	Weighte	d Avera	ge	
Tc Leng	gth S	lope Ve	elocity	Capacity	Description
(min) (fe	et) (f	t/ft) (f	t/sec)	(cfs)	
10.0					Direct Entry, 10 MINUTE MINIMUM
			Subca	tchment	26S: OVERLAND FLOW TO R5
Runoff =	0.6	ocfs@1	2.11 hrs	, Volume	= 0.05 af, Depth= 3.30"
unoff by CCC	TD 20	mathad	ITT.CC	от [.] о	
Type III 24-hr	10 JUNE 1	nemoa,	A FON	.5, 1 ime 5	pan= 5.00-30.00 hrs, dt= 0.05 hrs
ype in 24-in	10-y1 1	Nannan-	4.50		
Area (ac)	CN I	Descripti	on		
0.120	98	MPERV	IOUS AI	REAS	
0.070	74 (GRASS C	GROUP	2	
0.190	89	Weighted	l Averag	<u>je</u>	
Tc Leng (min) (fee	th Sle et) (ft	ope Ve /ft) (ft	locity (/sec)	Capacity (cfs)	Description
10.0				()	Direct Entry, 10 MINUTE MINIMUM

2

Subcatchment 28S: OVERLAND FLOW TO R1

Runoff = 0.6 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 2.38"

Area (ac)	CN	Description
0.125	98	IMPERVIOUS AREAS
0.050	39	GRASS GROUP A
0.060	74	GRASS GROUP C
0.235	79	Weighted Average
Tc Len (min) (fe	gth eet) (Slope Velocity Capacity Description ft/ft) (ft/sec) (cfs)
10.0		Direct Entry, 10 MINUTE MINIMUM
		Subcatchment 29S: OVERLAND FLOW R2
Runoff =	(0.6 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 2.64"
u non		
lunoff by SC	STR-2	20 method, UH=SCS, Time Span= $5.00-30.00$ hrs, dt= 0.05 hrs
ype III 24-h	r 10-yr	Kaintall=4.50"
Area (ac)	CN	Description
0.131	98	IMPERVIOUS AREAS
0.040	39	GRASS GROUP A
0.040	74	GRASS GROUP C
0.211	82	Weighted Average
Tc Len (min) (fe	gth eet)	Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs)
10.0		Direct Entry, 10 MINUTE MINIMUM
		THE AND FLOW TO DR 20
		Subcatchment 305: OVERLAND FLOW TO DE 50
	,	0.81 af. Depth = 1.53"
Runoff =		
Pupoff by SC	STR.	20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Funo III 24-h	r 10-vi	Rainfall=4.50"
rype in 24 in	u 10 y.	
Area (ac)	CN	Description
0.410	98	WETLANDS
0.090	89	GRAVEL PATH GROUP C
0.030	76	GRAVEL PATH GROUP A
1.000	74	GRASS GROUP C
2.100	70	WOODS GROUP C
1.580	30	WOODS GROUP A
1.150	98	roof area
6.360	68	Weighted Average

Type III 24-hr 10-yr Rainfall=4.50"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0400	0.1		Sheet Flow, SHEET FLOW
0.4	113	0.0970	5.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
0.5	252	0.2300	7.7		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, CONCENTRATED FLOW
0.8	202	0.0690	4.2		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, CONCENTRATED FLOW
1.0	627	0.0480	10.2	336.08	Channel Flow, CHANNEL THRU WETLANDS Area= 33.0 sf Perim= 36.3' r= 0.01' n= 0.020
10.0	1 004	1			1204 0010 01 1 CHIII - 50.5 1 - 0.91 N= 0.030

19.2 1,294 Total

Subcatchment 31S: OVERLAND FLOW TO R31

Runoff = 0.3 cfs @ 12.17 hrs, Volume=

0.04 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

_	Area (ac)	CN	Description	
	0.033	98	IMPERV AREAS on lot	
	0.626	39	>75% Grass cover, Good, HSG A	
_	0.156	98	Paved area in Rte. 1	
	0.815	53	Weighted Average	

(min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity	Description
(many	(reet)	(10/10)	(IL/ SEL)	(CIS)	

10.0

Direct Entry, 10 min. minimum

Subcatchment 32S: OVERLAND FLOW TO R36

Runoff = 0.4 cfs @ 12.12 hrs, Volume= 0.04 af, Depth= 1.97"

Area	(ac)	CN	Desc	ription			
0	.090	98	IMP	ERVIOUS	AREAS		
0	.070	74	GRASS GROUP C				
0	.060	39	GRA	SS GROUI	PA		
0.	.220	74	Weig	ghted Aver	age		
Tc (min)	Leng (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0						Direct Entry, 10 MINUTE MINIMUM	

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	OVERIAND ELOW TO DO
Subcatchment 335:	OVERLAND FLOW TO RS
Runoff = 0.1 cfs @ 12.11 hrs, Volume=	0.01 af, Depth= 4.16"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5 Type III 24-hr 10-yr Rainfall=4.50"	.00-30.00 hrs, dt= 0.05 hrs
Area (ac) CN Description	
0.030 98 impervious area	
Tc Length Slope Velocity Capacity Descr (min) (feet) (ft/ft) (ft/sec) (cfs)	iption
10.0 Direc	t Entry, 10 MINUTE MINIMUM
C. Last Lange 246.	AND ELOW TO B25
Subcatchment 345: C	OVERLAND FLOW TO KSS
Runoff = 0.2 cfs @ 12.11 hrs, Volume=	0.02 af, Depth= 4.16"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.	.00-30.00 hrs, dt= 0.05 hrs
Гуре III 24-hr 10-уг Rainfall=4.50"	
And (a) CN Description	
Area (ac) CN Description	
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS	
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Descr	iption
Area (ac)CNDescription0.06098IMPERVIOUS AREASTcLengthSlopeVelocityCapacity(min)(feet)(ft/ft)(ft/sec)(cfs)	iption
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) Or the construction 10.0 Direct Direct Direct Direct	iption t Entry, 10 MINUTE MINIMUM
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) Direction 10.0 Image: constraint of the second seco	iption t Entry, 10 MINUTE MINIMUM
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) Other 10.0 Direct Subcatchment 35S: OV	iption et Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) Oirect 10.0 Direct Subcatchment 35S: OV	iption et Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Description Tc Length Slope Velocity Capacity Description 10.0 (ft/ft) (ft/sec) (cfs) Direction Subcatchment 35S: OV Runoff = 5.9 cfs @ 12.11 hrs, Volume=	iption at Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3 0.49 af, Depth= 3.10"
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Description Tc Length Slope Velocity Capacity Description Interview (ft/ft) (ft/sec) (cfs) Direction 10.0 Direction Direction Direction Runoff = 5.9 cfs @ 12.11 hrs, Volume=	iption et Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3 0.49 af, Depth= 3.10"
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Description Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) Direction 10.0 Direction Direction Direction Runoff = 5.9 cfs @ 12.11 hrs, Volume= Runoff by SCS TR-20 method, UH=SCS, Time Span= 5. Function Ultrate Scientification	iption et Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Description Tc Length Slope Velocity Capacity Description 10.0 (ft/ft) (ft/sec) (cfs) Direction 10.0 Direction Direction Direction Runoff = 5.9 cfs @ 12.11 hrs, Volume= Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.7 Type III 24-hr 10-yr Rainfall=4.50"	iption St Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Description Tc Length Slope Velocity Capacity Description 10.0 Direct Direct 10.0 Subcatchment 35S: OV Runoff = 5.9 cfs @ 12.11 hrs, Volume= Runoff by SCS TR-20 method, UH=SCS, Time Span= 5. Type III 24-hr 10-yr Rainfall=4.50" Area (ac) CN Description	iption et Entry, 10 MINUTE MINIMUM YERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac)CNDescription0.06098IMPERVIOUS AREASTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)Direct10.0DirectDirectDirect10.0Subcatchment 35S: OVRunoff=5.9 cfs @12.11 hrs, Volume=Runoffby SCS TR-20 method, UH=SCS, Time Span= 5.7Type III 24-hr 10-yrRainfall=4.50"Area (ac)CNDescription0.63098IMPERVIOUS AREAS	iption et Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac)CNDescription0.06098IMPERVIOUS AREASTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)Direct10.0DirectDirectDirect10.0Subcatchment 35S: OVRunoff=5.9 cfs @12.11 hrs, Volume=Runoffby SCS TR-20 method, UH=SCS, Time Span= 5.Type III 24-hr 10-yrRainfall=4.50"Area (ac)CNDescription0.63098IMPERVIOUS AREAS0.73098IMPERVIOUS POND BOTTOM	iption St Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac)CNDescription0.06098IMPERVIOUS AREASTcLengthSlopeVelocityCapacityDescr(min)(feet)(ft/ft)(ft/sec)(cfs)10.0DirectSubcatchment 35S: OVRunoff=5.9 cfs @12.11 hrs, Volume=Runoffby SCS TR-20 method, UH=SCS, Time Span= 5.Type III 24-hr 10-yrRainfall=4.50"Area (ac)CNDescription0.63098IMPERVIOUS AREAS0.73098IMPERVIOUS POND BOTTOM0.05639GRASS GROUP A	iption St Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac)CNDescription 0.060 98IMPERVIOUS AREASTcLengthSlopeVelocityCapacityDescr(min)(feet)(ft/ft)(ft/sec)(cfs)10.0DirectSubcatchment 35S: OVRunoff= $5.9 cfs$ @12.11 hrs, Volume=Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.Type III 24-hr 10-yrRainfall=4.50"Area (ac)CNDescription0.63098IMPERVIOUS AREAS0.73098IMPERVIOUS POND BOTTOM0.05639GRASS GROUP A0.42661GRASS GROUP B	iption EXAMPLE MINIMUM PERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac)CNDescription0.06098IMPERVIOUS AREASTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)10.0DirectSubcatchment 35S: OVRunoff=5.9 cfs @12.11 hrs, Volume=Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.Type III 24-hr 10-yrRainfall=4.50"Area (ac)CNDescription0.63098IMPERVIOUS AREAS0.73098IMPERVIOUS POND BOTTOM0.05639GRASS GROUP A0.42661GRASS GROUP B0.02476GRAVEL GROUP A	iption et Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac)CNDescription 0.060 98IMPERVIOUS AREASTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)10.0DirectSubcatchment 35S: OVRunoff5.9 cfs @ 12.11 hrs, Volume=Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.Type III 24-hr 10-yrRainfall=4.50"Area (ac)CNDescription0.63098IMPERVIOUS AREAS0.73098IMPERVIOUS POND BOTTOM0.05639GRASS GROUP A0.42661GRASS GROUP B0.02476GRAVEL GROUP A0.03185GRAVEL GROUP B	iption et Entry, 10 MINUTE MINIMUM VERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac)CNDescription 0.060 98IMPERVIOUS AREASTcLengthSlopeVelocityCapacityDescription (min) (feet)(ft/ft)(ft/sec)(cfs) 10.0 DirectSubcatchment 35S: OV 10.0 Subcatchment 35S: OVRunoff5.9 cfs @ 12.11 hrs, Volume=Runoff by SCS TR-20 method, UH=SCS, Time Span= 5. Type III 24-hr 10-yrRainfall=4.50"Area (ac)CNDescription0.63098 0.630 98IMPERVIOUS AREAS 0.730 98IMPERVIOUS POND BOTTOM 0.056 39GRASS GROUP A 0.426 61GRASS GROUP B 0.024 76GRAVEL GROUP B 0.031 85GRAVEL GROUP B 1.897 87Weighted Average	iption EXAMPLE MINIMUM VERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac)CNDescription0.06098IMPERVIOUS AREASTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)10.0DirectSubcatchment 35S: OVRunoff=5.9 cfs @12.11 hrs, Volume=Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.Type III 24-hr 10-yrRainfall=4.50"Area (ac)CNDescription0.63098IMPERVIOUS AREAS0.73098IMPERVIOUS POND BOTTOM0.05639GRASS GROUP A0.42661GRASS GROUP B0.02476GRAVEL GROUP A0.03185GRAVEL GROUP B1.89787Weighted AverageTa Langth	iption tt Entry, 10 MINUTE MINIMUM TERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" .00-30.00 hrs, dt= 0.05 hrs
Area (ac)CNDescription 0.060 98IMPERVIOUS AREASTcLengthSlopeVelocityCapacityDescr(min)(feet)(ft/ft)(ft/sec)(cfs)10.0DirectSubcatchment 35S: OVRunoffe5.9 cfs @12.11 hrs, Volume=Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.Type III 24-hr 10-yrRainfall=4.50"Area (ac)CNDescription0.630980.63098IMPERVIOUS AREAS0.73098IMPERVIOUS POND BOTTOM0.05639GRASS GROUP A0.02476GRAVEL GROUP B0.03185GRAVEL GROUP B1.89787Weighted AverageTcLengthSlopeVelocityCapacityDescriptionColspan="4">Cefet	iption TERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" 0.00-30.00 hrs, dt= 0.05 hrs
Area (ac)CNDescription 0.060 98IMPERVIOUS AREASTcLengthSlopeVelocityCapacityDescr(min)(feet)(ft/ft)(ft/sec)(cfs)10.0DirectSubcatchment 35S: OVRunoff5.9 cfs @ 12.11 hrs, Volume=Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.Type III 24-hr 10-yrRainfall=4.50"Area (ac)CNDescription0.63098IMPERVIOUS AREAS0.73098IMPERVIOUS POND BOTTOM0.05639GRASS GROUP A0.02476GRAVEL GROUP B0.03185GRAVEL GROUP B1.89787Weighted AverageTcLengthSlopeVelocityCapacityDirect	iption TERLAND FLOW TO POND 3 0.49 af, Depth= 3.10" 0.0-30.00 hrs, dt= 0.05 hrs iption

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Type III 24-hr 10-yr Rainfall=4.50"

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Subcatchment 36S: OVERLAND FLOW TO R56(PCB#4)

Runoff = 1.6 cfs @ 12.17 hrs, Volume= 0.14 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

_	Area (ac)	CN	Description	
	0.140	98	IMPERVIOUS AREA	
	0.035	70	WOODS GROUP C	
	0.187	74	GRASS GROUP C	
	0.233	39	GRASS GROUP A	
_	0.246	98	Paved parking & roofs	
	0.841	75	Weighted Average	

Ic	Length	Slope	Velocity	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
11.5	100	0.1000	0.1		Sheet Flow, SHEET FLOW	-
0.2	84	0.1400	6.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW	
0.5	132	0.0760	4.4		Shallow Concentrated Flow, CONCENTRATED FLOW	
0.1	67	0.5000	11.4		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, CONCENTRATED FLOW	
0.6	80	0.0200	2.3		Shallow Concentrated Flow, CONCENTRATED FLOW	
0.1	54	0.2200	7.6		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, OVERLAND TO DRIVE	
0.4	71	0.0170	2.6		Unpaved Kv=16.1 fps Shallow Concentrated Flow, DRIVE TO PCB#4 Paved Kv=20.3 fps	
10.4	F00	T . 1			14/04 10 200 103	

13.4 588 Total

Subcatchment 37S: OVERLAND FLOW TO R50 (CB#232)

Runoff

1.8 cfs @ 12.16 hrs, Volume=

0.16 af, Depth= 2.29"

Area (ac)	CN	Description	
0.150	98	IMPERVIOUS AREA	
0.250	70	WOODS GOOD GROUP C	
0.282	74	GRASS GOOD GROUP C	
0.050	39	GRASS GOOD GROUP A	
0.090	98	Paved parking & roofs	
0.822	78	Weighted Average	

Type III 24-hr 10-yr Rainfall=4.50"

3250 POST-FEB_2006

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.1200	0.2		Sheet Flow, SHEET FLOW
					Woods: Light underbrush n= 0.400 P2= 3.10"
0.9	315	0.1200	5.6		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv=16.1 fps
0.0	34	0.5000	11.4		Shallow Concentrated Flow, OVERLAND CUT
414					Unpaved Kv=16.1 fps
0.6	80	0.0200	2.3		Shallow Concentrated Flow, OVERLAND CUT TO ROAD
					Unpaved Kv=16.1 fps
0.8	217	0.0450	4.3		Shallow Concentrated Flow, ROAD GUTTER FLOW
0.0					Paved Kv= 20.3 fps

13.0 746 Total

Subcatchment 39S: PAVEMENT FLOW TO R46

-	cc
R11	nott
110	11011

0.3 cfs @ 12.11 hrs, Volume=

0.03 af, Depth= 3.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area	(ac)	CN	Desc	ription			
0.	070	98	PAV	EMENT FI	LOW		
0.	010	74	GRA	SS GROUP	°C		
0.	080	95	Weig	ted Aver	age		
Tc	Len	gth	Slope	Velocity	Capacity	Description	
(min)	(fe	eet)	(ft/ft)	(ft/sec)	(cfs)		
10.0						Direct Entry, 10 MINUTE MINIMUM	
						A AND TO AND TO AND	

Subcatchment 40S: OVERLAND FLOW TO DP 40

Runoff = 0.0 cfs @ 21.50 hrs, Volume= 0.00 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area (ac)	CN	Description	and the second
0.200	39	GRASS GROUP A	
0.310	30	WOODS GROUP A	
0.510	34	Weighted Average	

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Type III 24-hr 10-yr Rainfall=4.50"

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diter Officials

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.2		Sheet Flow, SHEET FLOW
0.2	65	0.2000	7.2		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
0.7					Direct Entry 10 MINUTE MINIMUM
10.0	165	Total			

Subcatchment 41S: PAVEMENT FLOW TO R48

Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.03 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area	(ac) CN	J Desc	ription			
0	.090 98	B PAV	EMENT F	LOW		
0	.020 74	4 GRA	SS GROU	PC		
0.	.110 94	ł Weig	ghted Aver	rage		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0					Direct Entry, 10 MINUTE MINIMUM	
			Subca	atchment	42S: PAVEMENT FLOW TO R47	
Runoff	=	0.3 cfs (@ 12.11 h	rs, Volume	= 0.03 af, Depth= 4.16"	
Type III Area (24-hr 10-y ac) CN	-20 metl /r Rainf Desci	nod, UH=S all=4.50" ription	CS, Time S	5pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0					Direct Entry, 10 MINUTE MINIMUM	
			Subca	tchment	43S: PAVEMENT FLOW TO R49	
Runoff	ie) i	0.4 cfs @	2 12.11 hrs	s, Volume=	= 0.03 af, Depth= 4.16"	
Runoff by Type III 2	y SCS TR- 24-hr 10-y	20 meth r Rainfa	od, UH=S0 11=4.50"	CS, Time Sp	pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (a	c) CN	Descri	ption			

0.100 98 PAVEMENT FLOW

0

3250 POST-FEB_2006	Type III 24-hr 10-yr Rainfall=4.50"
Prepared by Meridian Engineering, Inc.	er Systems 3/14/2006
HydroCAD® 7.00 S/ R 000814 @ 1980-2005 Applied Microcomput	-, -, -,,
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry	10 MINUTE MINIMUM
	AFNIT EL ONA TO DE1
Subcatchment 445: PAVE	MENT FLOW TO KS1
Runoff = 0.4 cfs @ 12.11 hrs, Volume= 0.03 as	f, Depth= 4.16"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 Type III 24-hr 10-yr RainfalI=4.50") hrs, dt= 0.05 hrs
Area (ac) CN Description	
0.100 98 PAVEMENT FLOW	
To Length Slope Velocity Capacity Description	
(min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry,	10 MINUTE MINIMUM
Calk astalement (FS)	Runoff to PCB
Subcatchinent 433.	Kulloll to I CD
Subcatchment 433. Runoff = 0.5 cfs @ 12.06 hrs, Volume= 0.04 at	, Depth= 4.16"
Runoff = $0.5 \text{ cfs} @ 12.06 \text{ hrs}, \text{ Volume} = 0.04 \text{ as}$, Depth= 4.16"
Runoff = $0.5 \text{ cfs} @ 12.06 \text{ hrs}$, Volume= 0.04 at Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$, Depth= 4.16" hrs, dt= 0.05 hrs
Runoff = 0.5 cfs @ 12.06 hrs, Volume= 0.04 at Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 Type III 24-hr 10-yr Rainfall=4.50"	, Depth= 4.16" hrs, dt= 0.05 hrs
Runoff = 0.5 cfs @ 12.06 hrs, Volume= 0.04 at Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 Type III 24-hr 10-yr Rainfall=4.50" Area (ac) CN Description	, Depth= 4.16") hrs, dt= 0.05 hrs
Runoff = 0.5 cfs @ 12.06 hrs, Volume= 0.04 at Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 Type III 24-hr 10-yr Rainfall=4.50" <u>Area (ac) CN Description</u> 0.118 98 impervious	, Depth= 4.16" hrs, dt= 0.05 hrs
Runoff = 0.5 cfs @ 12.06 hrs, Volume= 0.04 at Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 Type III 24-hr 10-yr Rainfall=4.50" <u>Area (ac) CN Description</u> 0.118 98 impervious Tc Length Slope Velocity Capacity Description	, Depth= 4.16" hrs, dt= 0.05 hrs
Runoff = 0.5 cfs @ 12.06 hrs, Volume= 0.04 at Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 Type III 24-hr 10-yr Rainfall=4.50" <u>Area (ac) CN Description</u> 0.118 98 impervious Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	, Depth= 4.16" hrs, dt= 0.05 hrs
Runoff = 0.5 cfs @ 12.06 hrs, Volume= 0.04 al Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 Type III 24-hr 10-yr Rainfall=4.50" Area (ac) CN Description 0.118 98 Tc Length Slope Velocity Capacity Description (min) (feet) 6.0 Direct Entry,	6 min. minimum
Runoff = 0.5 cfs @ 12.06 hrs, Volume= 0.04 al Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 Type III 24-hr 10-yr Rainfall=4.50" Area (ac) CN Description 0.118 98 Tc Length Slope Velocity Capacity Description (min) (feet) 6.0 Direct Entry, Subcatchment 46S:	7, Depth= 4.16" 9 hrs, dt= 0.05 hrs 6 min. minimum Runoff to PCB
Subcatchment 433.Runoff = $0.5 \text{ cfs} @ 12.06 \text{ hrs, Volume}=$ 0.04 all Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ Type III 24-hr 10-yr Rainfall= $4.50^{"}$ Area (ac)CNDescription 0.118 98imperviousTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec) 6.0 Direct Entry,Subcatchment 46S:Runoff = $0.5 \text{ cfs} @ 12.06 \text{ hrs, Volume}=$ 0.04 all	 Kunoff to FCB brs, dt= 0.05 hrs 6 min. minimum Runoff to PCB 5, Depth= 4.16"
Subcatchment 433.Runoff = $0.5 cfs @ 12.06 hrs, Volume=$ $0.04 ad$ Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ Type III 24-hr 10-yr Rainfall= $4.50^{"}$ Area (ac)CNDescription 0.118 98imperviousTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec) 6.0 Direct Entry,Subcatchment 46S:Runoff = $0.5 cfs @ 12.06 hrs, Volume=$ $0.04 ad$ Runoff by SCS TR-20 method, UH=SCS. Time Span= $5.00-30.00$	 Kunoff to FCB brs, dt= 0.05 hrs 6 min. minimum Runoff to PCB bepth= 4.16" bhrs, dt= 0.05 hrs
Subcatchment 433.Runoff = $0.5 \text{ cfs} @ 12.06 \text{ hrs, Volume}=$ 0.04 all Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ Type III 24-hr 10-yr Rainfall= $4.50^{"}$ Area (ac)CNDescription 0.118 98imperviousTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft) 6.0 Direct Entry,Subcatchment 465:Runoff = $0.5 \text{ cfs} @ 12.06 \text{ hrs, Volume}=$ 0.04 all Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ Type III 24-hr 10-yrRainfall= $4.50^{"}$	 kunoff to FCB brs, dt= 0.05 hrs 6 min. minimum Runoff to PCB bepth= 4.16" bhrs, dt= 0.05 hrs
Subcatchment 433.Runoff = $0.5 cfs @ 12.06 hrs, Volume=$ $0.04 ad$ Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ Type III 24-hr 10-yr Rainfall= 4.50 "Area (ac)CNDescription 0.118 98imperviousTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec) 6.0 Direct Entry,Subcatchment 46S:Runoff = $0.5 cfs @ 12.06 hrs, Volume=$ 0.04 adRunoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ Type III 24-hr 10-yrArea (ac)CNDescription	 Kunoff to FCB brs, dt= 0.05 hrs 6 min. minimum Runoff to PCB c. Depth= 4.16" b hrs, dt= 0.05 hrs
Subcatchment 433.Runoff = $0.5 cfs @ 12.06 hrs, Volume=$ $0.04 ad$ Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ Type III 24-hr 10-yr Rainfall= $4.50^{"}$ Area (ac)CNDescription 0.118 98imperviousTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec) 6.0 Direct Entry,Subcatchment 46S:Runoff = $0.5 cfs @ 12.06 hrs, Volume=$ $0.04 ad$ Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ Type III 24-hr 10-yrRainfall= $4.50^{"}$ Area (ac)CNDescription0.12398impervious $0.04 ad$	 kunoff to FCB brs, dt= 0.05 hrs 6 min. minimum Runoff to PCB bepth= 4.16" 9 hrs, dt= 0.05 hrs
Subcatchment 455.Runoff = $0.5 \text{ cfs} @ 12.06 \text{ hrs, Volume} = 0.04 \text{ all}$ Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ Type III 24-hr 10-yr Rainfall= $4.50^{"}$ Area (ac) CN Description 0.118 98 imperviousTc Length Slope Velocity Capacity Description(min) (feet) (ft/ft) (ft/sec) (cfs) 6.0 Direct Entry,Subcatchment 465:Runoff = $0.5 \text{ cfs} @ 12.06 \text{ hrs, Volume} = 0.04 \text{ all}$ Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00$ Type III 24-hr 10-yr Rainfall= $4.50^{"}$ Area (ac) CN Description 0.123 98 imperviousTa Length Slope Velocity Capacity Description	 Kunoff to FCB brs, dt= 0.05 hrs 6 min. minimum Runoff to PCB bepth= 4.16" bhrs, dt= 0.05 hrs
Subcatchment 455.Runoff = $0.5 \text{ cfs} @ 12.06 \text{ hrs, Volume} = 0.04 atRunoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00Type III 24-hr 10-yr Rainfall=4.50"Area (ac) CN Description0.118 98 imperviousTc Length Slope Velocity Capacity Description(min) (feet) (ft/ft) (ft/sec) (cfs)6.0Direct Entry,Subcatchment 465:Runoff =0.5 cfs @ 12.06 hrs, Volume=0.04 atRunoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00Type III 24-hr 10-yr Rainfall=4.50"Area (ac) CN Description0.123 98 imperviousTc Length Slope Velocity Capacity Description(min) (feet) (ft/ft) (ft/sec) (cfs)$	 kunoff to PCB bers, dt= 0.05 hrs 6 min. minimum Runoff to PCB berth= 4.16" b hrs, dt= 0.05 hrs

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Subcatchment 47S: Runoff to PCB

Runoff = 2.3 cfs @ 12.15 hrs, Volume= 0.20 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area	(ac) (CN	Desc	ription			
0	.472	98	impe	impervious			
0	.105	70	Woo	Woods, Good, HSG C			
0	.187	74	>75%	>75% Grass cover, Good, HSG C			
0	.764	88	Weig	ted Aver	age		
Tc (min)	Lengtl (feet	1) (Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
11.5	100) (0.1000	0.1	_	Sheet Flow.	
0.4	130) (0.1400	6.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow,	
0.9	175	0	.0250	3.2		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, Paved Kv= 20.3 fps	
128	405	т	otal				

405 Total

Subcatchment 48S: Side p-lot runoff

Runoff = 1.2 cfs @ 12.06 hrs, Volume= 0.10 af, Depth= 4.08"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area	(ac)	CN	Desc	ription			
0. 0.	.016 .265	74 98	>75% Pave	6 Grass cov d parking	ver, Good, I & roofs	ISG C	
0.	281	97	Weig	ted Aver	age		
Tc (min)	Leng (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
6.0						Direct Entry,	

Subcatchment 49S: Future parking expansion

Runoff = 1.9 cfs @ 12.06 hrs, Volume= 0.15 af, Depth= 3.89"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area	(ac)	CN	Description	
0.	.046	70	Woods, Good, HSG C	
0.	.414	98	Paved parking & roofs	
0.	.460	95	Weighted Average	

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min) (feet)	(ft/ft) (ft/sec)	(cfs)		
6.0			Direct Entry,	
	Subcate	chment 5	50S: OVERLAND FLOW TO DP 50	
Runoff =	0.0 cfs @ 17.15 hr	s, Volume	= 0.00 af, Depth= 0.03"	
Runoff by SCS TR- Type III 24-hr 10-y	20 method, UH=S r Rainfall=4.50"	CS, Time S	Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (ac) CN	Description			
0.190 39 0.140 30	GRASS GROUP WOODS GROU	РА ГРА		
0.330 35	Weighted Avera	age		
Tc Length (min) (feet)	Slope Velocity (ft/ft) (ft/sec)	Capacity (cfs)	Description	
10.0			Direct Entry, 10 MINUTE MINIMUM	
≀unoff =	Subcate 0.5 cfs @ 12.12 hr	s, Volume	 1S: OVERLAND/PARKING AREA = 0.04 af, Depth= 1.90" 	
Runoff = Runoff by SCS TR- Fype III 24-hr 10-y	Subcato 0.5 cfs @ 12.12 hr 20 method, UH=S r Rainfall=4.50"	chment 5 s, Volume CS, Time S	1S: OVERLAND/PARKING AREA = 0.04 af, Depth= 1.90" Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff = Runoff by SCS TR- Type III 24-hr 10-y Area (ac) CN	Subcato 0.5 cfs @ 12.12 hr 20 method, UH=S r Rainfall=4.50" Description	s, Volume CS, Time S	1S: OVERLAND/PARKING AREA = 0.04 af, Depth= 1.90" Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff = Runoff by SCS TR- Fype III 24-hr 10-y <u>Area (ac) CN</u> 0.120 98	Subcato 0.5 cfs @ 12.12 hr 20 method, UH=S r Rainfall=4.50" Description IMPERVIOUS A WOODS GOOD	chment 5 rs, Volume CS, Time S AREA	1S: OVERLAND/PARKING AREA = 0.04 af, Depth= 1.90" Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff = Runoff by SCS TR- Type III 24-hr 10-y <u>Area (ac) CN</u> 0.120 98 0.059 70 0.081 39	Subcato 0.5 cfs @ 12.12 hr 20 method, UH=S r Rainfall=4.50" Description IMPERVIOUS A WOODS GOOD GRASS GOOD	chment 5 s, Volume CS, Time S AREA O GROUP C GROUP A	1S: OVERLAND/PARKING AREA = 0.04 af, Depth= 1.90" Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff = Runoff by SCS TR- Type III 24-hr 10-y <u>Area (ac) CN</u> 0.120 98 0.059 70 0.081 39 0.260 73	Subcato 0.5 cfs @ 12.12 hr 20 method, UH=S r Rainfall=4.50" Description IMPERVIOUS A WOODS GOOD GRASS GOOD Weighted Avera	chment 5 s, Volume CS, Time S AREA O GROUP C GROUP A age	1S: OVERLAND/PARKING AREA = 0.04 af, Depth= 1.90" Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Runoff = Runoff by SCS TR- Type III 24-hr 10-y <u>Area (ac) CN</u> 0.120 98 0.059 70 0.081 39 0.260 73 Tc Length (min) (feet)	Subcato 0.5 cfs @ 12.12 hr 20 method, UH=S r Rainfall=4.50" Description IMPERVIOUS A WOODS GOOD GRASS GOOD Weighted Avera Slope Velocity (ft/ft) (ft/sec)	chment 5 s, Volume CS, Time S AREA O GROUP C GROUP A age Capacity (cfs)	1S: OVERLAND/PARKING AREA = 0.04 af, Depth= 1.90" Span= 5.00-30.00 hrs, dt= 0.05 hrs Description	
Runoff = Runoff by SCS TR- Type III 24-hr 10-y <u>Area (ac) CN</u> 0.120 98 0.059 70 0.081 39 0.260 73 Tc Length (min) (feet) 10.0	Subcato 0.5 cfs @ 12.12 hr 20 method, UH=S r Rainfall=4.50" Description IMPERVIOUS A WOODS GOOD GRASS GOOD Weighted Avera Slope Velocity (ft/ft) (ft/sec)	chment 5 s, Volume CS, Time S AREA O GROUP C GROUP A age Capacity (cfs)	1S: OVERLAND/PARKING AREA = 0.04 af, Depth= 1.90" Span= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, MINIMUM	
Runoff = Runoff by SCS TR- Type III 24-hr 10-y <u>Area (ac) CN</u> 0.120 98 0.059 70 0.081 39 0.260 73 Tc Length (min) (feet) 10.0	Subcato 0.5 cfs @ 12.12 hr 20 method, UH=S r Rainfall=4.50" Description IMPERVIOUS A WOODS GOOD GRASS GOOD Weighted Avera Slope Velocity (ft/ft) (ft/sec)	chment 5 s, Volume CS, Time S AREA O GROUP C GROUP A age Capacity (cfs) Subcatch	1S: OVERLAND/PARKING AREA = 0.04 af, Depth= 1.90" Span= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, MINIMUM ument 59S: Runoff to Cultecs	
Runoff = Runoff by SCS TR- Type III 24-hr 10-y Area (ac) CN 0.120 98 0.059 70 0.081 39 0.260 73 Tc Length (min) (feet) 10.0 Runoff =	Subcato 0.5 cfs @ 12.12 hr 20 method, UH=S r Rainfall=4.50" Description IMPERVIOUS A WOODS GOOD GRASS GOOD Weighted Avera Slope Velocity (ft/ft) (ft/sec) 1.7 cfs @ 12.11 hr	chment 5 s, Volume CS, Time S AREA O GROUP C GROUP A age Capacity (cfs) Subcatch	1S: OVERLAND/PARKING AREA = 0.04 af, Depth= 1.90" Span= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, MINIMUM ment 59S: Runoff to Cultecs = 0.14 af, Depth= 3.10"	

Area (ac)	CN	Description	
0.297	98	Paved parking & roofs	
0.236	74	>75% Grass cover, Good, HSG C	
0.533	87	Weighted Average	

3/14/2006

Type III 24-hr 10-yr Rainfall=4.50"

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				2005 Appl	ieu microcomputer Systems	3/14/200
Tc L	ength	Slope	Velocity	Capacity	Description	2
10.0	(reet)	(ft/ft)	(ft/sec)	(cts)		
10.0					Direct Entry, 10 min. minimum	
				Subcate	chment 60S: Runoff to PCB	
Runoff	=	0.8 cfs @	12.11 hr	s, Volume	2= 0.07 af, Depth= 3.70"	
Runoff by Type III 24	SCS TR -hr 10-y	-20 meth vr Rainfa	od, UH=S all=4.50"	CS, Time S	Span= 5.00-30.00 hrs, dt= 0.05 hrs	
Area (ac)) CN	Descr	iption			
0.174	4 98	Paved	parking &	z roofs		
0.042	2 74	>75%	Grass cove	er, Good, H	ISG C	
0.216	93	vveigr	ited Avera	ge		
Tc Le (min)	ength (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0 Lunoff =	= (0.7 cfs @ 20 metho	Subcate	chment 6 , Volume=	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16"	
10.0 Runoff = Runoff by S Type III 24-1	= (CS TR-2 hr 10-yr	0.7 cfs @ 20 metho 7 Rainfal	Subcato 12.11 hrs od, UH=SC II=4.50"	chment 6 , Volume= CS, Time Sp	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 Runoff = Runoff by S Type III 24-1 Area (ac)	= (6CS TR-2 hr 10-yr <u>CN</u>	0.7 cfs @ 20 metho Rainfal Descrij	Subcate 12.11 hrs od, UH=SC II=4.50" ption	chment 6 , Volume= CS, Time Sp	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 Runoff = Runoff by S Type III 24-1 <u>Area (ac)</u> 0.190	= 0 GCS TR-2 hr 10-yr <u>CN</u> 98	0.7 cfs @ 20 metho Rainfa Descrij Paved	Subcate 12.11 hrs od, UH=SC II=4.50" ption parking &	chment 6 , Volume= CS, Time Sp roofs	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 Runoff = Runoff by S Type III 24-1 <u>Area (ac)</u> 0.190 Tc Ler	= (CS TR-2 hr 10-yr <u>CN</u> 98 ngth	0.7 cfs @ 20 metho Rainfal Descrij Paved Slope	Subcato 12.11 hrs od, UH=SC II=4.50" ption parking & Velocity	chment 6 , Volume= CS, Time Sp roofs Capacity	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description	
10.0 Runoff = Runoff by S Type III 24-1 Area (ac) 0.190 Tc Ler (min) (1	= (SCS TR-: hr 10-yr <u>CN</u> 98 ngth (feet) (0.7 cfs @ 20 metho Rainfal Descrij Paved Slope M ft/ft)	Subcate 12.11 hrs od, UH=SC II=4.50" ption parking & Velocity ((ft/sec)	chment 6 , Volume= CS, Time Sp roofs Capacity (cfs)	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description	
10.0 Runoff = Runoff by S Type III 24-1 Area (ac) 0.190 Tc Ler (min) (i 10.0	= (CS TR-2 hr 10-yr <u>CN</u> 98 ngth (feet) (0.7 cfs @ 20 metho Rainfal Descrij Paved Slope V ft/ft)	Subcato 12.11 hrs od, UH=SC II=4.50" parking & Velocity ((ft/sec)	chment 6 , Volume= CS, Time Sp roofs Capacity (cfs)	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 10 MIN. MINIMUM	
10.0 Runoff = Runoff by S Type III 24-1 Area (ac) 0.190 Tc Ler (min) (i 10.0	= (SCS TR-2 hr 10-yr <u>CN</u> 98 ngth (feet) (0.7 cfs @ 20 metho Rainfal Descrij Paved Slope ft/ft)	Subcate 12.11 hrs od, UH=SC II=4.50" parking & Velocity ((ft/sec) Subcat	chment 6 , Volume= CS, Time Sp roofs Capacity (cfs)	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 10 MIN. MINIMUM 62S: SIDE PARKING- BLDG 12	
10.0 Runoff = Runoff by S Type III 24-1 Area (ac) 0.190 Tc Ler (min) (r 10.0 unoff =	= (SCS TR-2 hr 10-yr <u>CN</u> 98 ngth 9 feet) (0.7 cfs @ 20 metho Rainfal Descrij Paved Slope V ft/ft) .9 cfs @	Subcate 12.11 hrs od, UH=SC II=4.50" parking & Velocity ((ft/sec) Subcat 12.11 hrs,	chment 6 , Volume= CS, Time Sp roofs Capacity (cfs) cchment Volume=	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 10 MIN. MINIMUM 62S: SIDE PARKING- BLDG 12 0.17 af, Depth= 4.16"	
10.0 Runoff = Runoff by S Type III 24-1 Area (ac) 0.190 Tc Ler (min) (i 10.0 unoff = unoff by SC ype III 24-h	= (CS TR-2 hr 10-yr <u>CN</u> 98 ngth (feet) (10-yr CS TR-2 ur 10-yr	0.7 cfs @ 20 metho Rainfal Descrij Paved Slope Y ft/ft) .9 cfs @ 0 metho Rainfall	Subcate 12.11 hrs od, UH=SC ll=4.50" parking & Velocity ((ft/sec) Subcat 12.11 hrs, d, UH=SC =4.50"	chment 6 , Volume= CS, Time Sp roofs Capacity (cfs) cchment Volume= S, Time Sp	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 10 MIN. MINIMUM 62S: SIDE PARKING- BLDG 12 0.17 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 Runoff = Runoff by S Type III 24-1 Area (ac) 0.190 Tc Ler (min) (i 10.0 unoff = unoff by SC ype III 24-h Area (ac)	= (CS TR-2 hr 10-yr <u>CN</u> 98 ngth (feet) (CS TR-2 10-yr CN	0.7 cfs @ 20 metho Rainfal Descrij Paved Slope ft/ft) .9 cfs @ 0 metho Rainfall Descrin	Subcate 12.11 hrs od, UH=SC ll=4.50" parking & Velocity ((ft/sec) Subcat 12.11 hrs, d, UH=SC =4.50" otion	chment 6 , Volume= CS, Time Sp roofs Capacity (cfs) chment Volume= S, Time Sp	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 10 MIN. MINIMUM 62S: SIDE PARKING- BLDG 12 0.17 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs	
10.0 Runoff = Runoff by S Type III 24-1 Area (ac) 0.190 Tc Ler (min) (i 10.0 unoff = unoff by SC ype III 24-h Area (ac) 0.500	= (CCS TR-2 hr 10-yr <u>CN</u> 98 ngth (feet) (CS TR-2 ur 10-yr <u>CN</u> 98	0.7 cfs @ 20 metho Rainfal Descrip Paved Slope V ft/ft) .9 cfs @ 0 metho Rainfall Descrip Paved p	Subcate 12.11 hrs od, UH=SC II=4.50" parking & Velocity ((ft/sec) Subcate 12.11 hrs, d, UH=SC I=4.50" otion parking & parking & parki	chment 6 , Volume= CS, Time Sp roofs Capacity (cfs) cchment Volume= S, Time Sp roofs	Direct Entry, 10 min. minimum 51S: FRONT PARKING- BLDG 12 = 0.07 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs Description Direct Entry, 10 MIN. MINIMUM 62S: SIDE PARKING- BLDG 12 0.17 af, Depth= 4.16" pan= 5.00-30.00 hrs, dt= 0.05 hrs	

Type III 24-hr 10-yr Rainfall=4.50" 3250 POST-FEB_2006 Prepared by Meridian Engineering, Inc. 3/14/2006 HydroCAD® 7.00 s/n 000814 © 1986-2003 Applied Microcomputer Systems Subcatchment 63S: ROOF- BLDG 12 0.40 af, Depth= 4.16" 4.4 cfs @ 12.11 hrs, Volume= Runoff Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50" CN Description Area (ac) Paved parking & roofs 1.150 98 Slope Velocity Capacity Description Tc Length (ft/sec) (cfs) (feet) (ft/ft) (min) Direct Entry, 10 MIN. MINIMUM 10.0 Subcatchment 64S: ROOF- BLDG 11 0.26 af, Depth= 4.16" 2.9 cfs @ 12.11 hrs, Volume= Runoff Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50" Description CN Area (ac) Paved roads w/curbs & sewers 0.760 98 Slope Velocity Capacity Description Tc Length (cfs) (min) (feet) (ft/ft) (ft/sec) Direct Entry, 10 MIN. MINIMUM 10.0 Subcatchment 65S: FRONT PARKING- BLDG 11 1.4 cfs @ 12.11 hrs, Volume= 0.12 af, Depth= 2.82" Runoff Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50" Description Area (ac) CN Paved parking & roofs 0.200 98 >75% Grass cover, Good, HSG C 0.290 74 Weighted Average 0.490 84 Slope Velocity Capacity Description Tc Length (cfs) (ft/ft) (ft/sec) (min) (feet)

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Direct Entry, 10 MIN. MINIMUM

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Subcatchment 66S: RIGHT PARKING- BLDG 11

Runoff 1.8 cfs @ 12.11 hrs, Volume= = 0.15 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"

Area (ac) CN Description
0.280 98 Paved parking & roofs
0.300 74 >75% Grass cover, Good, HSG C
0.580 86 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM
Subcatchment 67S: LOADING AREA- BLDG 11
Runoff = 0.8 cfs @ 12.11 hrs, Volume= 0.07 af, Depth= 4.16"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.200 98 Paved parking & roofs
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM
Subcatchment 68S: PARKING LOT BLDG#10
$0.26 \text{ af, Depth} = 3.10^{\circ}$
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.520 98 Paved parking & roofs
0.470 74 >75% Grass cover, Good, HSG C
0.990 87 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry 10 MINI MINIMUM

Direct Entry, 10 MIN. MINIMUM

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Subcatchment 69S: ROOF - BLDG 10

Runoff = 0.9 cfs @ 12.11 hrs, Volume= 0.08 af, Depth= 4.16"

0.	240 98	Paved	l parking a	& roofs	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 MIN. MINIMUM
				Subcatch	ment 70S: Runoff to PCB58
Runoff	-	1.6 cfs @) 12.11 hr	s, Volume	= 0.14 af, Depth= 3.10"
Runoff I Fype III	by SCS TR 24-hr 10-y	-20 meth yr Rainfa	od, UH=S all=4.50" intion	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Area	288 08	Paved	puon	& roofs	
0.	241 74	>75%	Grass cov	er, Good, H	ISG C
0.	529 87	Weigh	nted Avera	age	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0		-			Direct Entry, 10 min. minimum
				Subcatch	ment 71S: Runoff to PCB57
Runoff	-	0.9 cfs @	9 12.12 hr	s, Volume	= 0.07 af, Depth= 1.60"
Runoff Type III	by SCS TR 24-hr 10-y	-20 meth vr Rainfa	od, UH=S all=4.50"	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
	(ac) CN	Descr	intion		

Area	(ac)	CN	Desc	ription			-
0	.278	98	Pave	d parking	& roofs		
0	.278	39	>75%	Grass cov	er, Good, H	ISG A	-
0	.556	69	Weig	ted Avera	age		
Tc	Len	igth	Slope	Velocity	Capacity	Description	
(min)	(f	eet)	(ft/ft)	(ft/sec)	(cfs)		-
10.0						Direct Entry, 10 min. minimum	

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Subcatchment 72S: Runoff to PCB53

Runoff	=	1.2 cfs @	12.11 hrs.	Volume=	010 af Depth= 310"
Runon		1.2 (15 @	12.11 Mrs,	volume=	$0.10 \text{ at. Depth} = 3.10^{\circ}$

Area (ac) CN Description
0.199 98 Paved parking & roofs
0.171 74 >75% Grass cover, Good, HSG C
0.370 87 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 738: Prinoff to BCBED
Subtatemient 755, Runoir to PCB52.
Runoff = 0.9 cfs @ 12.11 hrs, Volume= 0.08 af, Depth= 3.60"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.231 98 Paved parking & roofs
0.028 39 >75% Grass cover, Good, HSG A
0.259 92 Weighted Average
Tc Length Slope Velocity Capacity Description
(min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 74S: Runoff to PCR60
Subcatchinent 745. Runoit to I CB00
f = 1.7 cfs @ 12.12 hrs, Volume = 0.14 af, Depth = 2.73''
Runoff by SCS TR-20 method LIH-SCS Time Scene 5 00 20 00 L L L 0 05 L
Type III 24-hr 10-yr Rainfall= 4.50 "
Area (ac) CN Description
0.455 98 Paved parking & roofs
0.151 39 >75% Grass cover, Good, HSG A
0.606 83 Weighted Average
Tc Length Slope Velocity Capacity Description
(min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry 10 min minimum

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Subcatchment 75S: Runoff to PCB67

0.06 af, Depth= 1.67" 0.7 cfs @ 12.12 hrs, Volume= Runoff

Area (ac) CN Description
0.225 98 Paved parking & roofs
0.203 39 >75% Grass cover, Good, HSG A
0.428 70 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 76S: Runoff to PCB65
Runoff = 0.2 cfs @ 12.12 hrs, Volume= 0.02 af, Depth= 1.97"
Rupoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.064 98 Paved parking & roofs
0.043 39 >75% Grass cover, Good, HSG A
0.107 74 Weighted Average
Tc Length Slope Velocity Capacity Description
10.0 Direct Entry, 10 min. minimum
Subcatchment 77S: Runoff to PCB79
Runoff = $0.9 \text{ cfs} @ 12.11 \text{ hrs}, \text{ Volume} = 0.07 \text{ ar}, \text{ Depth} = 3.10$
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.232 98 Paved parking & roots
0.052 39 >/5% Grass cover, Good, H5G A
0.284 87 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
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Subcatchment 78S: Runoff to PCB78

Runoff = $0.7 \text{ cfs} @ 12.11 \text{ hrs}$, Volume=	0.06 af,	Depth=	3.80"
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Area (ac) CN Description
0.173 98 Paved parking & roofs
0.014 39 >75% Grass cover, Good, HSG A
0.187 94 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 79S: Runoff to PCB62
Runoff = $0.7 \text{ cfs} @ 12.12 \text{ hrs}$, Volume= 0.06 af , Depth= $1.60^{\circ\circ}$
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.232 98 Paved parking & roofs
0.229 39 >75% Grass cover, Good, HSG A
0.461 69 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 80S: Runoff to PCB66
Runoff = 1.0 cfs @ 12.11 hrs, Volume= 0.08 af, Depth= 3.60"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.25098Paved parking & roofs0.02839>75% Grass cover, Good, HSG A
0.278 92 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum

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Type III 24-hr 10-yr Rainfall=4.50"

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Subcatchment 81S: Runoff to PCB76
Runoff = 0.8 cfs @ 12.11 hrs, Volume= 0.06 af, Depth= 3.10"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.198 98 Paved parking & roofs
0.045 39 >75% Grass cover, Good, HSG A
0.243 87 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 82R: Runoff to PCB70
Runoff = $0.6 \text{ cfs} @ 12.13 \text{ hrs}$, Volume= 0.05 at , Depth= 1.20°
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50" Area (ac) CN Description
0.212 98 Paved parking & roofs
0.311 39 >75% Grass cover, Good, HSG A
0.523 63 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 83S: Runoff to PCB72
Subtatemient 660. Ranon to 1 02.2
Runoff = 0.8 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 2.64"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.224 98 Paved parking & roofs
0.086 39 >75% Grass cover, Good, HSG A
0.310 82 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum

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Subcatchment 84S: Runoff to PCB74

Runoff = 0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 2.29"

Area (ac) CN Description
0.262 98 Paved parking & roofs
0.138 39 >75% Grass cover, Good, HSG A
0.400 78 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 85S: Runoff to PCB89
Runoff = $1.2 \text{ cfs} @ 12.11 \text{ hrs}$, Volume= 0.11 af , Depth= 4.08 "
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.303 98 Paved parking & roofs
0.014 74 >75% Grass cover, Good, HSG C
(min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 866, Dense 66 (DODOT
Subcatchinent 865: Runoff to PCB85
Runoff = 0.4 cfs @ 12.13 hrs, Volume= 0.04 af, Depth= 1.53"
Runoff by SCS TR-20 method, UH=SCS. Time Span= 5.00-30.00 hrs. dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.132 98 Paved parking & roofs
0.135 39 >75% Grass cover, Good, HSG A
0.008 74 grass good c soil
0.275 68 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum

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Type III 24-hr 10-yr Rainfall=4.50"

Subcatchment 87S: Runoff to PCB83

Runoff = 1.3 cfs @ 12.11 hrs, Volume= 0.11 af, Depth= 3.30"

Area (ac) CN Description	
0.334 98 Paved parking & roofs	
0.059 39 >75% Grass cover, Good, HSG A	
0.393 89 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minimum	
Subcatchment 88S: Runoff to PCB85	
Runoff = 1.2 cfs @ 12.11 hrs, Volume= 0.11 af, Depth= 3.90"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"	
Area (ac) CN Description	
0.289 98 Paved parking & roofs	
0.325 95 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minimum	
Subcatchment 89S: Runoff to PCB86	
Runoff = 0.8 cfs @ 12.11 hrs, Volume= 0.08 af, Depth= 4.16"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 10-yr Rainfall=4.50"	
Area (ac) CN Description	
0.221 98 Paved parking & roofs	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry,	

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Subcatchment 90S: Runoff to PCB81

Runoff = $2.1 \text{ cfs} @ 12.11 \text{ hrs}$, Volume= 0.1	8 af. Denth= 3 90"
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Area (ac) CN Description
0.493 98 Paved parking & roofs
0.068 74 >75% Grass cover, Good, HSG C
0.561 95 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 91S: Runoff to PCB95
Runoff = 0.3 cfs @ 12.11 hrs, Volume= 0.03 af, Depth= 3.90"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.080 98 Paved parking & roofs
0.012 /4 >/5% Grass cover, Good, HSG C
0.092 95 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 92S: Runoff to PCB96
Runoff = $0.6 \text{ cfs} @ 12.11 \text{ hrs}$, Volume= 0.05 af , Depth= 3.40°
Runoff by SCS TR-20 method LIH=SCS Time Span= 5.00.20.00 bro dt= 0.05 bro
Fype III 24-hr 10-yr Rainfall=4.50"
Area (ac) CN Description
0.114 98 Paved parking & roofs
0.062 74 >75% Grass cover, Good, HSG C
0.176 90 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum

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Subcatchment 93S: Runoff to PCB98

Runoff = 0.6 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= $1.67^{\circ\circ}$

Area (a	c) CN	Descri	ption		
0.18	80 98 62 39	imper >75% (vious Grass cov	er, Good, H	ISG A
0.34	42 70	Weigh	ted Avera	age	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,
Runoff Runoff by Fype III 2	= y SCS TR 24-hr 10- <u>y</u>	0.4 cfs @ -20 metho yr Rainfa Descri	12.11 hr od, UH=S 11=4.50"	rs, Volume iCS, Time S	= 0.04 af, Depth= 4.16" ipan= 5.00-30.00 hrs, dt= 0.05 hrs
0.10	02 98	imper	vious area	1	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, minimum

Type III 24-hr 10-yr Rainfall=4.50"

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Reach 10R: DP 10

 Inflow Area =
 46.946 ac, Inflow Depth = 0.35" for 10-yr event

 Inflow =
 7.8 cfs @ 12.27 hrs, Volume=
 1.35 af

 Outflow =
 7.8 cfs @ 12.27 hrs, Volume=
 1.35 af

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 3.3 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.43' @ 12.27 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 20R: Design Point #20

Inflow A	rea =	4.470 ac	, Inflow De	epth = 1.75"	for 10-vr event
Inflow	=	6.5 cfs @	12.21 hrs,	Volume=	0.65 af
Outflow	=	6.5 cfs @	12.21 hrs,	Volume=	0.65 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.3 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.7 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.42' @ 12.22 hrs Capacity at bank full= 1,287.1 cfs 99.0" Diameter Pipe n= 0.010 Length= 1.0' Slope= 0.0100 '/'

Reach 30R: Design Point #30

Inflow A	rea =	6.360 ac, Inf.	low Depth = 1.53 "	for 10-vr event
Inflow	=	7.4 cfs @ 12.2	6 hrs, Volume=	0.81 af
Outflow	=	7.4 cfs @ 12.2	6 hrs, Volume=	0.81 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.3 fps, Min. Travel Time= 0.0 min Avg. Velocity = 3.2 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.42' @ 12.26 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 40R: Design Point #40

Inflow A	rea =	0.510 ac,	Inflow Depth = $0.02"$	for 10-vr event	
Inflow	=	0.0 cfs @ 2	21.50 hrs, Volume=	0.00 af	
Outflow	=	0.0 cfs @ 2	21.50 hrs, Volume=	0.00 af, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 2.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.0 min

3

Type III 24-hr 10-yr Rainfall=4.50"

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Peak Depth= 0.00' @ 21.50 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 99R: Design Point #50

Inflow An	rea =	0.330 ac	, Inflow Depth = 0.03 "	for 10-yr event	
Inflow	=	0.0 cfs @	17.15 hrs, Volume=	0.00 af	
Outflow	=	0.0 cfs @	17.15 hrs, Volume=	0.00 af, Atten= 0%,	Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 2.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.00' @ 17.15 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

PROPOSED CONDITIONS 100-YEAR 24-HOUR STORM EVENT ANALYSIS

ħ

0.8

0.2

12.5

238

80

418

0.1000

0.1750

Total

Subcatchment 10S: OVERLAND FLOW TO DP 10

Runoff = 20.9 cfs @ 12.18 hrs, Volume= 2.26 af, Depth= 1.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area (ac	:) CN	N Dese	cription			
8.87	2 3	0 WO	ODS GROU	JP A		X
1.10	0 5	5 WO	ODS GROU	JP B		
5.51	2 70	0 WO	ODS GROU	JPC		
0.27	0 7	6 GRA	VEL PATH	H GROUP A	A	
0.82	0 98	8 RTE	1 & WETL	ANDS .74		
0.05	0 89	9 PAT	HC			
0.30	0 86	5 STRI	PPED ARE	EAS GROUI	PC	
0.75	8 74	4 GRA	SS GROUI	PC		
1.52	3 39	GRA	SS GROUI	PA		
0.17	6 98	3 Park	ing at base	of hill		
19.38	1 50) Weig	ghted Aver	age		
Tc L (min)	ength (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
11.5	100	0.1000	0.1		Sheet Flow, SHEET FLOW	

Unpaved Kv=16.1 fps

Unpaved Kv=16.1 fps

Woods: Light underbrush n= 0.400 P2= 3.10"

Shallow Concentrated Flow, CONCENTRATED FLOW

Shallow Concentrated Flow, OVERLAND TO WET

			Subcatchment 11S	: OVERLAND FLOW TO R29
Runoff	=	1.6 cfs @	12.11 hrs, Volume=	0.13 af, Depth= 5.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

5.1

6.7

Area	(ac)	CN	Desc	Description						
0.	170	98	IMPI	ERVIOUS	AREAS					
0.	150	74	GRA	SS GROUI	PC					
0.	320	87	Weig	ted Aver	age					
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description				
10.0						Direct Entry, 10 MINUTE MINIMUM				

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Subcatchment 12S: OVERLAND FLOW TO R28

Runoff 5.9 cfs @ 12.14 hrs, Volume= 0.55 af, Depth= 5.21"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area	(ac) C	N I	Descr	ription		
0	.800	98 I	MPE	RVIOUS	AREAS	
0	.060	70 V	NOO	DS GROU	ЛРС	
0	.400 7	74 (GRAS	S GROUI	PC 2	
1	1.260 89		Veigl	nted Aver	age	
Tc (min)	Length (feet)	Slo (ft/	ope /ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.17	700	0.2	1.150	Sheet Flow, SHEET FLOW
0.1	42	0.24	100	7.9		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
2.2	294	0.02	200	2.3		Shallow Concentrated Flow CONCENTRATED FLOW
0.9	230	0.04	:00	4.1		Unpaved Kv= 16.1 fps Shallow Concentrated Flow, GUTTER FLOW Paved Kv= 20.3 fps
12.5	666	Tota	al			

666 Total

Subcatchment 13S: OVERLAND FLOW TO R24

Runoff

1.5 cfs @ 12.11 hrs, Volume=

0.13 af, Depth= 4.67"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area	(ac)	CN	Desc	ription			
0	.140	98	IMP	ERVIOUS	AREAS		
0	.190	74	GRA	SS GROUI	°C		
0.	.330	84	Weig	ghted Aver	age		
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0						Direct Entry, 10 MINUTE MINIMUM	

Subcatchment 14S: OVERLAND FLOW TO R25

Runoff 1.2 cfs @ 12.11 hrs, Volume= 0.10 af, Depth= 5.21"

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Type III 24-hr 100-yr Rainfall=6.50"

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Area (ac) CN Description
0.150 98 IMPERVIOUS AREAS
0.090 74 GRASS GROUP C
0.240 89 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MINUTE MINIMUM
Subcatchment 16S: OVERLAND FLOW TO R22
Runoff = 0.9 cfs @ 12.11 hrs, Volume= 0.08 af, Depth= 5.73"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.140 98 IMPERVIOUS AREAS
0.170 94 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MINUTE MINIMUM
Subcatchment 17S: OVERLAND FLOW TO R21
Runoff = 2.1 cfs @ 12.11 hrs, Volume= 0.17 af, Depth= 4.45"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.150 98 IMPERVIOUS AREAS
0.470 82 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MINUTE MINIMUM
Subcatchment 18S: OVERLAND FLOW TO R16
Runoff = 0.8 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 2.91"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

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Area ((ac) CN	J Desci	ription		
0.1	130 98	B IMPE	ERVIOUS	AREAS	
0.1	140 39	9 GRA	SS GROUI	P A	
0.2	270 67	7 Weig	hted Aver	age	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 MINUTE MINIMUM
			Subca	tchment	19S: OVERLAND FLOW TO R17
unoff	÷	0.9 cfs @	9 12.13 hr	s, Volume	= 0.07 af, Depth= 2.17"
unoff by ype III 2 Area (a	y SCS TR 24-hr 100 ac) CN	-20 meth -yr Rain Descr	od, UH=S fall=6.50" iption	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
0.14	40 98	IMPE	RVIOUS A	REAS	
0.2	73 39	GRAS	S GROUP	A	
0.43	13 59	Weigh	nted Avera	ige	
Tc 1 (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 min. minimum
			Subcate	hment 20	0S: OVERLAND FLOW TO DP 20
unoff	= 1	2.6 cfs @	12.21 hrs	, Volume=	= 1.23 af, Depth= 3.31"
unoff by ype III 24	SCS TR- 4-hr 100-	-20 metho yr Rainfa	od, UH=S0 all=6.50"	CS, Time Sp	pan= 5.00-30.00 hrs, dt= 0.05 hrs

Area	(ac) Cl	N Desc	ription		
0.	040 9	8 WET	LANDS		
0.	100 7	6 GRA	VEL PATH	I GROUP C	
0.	400 7	4 GRA	SS GROUI	°C	
3.	930 7	0 WO0	ODS GROU	ЛРC	
4.	470 7	1 Weig	ghted Aver	age	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0500	0.1		Sheet Flow, SHEET FLOW
1.3	495	0.1600	6.4		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps
16.4	595	Total			

12

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Subcatchment 21S: OVERLAND FLOW TO R14

Runoff = 0.9 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 3.82"

Area (ac) CN Description
0.140 98 IMPERVIOUS AREAS
0.084 39 GRASS GROUP A
0.224 76 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 22S: OVERLAND FLOW TO R13
Runoff = 0.8 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 3.21"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.130 98 IMPERVIOUS AREAS
0.120 39 GRASS GROUP A
0.250 70 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MINUTE MINIMUM
Subcatchment 23S: OVERLAND FLOW TO R11
Runoff = 0.8 cfs @ 12.14 hrs, Volume= 0.08 af, Depth= 1.48"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.140 98 IMPERVIOUS AREAS
0.523 39 >75% Grass cover, Good, HSG A
0.663 51 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MINUTE MINIMUM

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Subcatchment 24S: OVERLAND FLOW TO R34

Runoff = 0.6 cfs @ 12.12 hrs, Volume= 0.05 af, Depth= 3.82"

Area (ac)	CN	Desc	ription		
0.100	98	IMPE	RVIOUS	AREAS	
0.060	39	GRA	SS GROUI	PA	
0.160	76	Weig	hted Aver	age	
Tc Ler _(min) (i	ngth feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, 10 MINUTE MINIMUM
			Subc	atchmen	t 25S: OVERLAND FLOW TO R6
Runoff =		2.4 cfs @	9 12.12 hr	s, Volume	= 0.20 af, Depth= 3.01"
Runoff by Sc	TD	20 most	od ITU-C	CC Time C	
Type III 24-h	r 100-y	r Rain	600, 011=5 fall=6 50"	CS, Time S	ppan= 5.00-30.00 hrs, dt= 0.05 hrs
-)		. munt	un 0.50		
Area (ac)	CN	Descr	iption		
0.140	98	imper	vious area		
0.426	74	grass	good c soi	n	
0.238	39	grass	good a soi		
0.804	68	Weigh	ted Avera	ge	
		0		0	
Tc Len	gth :	Slope	Velocity	Capacity	Description
(min) (fe	eet) (ft/ft)	(ft/sec)	(cfs)	
10.0					Direct Entry, 10 MINUTE MINIMUM
			Subca	tchment	26S: OVERLAND FLOW TO R5
Runoff =	1	.0 cfs @	12.11 hrs	, Volume	= 0.08 af, Depth= 5.21"
Runoff by SC	S TR-2	0 metho	od, UH=SC	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Гуре III 24-hı	r 100-y	r Rainfa	all=6.50"		
Area (ac)	CN	Descri	ption		
0.120	98	IMPER	VIOUS A	REAS	
0.070	74	GRAS	GROUP	С	
0.190	89	Weigh	ted Averag	ge	
Tc Lene	oth G	lone	Velocity	Canacity	Description
(min) (fe	et) (t/ft)	(ft/sec)	(cfs)	Description
10.0	<u> </u>	-/ 10/	(1) Sec)	(015)	Direct Enter 10 MANUTER A CONTRACT
10.0					Direct Entry, 10 MINUTE MINIMUM

Subcatchment 28S: OVERLAND FLOW TO R1

Runoff = 1.0 cfs @ 12.11 hrs, Volume= 0.08 af, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

0	(ac) CI	V Desc	ription			
U	.125 9	8 IMP	ERVIOUS	AREAS		
0	.050 3	9 GRA	SS GROUI	ΡA		
0.	.060 7	4 GRA	SS GROUI	PC		
0.	.235 7	9 Weig	ted Aver	age		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0		1			Direct Entry, 10 MINUTE MINIMUM	
			Sul	ocatchme	ent 29S: OVERLAND FLOW R2	
unoff	=	0.9 cfs @	@ 12.11 hi	rs, Volume	= 0.08 af, Depth= 4.45"	
inoff l pe III	oy SCS TI 24-hr 100	R-20 metl)-yr Rain	nod, UH=9 Ifall=6.50"	CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs	
Area ((ac) CN	Desci	ription			
Area (0.1	(ac) CN 131 98	I Descr IMPE	ription RVIOUS A	AREAS		
Area (0.1 0.0	(ac) CN 131 98 040 39	I Descr I IMPE GRAS	ription RVIOUS A	AREAS A		
Area (0.1 0.0 0.0	(ac) CN 131 98 040 39 040 74	I Descr IMPE GRAS	ription RVIOUS A SS GROUP SS GROUP	AREAS A C		
Area (0.1 0.0 0.0	(ac) CN 131 98 040 39 040 74 211 82	I Descr I IMPE GRAS GRAS Weig	ription RVIOUS A SS GROUF SS GROUF hted Avera	AREAS A C age		
Area (0.1 0.0 0.0 0.1 0.2 Tc	(ac) CN 131 98 040 39 040 74 211 82 Length	Description IMPE GRAS GRAS Weig Slope	ription RVIOUS A SS GROUF SS GROUF hted Avera Velocity	AREAS A C age Capacity	Description	
Area (0.: 0.0 0.0 0.2 Tc min)	(ac) CN 131 98 040 39 040 74 211 82 Length (feet)	Describer I Describer GRAS GRAS Weig Slope (ft/ft)	ription RVIOUS A SS GROUF SS GROUF hted Avera Velocity (ft/sec)	AREAS PA C age Capacity (cfs)	Description	
Area (0. 0.0 0.0 0.2 Tc min) 10.0	(ac) CN 131 98 040 39 040 74 211 82 Length (feet)	I Descri B IMPE O GRAS GRAS C Weig Slope (ft/ft)	ription RVIOUS A SS GROUF SS GROUF hted Avera Velocity (ft/sec)	AREAS PA C age Capacity (cfs)	Description Direct Entry, 10 MINUTE MINIMUM	
Area (0. 0.0 0.2 0.2 Tc min) 10.0	(ac) CN 131 98 040 39 040 74 211 82 Length (feet)	I Descri B IMPE D GRAS GRAS C Weig Slope (ft/ft)	ription RVIOUS A SS GROUF SS GROUF hted Avera Velocity (ft/sec) Subcate	AREAS PA C age Capacity (cfs)	Description Direct Entry, 10 MINUTE MINIMUM 0S: OVERLAND FLOW TO DP 30	
Area (0.: 0.0 0.2 Tc min) 10.0	(ac) CN 131 98 040 39 040 74 211 82 Length (feet)	I Descri B IMPE D GRAS C GRAS C Weig Slope (ft/ft)	Fiption RVIOUS A SS GROUF SS GROUF hted Avera Velocity (ft/sec) Subcate 12.25 hr	AREAS PA C age Capacity (cfs) chment 3	Description Direct Entry, 10 MINUTE MINIMUM 0S: OVERLAND FLOW TO DP 30 = 1.60 af, Depth= 3.01"	

Type III 24-hr 100-yr Rainfall=6.50"

Area (ac)	CN	Description	
0.410	98	WETLANDS	
0.090	89	GRAVEL PATH GROUP C	
0.030	76	GRAVEL PATH GROUP A	
1.000	74	GRASS GROUP C	
2.100	70	WOODS GROUP C	
1.580	30	WOODS GROUP A	
1.150	98	roof area	
- 6.360	68	Weighted Average	

1

Type III 24-hr 100-yr Rainfall=6.50"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	100	0.0400	0.1		Sheet Flow, SHEET FLOW
0.4	113	0.0970	5.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
0.5	252	0.2300	7.7		Shallow Concentrated Flow CONCENTRATED FLOW
0.8	202	0.0690	4.2		Unpaved Kv=16.1 fps Shallow Concentrated Flow, CONCENTRATED FLOW
1.0	627	0.0480	10.2	336.08	Channel Flow, CHANNEL THRU WETLANDS Area= 33.0 sf Perim= 36.3' r= 0.91' n= 0.030
100	1 001	-	*		

19.2 1,294 Total

Subcatchment 31S: OVERLAND FLOW TO R31

Runoff = $1.2 \text{ cfs} @ 12.14 \text{ b}$	nrs, Volume=
--	--------------

0.11 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area (ad	:) CN	J Desc	ription					
0.033 98 IMPERV AREAS on lot								
0.62	6 39	>75%	6 Grass cov	ver, Good, I	HSG A			
0.15	6 98	B Pave	d area in R	te. 1				
0.81	15 53 Weighted Avera		age					
Tc L (min)	ength (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			

10.0

Direct Entry, 10 min. minimum

Subcatchment 32S: OVERLAND FLOW TO R36

Runoff = 0.8 cfs @ 12.12 hrs, Volume= 0.07 af, Depth= 3.61"

Area	(ac)	CN	Desc	ription			
0.	.090	98	IMP	ERVIOUS	AREAS		
0.	.070	74	GRA	SS GROUI	C		
0.	.060	39	GRA	SS GROUI	PA		
0.	.220	74	Weig	ghted Aver	age		
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0						Direct Entry, 10 MINUTE MINIMUM	

3230 I 03 I-FED_2000	Type III 24-hr 100-yr Rainfall=6.50
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Subcatchment 33S: OVERLAND FLC	W TO R9
Subcutchinent 665. O VEREIN (D VEC	
Runoff = $0.2 \text{ cfs} @ 12.11 \text{ hrs}$, Volume= 0.02 af , Depth= 6.07	קיי
Runoff by SCS TR-20 method. UH=SCS. Time Span= 5.00-30.00 hrs. dt= 0.05	hrs
Type III 24-hr 100-yr Rainfall=6.50"	
	1
Area (ac) CN Description	
0.030 98 impervious area	
To Longth Slope Valacity Conscity Description	
(min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 MINUTE	MINIMUM
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 F Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.060 98 IMPERVIOUS AREAS Tc Length Slope Velocity Capacity Description	nrs
10.0 Direct Entry, 10 MINUTE	MINIMUM
Subcatchment 35S: OVERLAND FLOW	TO POND 3
Runoff = 9.3 cfs @ 12.11 hrs, Volume= 0.79 af, Depth= 5.00	iu.
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 h	nrs
Type III 24-hr 100-yr Rainfall=6.50"	
Area (ac) CN Description	
0.630 98 IMPERVIOUS AKEAS	
0.730 98 IMPERVIOUS FOND BOTTOM	
0.000 39 GKAOO GKUUFA	
0.024 76 (RAVELGROUPA	

0.02170ORATED CROUP B0.03185GRAVEL GROUP B1.89787Weighted Average

Q.

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
10.0					Direct Entry, MINIMUM - TO POND 3	

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Subcatchment 36S: OVERLAND FLOW TO R56(PCB#4)

Runoff = 2.9 cfs @ 12.16 hrs, Volume= 0.26 af, Depth= 3.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area (ac)	CN	Description	
0.140	98	IMPERVIOUS AREA	
0.035	70	WOODS GROUP C	
0.187	74	GRASS GROUP C	
0.233	39	GRASS GROUP A	
0.246	98	Paved parking & roofs	
0.841	75	Weighted Average	

Ic	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
11.5	100	0.1000	0.1		Sheet Flow, SHEET FLOW
0.2	84	0.1400	6.0		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Ky= 16.1 fps
0.5	132	0.0760	4.4		Shallow Concentrated Flow, CONCENTRATED FLOW
0.1	67	0.5000	İ1.4	÷	Unpaved Kv= 16.1 fps Shallow Concentrated Flow, CONCENTRATED FLOW Unpaved Kv= 16.1 fps
0.6	80	0.0200	2.3		Shallow Concentrated Flow, CONCENTRATED FLOW
0.1	54	0.2200	7.6		Unpaved Kv=16.1 fps Shallow Concentrated Flow, OVERLAND TO DRIVE Unpaved Kv=16.1 fps
0.4	71	0.0170	2.6		Shallow Concentrated Flow, DRIVE TO PCB#4 Paved Kv= 20.3 fps
10 4	=00	m			

13.4 588 Total

Subcatchment 37S: OVERLAND FLOW TO R50 (CB#232)

Runoff

3.1 cfs @ 12.16 hrs, Volume=

0.28 af, Depth= 4.02"

Area (ac)	CN	Description	
0.150	98	IMPERVIOUS AREA	
0.250	70	WOODS GOOD GROUP C	
0.282	74	GRASS GOOD GROUP C	
0.050	39	GRASS GOOD GROUP A	
0.090	98	Paved parking & roofs	
0.822	78	Weighted Average	

Type III 24-hr 100-yr Rainfall=6.50"

3/14/2006

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.1200	0.2		Sheet Flow, SHEET FLOW
					Woods: Light underbrush n= 0.400 P2= 3.10"
0.9	315	0.1200	5.6		Shallow Concentrated Flow, CONCENTRATED FLOW
					Unpaved Kv= 16.1 fps
0.0	34	0.5000	11.4		Shallow Concentrated Flow, OVERLAND CUT
					Unpaved Kv= 16.1 fps
0.6	80	0.0200	2.3		Shallow Concentrated Flow, OVERLAND CUT TO ROAD
					Unpaved Kv=16.1 fps
0.8	217	0.0450	4.3		Shallow Concentrated Flow, ROAD GUTTER FLOW
					Paved Kv= 20.3 fps

746 Total

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Subcatchment 39S: PAVEMENT FLOW TO R46

Runoff

13.0

0.4 cfs @ 12.11 hrs, Volume=

0.04 af, Depth= 5.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area	(ac)	CN	Desc	ription		
0.	.070	98	PAV	EMENT FI	LOW	
0.	.010	74	GRA	SS GROUI	PC 29	
0.	.080	95	Weig	ghted Aver	age	
Tc (min)	Len (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0						Direct Entry, 10 MINUTE MINIMUM
					Sec. 22	

Subcatchment 40S: OVERLAND FLOW TO DP 40

Runoff = 0.0 cfs @ 12.47 hrs, Volume= 0.01 af, Depth= 0.31"

Area (ac)	CN	Description	
0.200	39	GRASS GROUP A	
0.310	30	WOODS GROUP A	
0.510	34	Weighted Average	

Type III 24-hr 100-yr Rainfall=6.50"

3/14/2006

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.2		Sheet Flow, SHEET FLOW
0.2	65	0.2000	7.2		Woods: Light underbrush n= 0.400 P2= 3.10" Shallow Concentrated Flow, CONCENTRATED FLOW
0.7					Direct Entry, 10 MINUTE MINIMUM
10.0	165	Total			

Subcatchment 41S: PAVEMENT FLOW TO R48

Runoff = 0.6 cfs @ 12:11 hrs, Volume= 0.05 af, Depth= 5.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area	(ac)	CN	Desc	ription		
0	.090	98	PAV	EMENT F	LOW	
0	.020	74	GRA	SS GROU	PC	
0.	.110	94	Weig	ghted Aver	age	
Tc (min)	Leng (fee	th et)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0						Direct Entry, 10 MINUTE MINIMUM
				Subc	atchment	42S: PAVEMENT FLOW TO R47
Runoff	=		0.4 cfs (@ 12.11 h	rs, Volume	= 0.04 af, Depth= 6.07"
Type III <u>Area (</u> 0.0	24-hr 1 (ac) (080	00-y CN 98	/r Rain Desci PAVI	ifall=6.50" iption EMENT FI	.OW	par = 5.00-50.00 hrs, dt = 0.05 hrs
Tc (min)	Lengt (feet	h :) (Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0						Direct Entry, 10 MINUTE MINIMUM
				Subca	tchment	43S: PAVEMENT FLOW TO R49
Runoff	=	C).6 cfs @	9 12.11 hr	s, Volume=	= 0.05 af, Depth= 6.07"
Runoff b Fype III :	y SCS ' 24-hr 1	TR-2 00-y	20 meth r Rain	od, UH=S fall=6.50"	CS, Time Sj	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Area (a	ac) C	CN	Descr	iption		

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0.100 98 PAVEMENT FLOW

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Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 MIN	UTE MINIMUM
Subsatabaant 445. DAVENTENT	TOW TO BEI
Subtateliment 445. 1 A v ElviEl 1 1	2000 10 851
Runoff = 0.6 cfs @ 12.11 hrs, Volume= 0.05 af, Depth=	= 6.07"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= Type III 24-hr 100-yr Rainfall=6.50"	0.05 hrs
Area (ac) CN Description	
0.100 98 PAVEMENT FLOW	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 MINI	UTE MINIMUM
Subatabant 158 Dunoff	to DCB
Subcatchinent 455. Ruhon	ютсв
Runoff = 0.7 cfs @ 12.06 hrs, Volume= 0.06 af, Depth=	6.07"
	0.07
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0 Type III 24-hr 100-yr Rainfall=6.50"	0.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0 Type III 24-hr 100-yr Rainfall=6.50"	0.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0 Type III 24-hr 100-yr Rainfall=6.50" <u>Area (ac) CN Description</u>	0.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= (Type III 24-hr 100-yr Rainfall=6.50" <u>Area (ac) CN Description</u> 0.118 98 impervious	0.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= (Type III 24-hr 100-yr Rainfall=6.50" <u>Area (ac) CN Description</u> 0.118 98 impervious Tc Length Slope Velocity Capacity Description	0.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= (Type III 24-hr 100-yr Rainfall=6.50" <u>Area (ac) CN Description</u> 0.118 98 impervious Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 6.0 Direct Entry, 6 min. m	0.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= (Type III 24-hr 100-yr Rainfall=6.50" <u>Area (ac) CN Description</u> 0.118 98 impervious Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 6.0 Direct Entry, 6 min. m	0.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= (Type III 24-hr 100-yr Rainfall=6.50" <u>Area (ac) CN Description</u> 0.118 98 impervious Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 6.0 Direct Entry, 6 min. m Subcatchment 46S: Runoff t	0.05 hrs inimum to PCB
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= (Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.118 98 impervious Tc Length Slope Velocity Capacity Description (min) (feet) 0.06 af, Depth= Runoff = 0.8 cfs @ 12.06 hrs, Volume= 0.06 af, Depth=	0.05 hrs inimum co PCB 6.07"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= (Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.118 98 impervious Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) 6.0 Direct Entry, 6 min. m Subcatchment 46S: Runoff t Runoff = 0.8 cfs @ 12.06 hrs, Volume= 0.06 af, Depth= Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0 0 Type III 24-hr 100-yr Rainfall=6.50" 12.06 hrs, Volume= 10.06 af, Depth=	0.05 hrs inimum to PCB 6.07" 9.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= (Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.118 98 impervious Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 6.0 Direct Entry, 6 min. m Subcatchment 46S: Runoff t Runoff = 0.8 cfs @ 12.06 hrs, Volume= 0.06 af, Depth= Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0 Cype III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description	0.05 hrs inimum to PCB 6.07" 9.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0 Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.118 98 impervious Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) 6.0 Direct Entry, 6 min. m Subcatchment 46S: Runoff t Runoff = 0.8 cfs @ 12.06 hrs, Volume= 0.06 af, Depth= Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0 Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.123 98 impervious	0.05 hrs inimum co PCB 6.07" 9.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= (Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.118 98 impervious Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 6.0 Direct Entry, 6 min. m Subcatchment 46S: Runoff t Runoff = 0.8 cfs @ 12.06 hrs, Volume= 0.06 af, Depth= Runoff = 0.8 cfs @ 12.06 hrs, Volume= 0.06 af, Depth= Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0 Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.123 98 impervious Tc Length Slope Velocity Capacity Description	0.05 hrs inimum to PCB 6.07" 0.05 hrs
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= (Type III 24-hr 100-yr Rainfall=6.50"Area (ac)CNDescription0.11898imperviousTcLengthSlopeVelocityCapacityDescription(fright)(min)(feet)(ft/ft)(ft/sec)6.0CapacityDescription6.0Direct Entry, 6 min. mSubcatchment 46S: Runoff tRunoff =0.8 cfs @12.06 hrs, Volume=0.06 af, Depth=Cunoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0Ype III 24-hr 100-yrRainfall=6.50"Area (ac)CNDescription0.12398imperviousTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/ft)(ft/sec)(cfs)	0.05 hrs inimum to PCB 6.07" 9.05 hrs

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Subcatchment 47S: Runoff to PCB

Runoff = 3.5 cfs @ 12.15 hrs, Volume= 0.32 af, Depth= 5.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area	(ac) (CN	Desc	ription			
0	.472	98	impe	rvious			
0	.105	70	Woo	ds, Good, I	HSG C		
0	.187	74	>75%	Grass cov	ver, Good, I	HSG C	
0	.764	88	Weig	ted Aver	age	1	
Tc (min)	Lengtl (feet	n)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
11.5	100) (0.1000	0.1		Sheet Flow,	
0.4	130) (0.1400	6.0		Woods: Light underbrush $n=0.400$ P2= 3.10" Shallow Concentrated Flow,	
0.9	175	5 (0.0250	3.2		Shallow Concentrated Flow, Paved Kv= 20.3 fps	
100							

12.8 405 Total

Subcatchment 48S: Side p-lot runoff

Runoff = 1.8 cfs @ 12.06 hrs, Volume= 0.14 af, Depth= 6.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area	(ac)	CN	Desc	ription			
0.	016	74	>75%	6 Grass cov	ver, Good, H	ISG C	
0.	265	98	Pave	d parking	& roofs		
0.	281	97	Weig	ghted Aver	age		
Tc (min)	Leng (fe	gth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	

6.0

Direct Entry,

Subcatchment 49S: Future parking expansion

Runoff = 2.8 cfs @ 12.06 hrs, Volume= 0.22 af, Depth= 5.83"

Area (ac)	CN	Description	
0.046	70	Woods, Good, HSG C	
0.414	98	Paved parking & roofs	
0.460	95	Weighted Average	

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Type III 24-hr 100-yr Rainfall=6.50"

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(min) (feet)	(ft/ft) (ft/sec) (cfs)
6.0	Direct Entry,
	Subcatchment 50S: OVERLAND FLOW TO DP 50
Runoff =	0.0 cfs @ 12.44 hrs, Volume= 0.01 af, Depth= 0.36"
Runoff by SCS T Ype III 24-hr 10	"R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs)0-yr Rainfall=6.50"
Area (ac) Cl	N Description
0.190 3 0.140 3	99 GRASS GROUP A 30 WOODS GROUP A
0.330 3	35 Weighted Average
Tc Length (min) (feet)	Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs)
10.0	Direct Entry, 10 MINUTE MINIMUM
Runoff =	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Runoff = Runoff by SCS T. Type III 24-hr 10 Area (ac) CN	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" N Description
unoff = unoff by SCS T. ype III 24-hr 10 <u>Area (ac) CN</u> 0.120 9	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" N Description 8 IMPERVIOUS AREA
unoff = unoff by SCS T. ype III 24-hr 10 <u>Area (ac) CN</u> 0.120 9 0.059 7 0.021 20	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" N Description 8 IMPERVIOUS AREA 0 WOODS GOOD GROUP C 9 CRASS COOD CROUP A
unoff = unoff by SCS T. ype III 24-hr 10 <u>Area (ac) Ch</u> 0.120 90 0.059 70 0.081 30 0.260 73	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" N Description 8 IMPERVIOUS AREA 0 WOODS GOOD GROUP C 9 GRASS GOOD GROUP A 3 Weighted Average
unoff = unoff by SCS T. $ype III 24-hr 10$ $Area (ac) CP$ $0.120 90$ $0.059 70$ $0.081 30$ $0.260 73$ $Tc Length$ $(min) (feet)$	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" <u>N Description</u> 8 IMPERVIOUS AREA 0 WOODS GOOD GROUP C 9 GRASS GOOD GROUP A 3 Weighted Average Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs)
unoff = unoff by SCS T. ype III 24-hr 10 <u>Area (ac) Ct</u> 0.120 9 0.059 7 0.081 <u>3</u> 0.260 7: Tc Length (min) (feet) 10.0	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" <u>N Description</u> 8 IMPERVIOUS AREA 0 WOODS GOOD GROUP C 9 GRASS GOOD GROUP A 3 Weighted Average Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs) Direct Entry, MINIMUM
$\begin{array}{rcl} \text{Runoff} & = \\ \text{Runoff by SCS T.} \\ \text{Type III 24-hr 10} \\ \hline \\ \text{Area (ac) Ch} \\ 0.120 & 9 \\ 0.059 & 7 \\ 0.081 & 3' \\ \hline \\ 0.260 & 7 \\ \hline \\ 0.260 & 7 \\ \hline \\ Charge the set of th$	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" <u>N Description</u> 8 IMPERVIOUS AREA 0 WOODS GOOD GROUP C 9 GRASS GOOD GROUP A 3 Weighted Average Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs) Direct Entry, MINIMUM Subcatchment 59S: Runoff to Cultecs
$\frac{\text{aunoff}}{\text{unoff by SCS T}} =$ $\frac{\text{aunoff by SCS T}}{\text{ype III 24-hr 10}}$ $\frac{\text{Area}(ac) Ch}{0.120 9}$ $0.059 7$ $0.081 3$ $0.260 73$ Tc Length $\frac{\text{(min)} (\text{feet})}{10.0}$ $\text{unoff} =$	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" <u>N Description</u> <u>8 IMPERVIOUS AREA</u> 0 WOODS GOOD GROUP C 9 GRASS GOOD GROUP A 3 Weighted Average Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs) Direct Entry, MINIMUM Subcatchment 59S: Runoff to Cultecs 2.6 cfs @ 12.11 hrs, Volume= 0.22 af, Depth= 5.00"
unoff = unoff by SCS T $ype III 24-hr 10$ $Area (ac) CP$ $0.120 9$ $0.059 7$ $0.081 3$ $0.260 7$ $Tc Length$ $(min) (feet)$ 10.0 $unoff = unoff by SCS T$ $ype III 24-hr 100$	0.9 cfs @ 12.12 hrs, Volume 0.08 af, Depth= 3.51 " R-20 method, UH=SCS, Time Span= $5.00-30.00$ hrs, dt= 0.05 hrs 0-yr Rainfall= 6.50 " N Description 8 IMPERVIOUS AREA 0 WOODS GOOD GROUP C 9 GRASS GOOD GROUP A 3 Weighted Average Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs) Direct Entry, MINIMUM Subcatchment 59S: Runoff to Cultecs 2.6 cfs @ 12.11 hrs, Volume 0.22 af, Depth= 5.00 " R-20 method, UH=SCS, Time Span= $5.00-30.00$ hrs, dt= 0.05 hrs 0-yr Rainfall= 6.50 "
Runoff=Runoff by SCS TType III 24-hr 10Area (ac)Ch0.12090.05970.08130.2607TcLength(min)(feet)10.0Runoff=Sunoff by SCS TType III 24-hr 10Area (ac)Ch	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" N Description 8 IMPERVIOUS AREA 0 WOODS GOOD GROUP C 9 GRASS GOOD GROUP A 3 Weighted Average Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs) Direct Entry, MINIMUM Subcatchment 59S: Runoff to Cultecs 2.6 cfs @ 12.11 hrs, Volume= 0.22 af, Depth= 5.00" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" N Description
Runoff = Runoff by SCS T Type III 24-hr 10 Area (ac) Ch 0.120 9 0.059 7 0.081 3 0.260 7 Tc Length (min) (feet) 10.0 Runoff = Runoff by SCS TH Type III 24-hr 100 Area (ac) Ch 0.297 9	0.9 cfs @ 12.12 hrs, Volume= 0.08 af, Depth= 3.51" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" N Description 8 IMPERVIOUS AREA 0 WOODS GOOD GROUP C 9 GRASS GOOD GROUP A 3 Weighted Average Slope Velocity Capacity Description (ft/ft) (ft/sec) (cfs) Direct Entry, MINIMUM Subcatchment 59S: Runoff to Cultecs 2.6 cfs @ 12.11 hrs, Volume= 0.22 af, Depth= 5.00" R-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs 0-yr Rainfall=6.50" N Description 8 Paved parking & roofs

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Tc Length Slope Velocity Capacity Description	
(min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. minimum	
Subcatchment 60S: Runoff to PCB	
Runoff = 1.2 cfs @ 12.11 hrs, Volume= 0.10 af, Depth= 5.63"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"	
Area (ac) CN Description	
0.174 98 Paved parking & roofs	
0.042 74 >75% Grass cover, Good, HSG C	
0.216 93 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry 10 min minimum	
Subcatchment 61S: FRONT PARKING- BLI Runoff = 1.1 cfs @ 12.11 hrs, Volume= 0.10 af, Depth= 6.07" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	DG 12
Subcatchment 61S: FRONT PARKING- BLI Runoff = 1.1 cfs @ 12.11 hrs, Volume= 0.10 af, Depth= 6.07" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description	DG 12
Subcatchment 61S: FRONT PARKING- BLI Runoff = 1.1 cfs @ 12.11 hrs, Volume= 0.10 af, Depth= 6.07" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.190 98	DG 12
Subcatchment 61S: FRONT PARKING- BLI Runoff = 1.1 cfs @ 12.11 hrs, Volume= 0.10 af, Depth= 6.07" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.190 98 Paved parking & roofs	DG 12
Subcatchment 61S: FRONT PARKING- BLI Runoff = 1.1 cfs @ 12.11 hrs, Volume= 0.10 af, Depth= 6.07" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.190 98 Paved parking & roofs Tc Length Slope Velocity Capacity Description (min) (ft/(ft))	DG 12
Subcatchment 61S: FRONT PARKING- BLI Runoff = 1.1 cfs @ 12.11 hrs, Volume= 0.10 af, Depth= 6.07" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.190 98 Paved parking & roofs Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MINIMUT	DG 12
Subcatchment 61S: FRONT PARKING- BLI Runoff = 1.1 cfs @ 12.11 hrs, Volume= 0.10 af, Depth= 6.07" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.190 98 Paved parking & roofs Tc Length Slope Velocity Capacity Description 10.0 Direct Entry, 10 MIN. MINIMUS	DG 12
Subcatchment 61S: FRONT PARKING- BLI Runoff = 1.1 cfs @ 12.11 hrs, Volume= 0.10 af, Depth= 6.07" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.190 98 Paved parking & roofs Tc Length Slope Velocity Capacity Description 10.0 Direct Entry, 10 MIN. MINIMUL Subcatchment 62S: SIDE PARKING- BLDC	DG 12 M G 12
Subcatchment 61S: FRONT PARKING- BLIRunoff = $1.1 \text{ cfs} @ 12.11 \text{ hrs, Volume=} 0.10 \text{ af, Depth=} 6.07"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 100-yr Rainfall=6.50"Area (ac)CNDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)10.0Direct Entry, 10 MIN. MINIMULSubcatchment 62S: SIDE PARKING- BLDCRunoff =2.8 \text{ cfs} @ 12.11 \text{ hrs, Volume=}0.25 \text{ af, Depth=} 6.07"$	DG 12 M G 12
Subcatchment 61S: FRONT PARKING- BLIRunoff= $1.1 cfs @ 12.11 hrs, Volume=$ $0.10 af, Depth= 6.07"$ Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00 hrs, dt= 0.05 hrs$ Type III 24-hr 100-yr Rainfall= $6.50"$ Area (ac)CNDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 MIN. MINIMULYSubcatchment 62S: SIDE PARKING- BLDCRunoff= $2.8 cfs @ 12.11 hrs, Volume=$ $0.25 af, Depth= 6.07"$ Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00 hrs, dt= 0.05 hrs$ Type III 24-hr 100-yr	DG 12 M G 12
Subcatchment 61S: FRONT PARKING- BLIRunoff=1.1 cfs @ 12.11 hrs, Volume=0.10 af, Depth= 6.07"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"Area (ac)CNDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 MIN. MINIMULSubcatchment 62S: SIDE PARKING- BLDORunoff=2.8 cfs @ 12.11 hrs, Volume=0.25 af, Depth= 6.07"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 100-yrRainfall=6.50"Area (ac)CNDescription	DG 12 M G 12
Subcatchment 61S: FRONT PARKING- BLIRunoff= $1.1 \text{ cfs} @ 12.11 \text{ hrs, Volume}=$ $0.10 \text{ af, Depth}= 6.07"$ Runoff by SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00 \text{ hrs, dt}= 0.05 \text{ hrs}$ Type III 24-hr 100-yr Rainfall= $6.50"$ Area (ac)CNDescription0.19098Paved parking & roofsTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 MIN. MINIMULYSubcatchment 62S: SIDE PARKING- BLDCRunoff= $2.8 \text{ cfs} @ 12.11 \text{ hrs, Volume}=$ $0.25 \text{ af, Depth}= 6.07"$ Runoffby SCS TR-20 method, UH=SCS, Time Span= $5.00-30.00 \text{ hrs, dt}= 0.05 \text{ hrs}$ Type III 24-hr 100-yrRainfall=6.50"Area (ac)CNDescription0.50098Paved parking & roofsArea (ac)	DG 12 M G 12

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	2050 DOGT FED 2006 Time III 24-hr 100	-ur Rainfall=6 50"
	3250 POSI-FED_2000 Type III 24-01 100	-yr Rungun 0.50
0	HydroCAD® 7.00 s/n 000814 © 1986-2003 Applied Microcomputer Systems	3/14/2006
	Subcatchment 63S: ROOF- BLDG 12	-
	Runoff = 6.4 cfs @ 12.11 hrs, Volume= 0.58 af, Depth= 6.07"	
	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"	
	Area (ac) CN Description	
	1.150 98 Paved parking & roofs	
	Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
	10.0 Direct Entry, 10 MIN. MINIMUM	
	Subcatchment 645: KOOF- BLDG 11	
	Runoff = 4.2 cfs @ 12.11 hrs, Volume= 0.38 af, Depth= 6.07"	
	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs	
	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"	
	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" <u>Area (ac) CN Description</u> 0.760 98 Paved roads w/curbs & sewers	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" <u>Area (ac) CN Description</u> 0.760 98 Paved roads w/curbs & sewers The Level 1 of the of the Computer Description	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" <u>Area (ac) CN Description</u> 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MINIMUM	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MINIMUM	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MINIMUM Subcatchment 65S: FRONT PARKING- BLDG 11	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"Area (ac)CNDescription 0.760 98Paved roads w/curbs & sewersTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 MIN. MINIMUMSubcatchment 65S: FRONT PARKING- BLDG 11Runoff=2.3 cfs @ 12.11 hrs, Volume=0.19 af, Depth= 4.67"	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"Area (ac)CNDescription0.76098Paved roads w/curbs & sewersTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 MIN. MINIMUMSubcatchment 65S: FRONT PARKING- BLDG 11Runoff=2.3 cfs @ 12.11 hrs, Volume=0.19 af, Depth= 4.67"	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"Area (ac)CNDescription0.76098Paved roads w/curbs & sewersTcLength (feet)Slope (ft/ft)Velocity (capacity)Description10.0Direct Entry, 10 MIN. MINIMUMSubcatchment 65S: FRONT PARKING- BLDG 11Runoff=2.3 cfs @ 12.11 hrs, Volume=0.19 af, Depth= 4.67"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"0.00 hrs, dt= 0.05 hrs	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) 10.0 Direct Entry, 10 MIN. MINIMUM Subcatchment 65S: FRONT PARKING- BLDG 11 Runoff = 2.3 cfs @ 12.11 hrs, Volume= 0.19 af, Depth= 4.67" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewers Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 MIN. MINIMUM Subcatchment 65S: FRONT PARKING- BLDG 11 Runoff = 2.3 cfs @ 12.11 hrs, Volume= 0.19 af, Depth= 4.67" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" Area (ac) CN Description 0.200 98 Paved parking & roofs 0.200 98 Paved parking & roofs	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"Area (ac)CNDescription0.76098Paved roads w/curbs & sewersTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 MIN. MINIMUMSubcatchment 65S: FRONT PARKING- BLDG 11Runoff=2.3 cfs @ 12.11 hrs, Volume=0.19 af, Depth= 4.67"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 100-yr Rainfall=6.50"Area (ac)CNDescription0.20098Paved parking & roofs0.29074>75% Grass cover, Good, HSG C0.40084Weichted Averace	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"Area (ac)CNDescription0.76098Paved roads w/curbs & sewersTcLengthSlopeVelocityCapacityDescription(min)(feet)(ft/ft)(ft/sec)(cfs)10.0Direct Entry, 10 MIN. MINIMUMSubcatchment 65S: FRONT PARKING- BLDG 11Runoff2.3 cfs @ 12.11 hrs, Volume=0.19 af, Depth= 4.67"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrsType III 24-hr 100-yr Rainfall=6.50"Area (ac)CNDescription0.20098Paved parking & roofs0.2900.20098Paved parking & roofs0.2900.20098Paved parking & roofs0.2900.49084Weighted Average	
)	Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"Area (ac) CN Description 0.760 98 Paved roads w/curbs & sewersTc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)10.0 Direct Entry, 10 MIN. MINIMUMSubcatchment 65S: FRONT PARKING- BLDG 11Runoff = 2.3 cfs @ 12.11 hrs, Volume= 0.19 af, Depth= 4.67"Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"Area (ac) CN Description 0.200 98 Paved parking & roofs 0.290 74 >75% Grass cover, Good, HSG C 0.490 84 Weighted Average Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	

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Subcatchment 66S: RIGHT PARKING- BLDG 11

Runoff = 2.8 cfs @ 12.11 hrs, Volume= 0.24 af, Depth= 4.89"

Area (ac) CN Description
0.280 98 Paved parking & roofs
0.300 74 >75% Grass cover, Good, HSG C
0.580 86 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM
Subcatchment 67S: LOADING AREA- BLDG 11
Runoff = $1.1 \text{ cfs} @ 12.11 \text{ hrs}$, Volume= 0.10 af , Depth= $6.07"$
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.200 98 Paved parking & roofs
Tc Length Slope Velocity Capacity Description _(min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM
Subcatchment 68S: PARKING LOT BLDG#10
Runoff = 4.9 cfs @ 12.11 hrs, Volume= 0.41 af, Depth= 5.00"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.520 98 Paved parking & roofs
0.470 74 >75% Grass cover, Good, HSG C
0.990 87 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 MIN. MINIMUM

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Type III 24-hr 100-yr Rainfall=6.50"

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Subcatchment 69S: ROOF - BLDG 10	
Runoff = 1.3 cfs @ 12.11 hrs, Volume= 0.12 af, Depth= 6.07"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"	
Area (ac) CN Description	-
0.240 98 Paved parking & roofs	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	_
10.0 Direct Entry, 10 MIN. MINIMUM	
Subcatchment 70S: Runoff to PCB58	
Subtatemient 705. Runoir to r Choo	
Runoff = 2.6 cfs @ 12.11 hrs, Volume= 0.22 af, Depth= 5.00"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Fype III 24-hr 100-yr Rainfall=6.50"	
Area (ac) CN Description	_
0.288 98 Paved parking & roofs	
0.241 74 >75% Grass cover, Good, HSG C	
0.529 87 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	_
10.0 Direct Entry, 10 min. minimum	
Subcatchment 71S: Runoff to PCB57	
Runoff = 1.7 cfs @ 12.12 hrs, Volume= 0.14 af, Depth= 3.11"	
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"	
Area (ac) CN Description	
0.278 98 Paved parking & roofs	
0.278 39 >75% Grass cover, Good, HSG A	
0.556 69 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min, minimum	

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Subcatchment 72S: Runoff to PCB53

Runon = 1.8 crs @ 12.11 hrs, Volume = 0.15 af. Depth = 5	Runoff	=	1.8 cfs @	12.11 hrs,	Volume=	0.15 af. Depth= 5.00	
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"

Area (ac) CN Description
0.199 98 Paved parking & roofs
0.171 74 >75% Grass cover, Good, HSG C
0.370 87 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 73S: Runoff to PCB52
Runoff = 1.4 cfs @ 12.11 hrs, Volume= 0.12 af, Depth= 5.53"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.231 98 Paved parking & roofs
0.028 39 >/5% Grass cover, Good, HSG A
0.259 92 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 745. Runoff to PCR60
Subcatchinent 745. Runoir to I CD00
Runoff = 2.8 cfs @ 12.11 hrs, Volume= 0.23 af, Depth= 4.56"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Fype III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.455 98 Paved parking & roofs
0.151 39 >75% Grass cover, Good, HSG A
0.606 83 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum

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Runoff =

Area (ac)

0.225

0.203

0.428

98

39

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Type III 24-hr 100-yr Rainfall=6.50"

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1.4 cfs @ 12.12 hrs, Volume= 0.11 af, Depth= 3.21" Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50" CN Description Paved parking & roofs >75% Grass cover, Good, HSG A Weighted Average

Subcatchment 75S: Runoff to PCB67

Slope Velocity Capacity Description Tc Length (feet) (ft/ft) (ft/sec) (cfs) (min) Direct Entry, 10 min. minimum 10.0

Subcatchment 76S: Runoff to PCB65

0.4 cfs @ 12.12 hrs, Volume= 0.03 af, Depth= 3.61" Runoff

Area	(ac)	CN	Desc	ription		
0.	.064	98	Pave	d parking	& roofs	
0.	.043	39	>75%	Grass cov	ver, Good, H	ISG A
0.	107	74	Weig	ghted Aver	age	
Tc (min)	Len (f	igth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0						Direct Entry, 10 min. minimum
					Subcatch	ment 77S: Runoff to PCB79
Runoff	=		1.4 cfs (@ 12.11 h	rs, Volume	= 0.12 af, Depth= 5.00"
Runoff I Type III	by SC 24-h	CS TR- r 100-	-20 met yr Rair	hod, UH=9 nfall=6.50"	6CS, Time S	pan= 5.00-30.00 hrs, dt= 0.05 hrs
Area ((ac)	CN	Desc	ription		
0.	232	98	Pave	d parking	& roofs	
0.	052	39	>75%	Grass cov	ver, Good, H	ISG A
0.	284	87	Weig	ted Aver	age	
Tc (min)	Len (fe	igth eet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0						Direct Entry, 10 min. minimum

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Subcatchment 78S: Runoff to PCB78

Runoff	=	1.0 cfs @	12.11 hrs.	Volume=	0.09 af Depth= 5.73"
		1.0 010 0	14.11110,	volume-	0.09 al, Deptn = 37.3

0.173 98 Paved parking & roofs
0.014 39 >75% Grass cover, Good, HSG A
0.187 94 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 79S: Runoff to PCB62
Runoff = 1.4 cfs @ 12.12 hrs, Volume= 0.12 af, Depth= 3.11"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
ype III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.232 98 Paved parking & roofs 0.229 39 >75% Crass cover Cood HSC A
0.461 69 Weighted Average
ontor of Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 80S: Runoff to PCB66
unoff = $1.5 \text{ cfs} @ 12.11 \text{ hrs}, \text{ Volume} = 0.13 \text{ af}, \text{ Depth} = 5.53"$
unoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
ype III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.250 98 Paved parking & roofs
0.028 39 >75% Grass cover, Good, HSG A
0.278 92 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum

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Subcatchment 81S: Runoff to PCB76

Runoff =	1.2 cfs @	12.11 hrs,	Volume=	0.10 af, Depth= 5.00"
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Area (ac) CN Description	
0.198 98 Paved parking & roofs	
0.045 39 >75% Grass cover, Good, HSG A	
0.243 87 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. m	inimum
Subcatchment 82R: Runoff to	PCB70
Runoff = 1.3 cfs @ 12.12 hrs, Volume= 0.11 af, Depth= 2	2.53"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.	05 hrs
Type III 24-hr 100-yr Rainfall=6.50"	
Area (ac) CN Description	
0.212 98 Paved parking & roofs 0.311 39 >75% Grass cover, Good, HSG A	
0.523 63 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. m	inimum
	DODES
Subcatchment 83S: Runoff to	PCB72
Runoff = $14 \text{ cfs} @ 12.11 \text{ hrs. Volume} = 0.11 \text{ af. Depth} = 4$	1.45"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.0	05 hrs
Type III 24-hr 100-yr Rainfall=6.50"	
Area (ac) CN Description	
0.224 98 Paved parking & roofs	
0.086 39 >75% Grass cover, Good, HSG A	
0.310 82 Weighted Average	
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)	
10.0 Direct Entry, 10 min. m	inimum

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Subcatchment 84S: Runoff to PCB74

Runoff	=	1.6 cfs @	12.12 hrs,	Volume=	0.13 af. Depth= 4 02"
			A MAR A MAN A LA UY	1 Orunic	0.10 al, Debui = 4.02

_Area (ac) CN Description			
0.262 98 Paved parking & roofs			
0.138 39 >75% Grass cover, Good, HSG A			
0.400 78 Weighted Average			
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)			
10.0 Direct Entry, 10 min. minimum			
Subcatchment 85S: Runoff to PCB89			
Runoff = 1.8 cfs @ 12.11 hrs, Volume= 0.16 af, Depth= 6.00"			
Rupoff by SCS TR-20 method LIH-SCS Time Sharp 5.00.20.00 here. It. 0.05 h			
Type III 24-hr 100-yr Rainfall=6.50"			
Area (ac) CN Description			
0.303 98 Paved parking & roofs			
0.014 74 >75% Grass cover, Good, HSG C			
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)			
10.0 Direct Entry, 10 min. minimum			
Subcatchment 86S: Runoff to PCB85			
Runoff = $0.8 \text{ cfs} @ 12.12 \text{ hrs}$, Volume= 0.07 af , Depth= $3.01^{"}$			
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Fype III 24-hr 100-yr Rainfall=6.50"			
Area (ac) CN Description			
0.132 98 Paved parking & roofs			
0.135 39 >75% Grass cover, Good, HSG A			
0.008 74 grass good c soil			
0.275 68 Weighted Average			
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)			
10.0 Direct Entry, 10 min. minimum			

Subcatchment 87S: Runoff to PCB83

Runoff = 2.0 cfs @ 12.11 hrs, Volume= 0.17 af, Depth= 5.21"

0.334 98 Paved parking & roofs 0.059 39 >75% Grass cover, Good, HSG A 0.393 89 Weighted Average Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 min. minimum Subcatchment 88S: Runoff to PCB85
0.059 39 >75% Grass cover, Good, HSG A 0.393 89 Weighted Average Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 min. minimum Subcatchment 88S: Runoff to PCB85
0.393 89 Weighted Average Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 min. minimum Subcatchment 88S: Runoff to PCB85
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs) 10.0 Direct Entry, 10 min. minimum Subcatchment 88S: Runoff to PCB85
10.0 Direct Entry, 10 min. minimum Subcatchment 88S: Runoff to PCB85
Subcatchment 88S: Runoff to PCB85
Runoff = $1.8 \text{ cfs} @ 12.11 \text{ hrs}$, Volume= 0.16 af , Depth= 5.83 "
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.289 98 Paved parking & roofs
0.036 74 >75% Grass cover, Good, HSG C
0.325 95 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 89S: Runoff to PCB86
Runoff = 1.2 cfs @ 12.11 hrs, Volume= 0.11 af, Depth= 6.07"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.221 98 Paved parking & roofs
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry,

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Subcatchment 90S: Runoff to PCB81

Runoff = 3.1 cfs @ 12.11 hrs, Volume= 0.27 af, Depth= 5.83"

_Area (ac) CN Description
0.493 98 Paved parking & roofs
0.068 74 >75% Grass cover, Good, HSG C
0.561 95 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 91S: Runoff to PCB95
Runoff = $0.5 cfs @ 12.11 hrs, Volume = 0.04 af, Depth = 5.83"$
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.08098Paved parking & roofs0.01274>75% Grass cover, Good, HSG C
0.092 95 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum
Subcatchment 92S: Runoff to PCB96
Runoff = 0.9 cfs @ 12.11 hrs, Volume= 0.08 af, Depth= 5.32"
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Type III 24-hr 100-yr Rainfall=6.50"
Area (ac) CN Description
0.114 98 Paved parking & roofs 0.062 74 >75% Grass cover, Good, HSG C
0.176 90 Weighted Average
Tc Length Slope Velocity Capacity Description (min) (feet) (ft/ft) (ft/sec) (cfs)
10.0 Direct Entry, 10 min. minimum

3

Type III 24-hr 100-yr Rainfall=6.50"

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Subcatchment 93S: Runoff to PCB98

Runoff = 1.1 cfs @ 12.12 hrs, Volume= 0.09 af, Depth= 3.21"

Area (a	ac) CN	Description		
0.1	80 98	impervious		
0.1	62 39	>75% Grass (cover, Good, H	HSG A
0.3	42 70	Weighted Av	verage	
Tc (min)	Length (feet)	Slope Veloci (ft/ft) (ft/se	ty Capacity c) (cfs)	Description
10.0				Direct Entry,
Runoff	=	0.6 cfs @ 12.11	Subcatch hrs, Volume	
Type III 2 Area (a	24-hr 100	-yr Rainfall=6.5 Description	0"	par- 5.00-50.00 ms, dt- 0.05 ms
0.10	02 98	impervious a	rea	
Tc (min)	Length (feet)	Slope Velocit (ft/ft) (ft/set	cy Capacity c) (cfs)	Description
10.0				Direct Entry, minimum
Type III 24-hr 100-yr Rainfall=6.50"

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Reach 10R: DP 10

Inflow Area =		46.946 ac, Inflow De	epth = 1.26''	for 100-vr event		
Inflow	=	34.5 cfs @ 12.36 hrs,	Volume=	4.95 af		
Outflow	=	34.5 cfs @ 12.36 hrs,	Volume=	4.95 af, Atten= 0%, Lag= 0.0 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 11.7 fps, Min. Travel Time= 0.0 min Avg. Velocity = 4.0 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.86' @ 12.36 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 20R: Design Point #20

Inflow Area =		4.470 ac, Inflow Depth = 3 .	31" for 100-yr event
Inflow	=	12.6 cfs @ 12.21 hrs, Volume=	1.23 af
Outflow	=	12.6 cfs @ 12.21 hrs, Volume=	1.23 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.7 fps, Min. Travel Time= 0.0 min Avg. Velocity = 3.1 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.58' @ 12.21 hrs Capacity at bank full= 1,287.1 cfs 99.0" Diameter Pipe n= 0.010 Length= 1.0' Slope= 0.0100 '/'

Reach 30R: Design Point #30

Inflow Area =		6.360 ac, Inflor	v Depth = 3.01 "	for 100-yr event	
Inflow	=	15.2 cfs @ 12.25 h	urs, Volume=	1.60 af	
Outflow	=	15.2 cfs @ 12.25 h	ars, Volume=	1.60 af, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 9.1 fps, Min. Travel Time= 0.0 min Avg. Velocity = 3.8 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.58' @ 12.25 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 40R: Design Point #40

Inflow Area =		0.510 ac, Inflow Depth = 0.33	1" for 100-yr event
Inflow	=	0.0 cfs @ 12.47 hrs, Volume=	0.01 af
Outflow	=	0.0 cfs @ 12.47 hrs, Volume=	0.01 af, Atten = 0%, Lag = 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 2.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.0 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.01' @ 12.47 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 99R: Design Point #50

Inflow Area =		0.330 ac	; Inflow Depth = 0.36	for 100-yr event	
Inflow	=	0.0 cfs @	12.44 hrs, Volume=	0.01 af	
Outflow	=	0.0 cfs @	12.44 hrs, Volume=	0.01 af, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 2.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.01' @ 12.44 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

)

SIZING OF DRAINAGE PIPES 100-YEAR 24-HOUR STORM EVENT

Type III 24-hr 100-yr Rainfall=6.50"

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Reach 1R: R1

 Inflow Area =
 0.235 ac, Inflow Depth = 4.13" for 100-yr event

 Inflow =
 1.0 cfs @ 12.11 hrs, Volume=
 0.08 af

 Outflow =
 1.0 cfs @ 12.12 hrs, Volume=
 0.08 af, Atten=1%, Lag=0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.2 fps, Min. Travel Time= 0.2 min Avg. Velocity = 1.1 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.41' @ 12.12 hrs Capacity at bank full= 2.7 cfs 12.0" Diameter Pipe n= 0.012 Length= 42.0' Slope= 0.0050 '/'

Reach 2R: R2

Inflow Area =		0.211 ac	, Inflow Dep	th = 4.45''	for 100-yr	event	
Inflow	=	0.9 cfs @	12.11 hrs, Vo	olume=	0.08 af		
Outflow	-	0.9 cfs @	12.12 hrs, Vo	olume=	0.08 af,	Atten=1%, Lag=0.4 m	nin

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.1 fps, Min. Travel Time= 0.2 min Avg. Velocity = 1.1 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.41' @ 12.12 hrs Capacity at bank full= 2.7 cfs 12.0" Diameter Pipe n= 0.012 Length= 42.0' Slope= 0.0050 '/'

Reach 3R: R3

Inflow Area =		2.558 ac	, Inflow D	epth = 2.80"	for 100-yr	event	
Inflow	=	6.3 cfs @	12.15 hrs,	Volume=	0.60 af		
Outflow	=	6.3 cfs @	12.15 hrs,	Volume=	0.60 af,	Atten= 0%,	Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.3 fps, Min. Travel Time= 0.2 min Avg. Velocity = 1.6 fps, Avg. Travel Time= 0.4 min

Peak Depth= 0.73' @ 12.15 hrs Capacity at bank full= 9.9 cfs A factor of 2.00 has been applied to the supplied storage and discharge data 15.0" Diameter Pipe n= 0.012 Length= 42.0' Slope= 0.0050 '/'

Reach 4R: R4

Inflow Area =		5.226 ac, Inflow Depth = 3.27"		for 100-yr event	
Inflow	=	13.2 cfs @	12.14 hrs, Volume=	1.43 af	
Outflow	=	13.2 cfs @	12.15 hrs, Volume=	1.43 af, Atten= 0%, Lag= 0.4 min	

Type III 24-hr 100-yr Rainfall=6.50"

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Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.5 fps, Min. Travel Time= 0.2 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.97' @ 12.15 hrs Capacity at bank full= 14.0 cfs A factor of 2.00 has been applied to the supplied storage and discharge data 15.0" Diameter Pipe n= 0.012 Length= 78.0' Slope= 0.0100 '/'

Reach 5R: R5

Inflow Area =		0.190 ac, Inflow Depth = 5.21 "	for 100-yr event
Inflow	=	1.0 cfs @ 12.11 hrs, Volume=	0.08 af
Outflow	=	1.0 cfs @ 12.11 hrs, Volume=	0.08 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.2 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.1 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.41' @ 12.11 hrs Capacity at bank full= 2.7 cfs 12.0" Diameter Pipe n= 0.012 Length= 20.0' Slope= 0.0050 '/'

Reach 6R: R6

Inflow Area =0.804 ac, Inflow Depth = $3.01^{"}$ for 100-yr eventInflow =2.4 cfs @ 12.12 hrs, Volume=0.20 afOutflow =2.4 cfs @ 12.12 hrs, Volume=0.20 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.9 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.6 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.74' @ 12.12 hrs Capacity at bank full= 2.7 cfs 12.0" Diameter Pipe n= 0.012 Length= 20.0' Slope= 0.0050 '/'

Reach 7R: R7

Inflow Area =		4.232 ac, Inflow Depth = 3.24"			for 100-yr event	
Inflow	=	10.0 cfs @	12.15 hrs,	Volume=	1.14 af	
Outflow	=	9.9 cfs @	12.16 hrs,	Volume=	1.14 af, Atten= 0%, Lag= 0.4 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 11.0 fps, Min. Travel Time= 0.2 min Avg. Velocity = 4.3 fps, Avg. Travel Time= 0.6 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.86' @ 12.15 hrs Capacity at bank full= 12.1 cfs 15.0" Diameter Pipe n= 0.012 Length= 144.0' Slope= 0.0300 '/'

Reach 8R: R8

Inflow Area =		4.232 ac, Inflow Depth = 3.24"			for 100-yr event	
Inflow	=	10.0 cfs @	12.14 hrs,	Volume=	1.14 af	
Outflow	=	10.0 cfs @	12.15 hrs,	Volume=	1.14 af, Atten= 0%, Lag= 0.5 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 10.2 fps, Min. Travel Time= 0.2 min Avg. Velocity = 4.0 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.93' @ 12.14 hrs Capacity at bank full= 11.1 cfs 15.0" Diameter Pipe n= 0.012 Length= 138.0' Slope= 0.0250 '/'

Reach 9R: R9

Inflow Area =		0.030 ac, Inflow Depth = 6.07"	for 100-yr event	
Inflow	=	0.2 cfs @ 12.11 hrs, Volume=	0.02 af	
Outflow	=	0.2 cfs @ 12.11 hrs, Volume=	0.02 af, Atten= 0%, Lag= 0.1 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.1 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.2 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.12' @ 12.11 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 16.0' Slope= 0.0200 '/'

Reach 10R: DP 10

 Inflow Area =
 46.946 ac, Inflow Depth = 1.26" for 100-yr event

 Inflow =
 34.5 cfs @ 12.36 hrs, Volume=
 4.95 af

 Outflow =
 34.5 cfs @ 12.36 hrs, Volume=
 4.95 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 11.7 fps, Min. Travel Time= 0.0 min Avg. Velocity = 4.0 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.86' @ 12.36 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

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Reach 11R: R11

 Inflow Area =
 0.663 ac, Inflow Depth =
 1.48"
 for 100-yr event

 Inflow =
 0.8 cfs @
 12.14 hrs, Volume=
 0.08 af

 Outflow =
 0.8 cfs @
 12.14 hrs, Volume=
 0.08 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.0 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.2 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.26' @ 12.14 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 16.0' Slope= 0.0200 '/'

Reach 12R: R12

Inflow Area =		3.379 ac	; Inflow Depth = 3.53 "	for 100-yr event	
Inflow	=	8.4 cfs @	12.13 hrs, Volume=	0.99 af	
Outflow	=	8.4 cfs @	12.15 hrs, Volume=	0.99 af, Atten= 0%, Lag= 0.9 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 13.2 fps, Min. Travel Time= 0.4 min Avg. Velocity = 5.3 fps, Avg. Travel Time= 0.9 min

Peak Depth= 0.76' @ 12.14 hrs Capacity at bank full= 9.1 cfs 12.0" Diameter Pipe n= 0.012 Length= 294.0' Slope= 0.0559 '/'

Reach 13R: R13

Inflow Area =		0.250 ac, In	flow Depth = 3.21 "	for 100-yr event		
Inflow	=	0.8 cfs @ 12.1	12 hrs, Volume=	0.07 af		
Outflow	=	0.8 cfs @ 12.1	12 hrs, Volume=	0.07 af, Atten= 0%, Lag= 0.1 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.0 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.9 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.26' @ 12.12 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 16.0' Slope= 0.0200 '/'

Reach 14R: R14

Inflow Area =		0.224 ac	, Inflow Depth = 3.82 "	for 100-yr event	
Inflow	=	0.9 cfs @	12.12 hrs, Volume=	0.07 af	
Outflow	=	0.9 cfs @	12.12 hrs, Volume=	0.07 af, Atten= 0%, Lag= 0.1 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.9 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.8 fps, Avg. Travel Time= 0.1 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.25' @ 12.12 hrs Capacity at bank full= 9.9 cfs 15.0" Diameter Pipe n= 0.012 Length= 16.0' Slope= 0.0200 '/'

Reach 15R: R15

Inflow Area =		0.683 ac	, Inflow Depth	= 2.46"	for 100-yr event		
Inflow	=	1.6 cfs @	12.12 hrs, Vol	ume=	0.14 af		
Outflow	=	1.6 cfs @	12.14 hrs, Vol	ume=	0.14 af,	Atten=1%,	Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 9.0 fps, Min. Travel Time= 0.3 min Avg. Velocity = 3.4 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.28' @ 12.13 hrs Capacity at bank full= 9.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 144.0' Slope= 0.0600 '/'

Reach 16R: R16

Inflow An	rea =	0.270 ac	, Inflow D	epth = 2.91"	for 100-yr event
Inflow	=	0.8 cfs @	12.12 hrs,	Volume=	0.07 af
Outflow	=	0.8 cfs @	12.12 hrs,	Volume=	0.07 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.9 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.9 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.26' @ 12.12 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 16.0' Slope= 0.0200 '/'

Reach 17R: R17

 Inflow Area =
 0.413 ac, Inflow Depth = 2.17" for 100-yr event

 Inflow =
 0.9 cfs @ 12.13 hrs, Volume=
 0.07 af

 Outflow =
 0.9 cfs @ 12.13 hrs, Volume=
 0.07 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.0 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.0 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.27' @ 12.13 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 16.0' Slope= 0.0200 '/'

Type III 24-hr 100-yr Rainfall=6.50"

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Reach 18R: R18

 Inflow Area =
 6.660 ac, Inflow Depth = 5.43" for 100-yr event

 Inflow =
 33.1 cfs @ 12.13 hrs, Volume=
 3.01 af

 Outflow =
 32.8 cfs @ 12.14 hrs, Volume=
 3.01 af, Atten= 1%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 12.9 fps, Min. Travel Time= 0.4 min Avg. Velocity = 4.8 fps, Avg. Travel Time= 1.1 min

Peak Depth= 1.29' @ 12.13 hrs Capacity at bank full= 62.8 cfs 30.0" Diameter Pipe n= 0.012 Length= 304.0' Slope= 0.0200 '/'

Reach 19R: R19

Inflow Area =		0.640 ac, Inflow Depth = 4.79"			for 100-yr event	
Inflow	=	3.0 cfs @	12.11 hrs,	Volume=	0.26 af	
Outflow	=	2.9 cfs @	12.13 hrs,	Volume=	0.26 af, Atten= 3%, Lag= 1.3 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.1 fps, Min. Travel Time= 0.6 min Avg. Velocity = 2.1 fps, Avg. Travel Time= 1.8 min

Peak Depth= 0.48' @ 12.12 hrs Capacity at bank full= 13.5 cfs 18.0" Diameter Pipe n= 0.012 Length= 230.0' Slope= 0.0140 '/'

Reach 20R: Design Point #20

Inflow Area =		4.470 ac	, Inflow D	epth = 3.31"	for 100-yr event		
Inflow	=	12.6 cfs @	12.21 hrs,	Volume=	1.23 af		
Outflow	=	12.6 cfs @	12.21 hrs,	Volume=	1.23 af, Atten= 0%, L	_ag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.7 fps, Min. Travel Time= 0.0 min Avg. Velocity = 3.1 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.58' @ 12.21 hrs Capacity at bank full= 1,287.1 cfs 99.0" Diameter Pipe n= 0.010 Length= 1.0' Slope= 0.0100 '/'

Reach 21R: R21

Inflow Area =		0.470 ac, 1	Inflow Depth = 4.45 "	for 100-yr event	
Inflow	=	2.1 cfs @ 12	2.11 hrs, Volume=	0.17 af	
Outflow	=	2.1 cfs @ 12	2.12 hrs, Volume=	0.17 af, Atten= 0%, Lag= 0.1 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.5 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.2 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.43' @ 12.11 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 24.0' Slope= 0.0200 '/'

Reach 22R: R22

Inflow Area =		0.170 ac	, Inflow Depth = 5.7	73" for 100-yr event
Inflow	=	0.9 cfs @	12.11 hrs, Volume=	0.08 af
Outflow	=	0.9 cfs @	12.11 hrs, Volume=	0.08 af, Atten= 0%, Lag= 0.0 mir

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.1 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.6 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.22' @ 12.11 hrs Capacity at bank full= 8.6 cfs 12.0" Diameter Pipe n= 0.012 Length= 12.0' Slope= 0.0500 '/'

Reach 23R: R23

Inflow Area =		5.820 ac, Inflow Depth = 5.47 "			for 100-yr event		
Inflow	=	29.3 cfs @ 1	2.12 hrs,	Volume=	2.65 af		
Outflow	=	29.0 cfs @ 1	2.13 hrs,	Volume=	2.65 af,	Atten=1%,	Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 12.3 fps, Min. Travel Time= 0.1 min Avg. Velocity = 4.8 fps, Avg. Travel Time= 0.2 min

Peak Depth= 1.41' @ 12.12 hrs Capacity at bank full= 34.7 cfs 24.0" Diameter Pipe n= 0.012 Length= 52.0' Slope= 0.0200 '/'

Reach 24R: R24

 Inflow Area =
 0.330 ac, Inflow Depth = 4.67" for 100-yr event

 Inflow =
 1.5 cfs @ 12.11 hrs, Volume=
 0.13 af

 Outflow =
 1.5 cfs @ 12.11 hrs, Volume=
 0.13 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.0 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.1 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.36' @ 12.11 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 16.0' Slope= 0.0200 '/'

Type III 24-hr 100-yr Rainfall=6.50"

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Reach 25R: R25

Inflow Area =0.240 ac, Inflow Depth = $5.21^{"}$ for 100-yr eventInflow =1.2 cfs @ 12.11 hrs, Volume=0.10 afOutflow =1.2 cfs @ 12.11 hrs, Volume=0.10 af

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.6 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.0 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.32' @ 12.11 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 16.0' Slope= 0.0200 '/'

Reach 26R: R26

Inflow Area =		5.250 ac	, Inflow Depth = 5.54 "	for 100-yr event	
Inflow	=	26.7 cfs @	12.12 hrs, Volume=	2.42 af	
Outflow	=	26.5 cfs @	12.12 hrs, Volume=	2.42 af, Atten= 1%, Lag= 0.3 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 15.9 fps, Min. Travel Time= 0.2 min Avg. Velocity = 5.9 fps, Avg. Travel Time= 0.4 min

Peak Depth= 1.05' @ 12.12 hrs Capacity at bank full= 49.0 cfs 24.0" Diameter Pipe n= 0.012 Length= 146.0' Slope= 0.0400 '/'

Reach 27R: R27

Inflow A	rea =	4.670 ac	, Inflow D	epth = 5.62"	for 100-yr event
Inflow	=	24.0 cfs @	12.12 hrs,	Volume=	2.19 af
Outflow	=	23.9 cfs @	12.12 hrs,	Volume=	2.19 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 15.5 fps, Min. Travel Time= 0.2 min Avg. Velocity = 5.8 fps, Avg. Travel Time= 0.4 min

Peak Depth= 0.99' @ 12.12 hrs Capacity at bank full= 49.0 cfs 24.0" Diameter Pipe n= 0.012 Length= 146.0' Slope= 0.0400 '/'

Reach 28R: R28

Inflow Area =		0	1.260 ac	; Inflow Depth = 5.21 "	for 100-yr event	
Inflow	-		5.9 cfs @	12.14 hrs, Volume=	0.55 af	
Outflow	=	11	5.9 cfs @	12.15 hrs, Volume=	0.55 af, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 11.7 fps, Min. Travel Time= 0.0 min Avg. Velocity = 4.2 fps, Avg. Travel Time= 0.1 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.49' @ 12.14 hrs Capacity at bank full= 25.4 cfs 18.0" Diameter Pipe n= 0.012 Length= 16.0' Slope= 0.0500 '/'

Reach 29R: R29

Inflow Area =		0.320 ac	; Inflow Depth = $5.00"$	for 100-yr event	
Inflow	=	1.6 cfs @	12.11 hrs, Volume=	0.13 af	
Outflow	=	1.6 cfs @	12.11 hrs, Volume=	0.13 af, Atten= 0%,	Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 8.2 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.8 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.27' @ 12.11 hrs Capacity at bank full= 15.6 cfs 15.0" Diameter Pipe n= 0.012 Length= 16.0' Slope= 0.0500 '/'

Reach 30R: Design Point #30

Inflow Area =		6.360 ac, Inflow Depth = 3.01"	for 100-yr event	
Inflow	=	15.2 cfs @ 12.25 hrs, Volume=	1.60 af	
Outflow	=	15.2 cfs @ 12.25 hrs, Volume=	1.60 af, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 9.1 fps, Min. Travel Time= 0.0 min Avg. Velocity = 3.8 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.58' @ 12.25 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 31R: R31

Inflow Area =		0.815 ac	, Inflow Depth = 1.64"	for 100-yr event
Inflow	=	1.2 cfs @	12.14 hrs, Volume=	0.11 af
Outflow	=	1.2 cfs @	12.14 hrs, Volume=	0.11 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.0 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.6 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.30' @ 12.14 hrs Capacity at bank full= 6.1 cfs 12.0" Diameter Pipe n= 0.012 Length= 30.0' Slope= 0.0250 '/'

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Reach 32R: R32

 Inflow Area =
 11.081 ac, Inflow Depth =
 0.68" for 100-yr event

 Inflow =
 2.5 cfs @ 12.89 hrs, Volume=
 0.63 af

 Outflow =
 2.5 cfs @ 12.86 hrs, Volume=
 0.63 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.6 fps, Min. Travel Time= 0.1 min Avg. Velocity = 5.4 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.40' @ 12.86 hrs Capacity at bank full= 16.1 cfs 18.0" Diameter Pipe n= 0.012 Length= 20.0' Slope= 0.0200 '/'

Reach 33R: R33

Inflow Area =		2.905 ac	, Inflow Depth = 3.53 "	for 100-yr event		
Inflow	=	6.8 cfs @	12.14 hrs, Volume=	0.86 af		
Outflow	=	6.8 cfs @	12.14 hrs, Volume=	0.86 af, Atten= 0%, Lag= 0.4 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 13.9 fps, Min. Travel Time= 0.2 min Avg. Velocity = 5.5 fps, Avg. Travel Time= 0.4 min

Peak Depth= 0.60' @ 12.14 hrs Capacity at bank full= 10.2 cfs 12.0" Diameter Pipe n= 0.012 Length= 144.0' Slope= 0.0700 '/'

Reach 34R: R34

Inflow Area =		0.160 ac	c, Inflow Depth = 3.82	for 100-yr event	
Inflow	=	0.6 cfs @	12.12 hrs, Volume=	0.05 af	
Outflow	=	0.6 cfs @	12.12 hrs, Volume=	0.05 af, Atten= 1%, Lag= 0.3 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.6 fps, Min. Travel Time= 0.2 min Avg. Velocity = 2.4 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.18' @ 12.12 hrs Capacity at bank full= 9.1 cfs 12.0" Diameter Pipe n= 0.012 Length= 76.0' Slope= 0.0555 '/'

Reach 35R: R35

Inflow Area =		0.060 ac	, Inflow Depth = 6.07 "	for 100-yr event	
Inflow	=	0.3 cfs @	12.11 hrs, Volume=	0.03 af	
Outflow	=	0.3 cfs @	12.11 hrs, Volume=	0.03 af, Atten= 1%, Lag= 0.3 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 2.4 fps, Min. Travel Time= 0.2 min Avg. Velocity = 0.9 fps, Avg. Travel Time= 0.5 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.24' @ 12.11 hrs Capacity at bank full= 2.7 cfs 12.0" Diameter Pipe n= 0.012 Length= 26.0' Slope= 0.0050 '/'

Reach 36R: R36

Inflow Area =		0.220 ac	, Inflow Depth = 3.61 "	for 100-yr event		
Inflow	=	0.8 cfs @	12.12 hrs, Volume=	0.07 af		
Outflow	=	0.8 cfs @	12.12 hrs, Volume=	0.07 af, Atten= 0%, Lag= 0.2 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.0 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.1 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.37' @ 12.12 hrs Capacity at bank full= 2.7 cfs 12.0" Diameter Pipe n= 0.012 Length= 22.0' Slope= 0.0050 '/'

Reach 39R: R39

Inflow Area =		1.297 ac	; Inflow Depth = 3.03 "	for 100-yr event	
Inflow	=	3.5 cfs @	12.18 hrs, Volume=	0.33 af	
Outflow	=	3.4 cfs @	12.18 hrs, Volume=	0.33 af, Atten= 3%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.2 fps, Min. Travel Time= 0.6 min Avg. Velocity = 1.6 fps, Avg. Travel Time= 1.5 min

Peak Depth= 0.79' @ 12.18 hrs Capacity at bank full= 4.7 cfs 15.0" Diameter Pipe n= 0.012 Length= 138.0' Slope= 0.0045 '/'

Reach 40R: Design Point #40

 Inflow Area =
 0.510 ac, Inflow Depth =
 0.31" for 100-yr event

 Inflow =
 0.0 cfs @
 12.47 hrs, Volume=
 0.01 af

 Outflow =
 0.0 cfs @
 12.47 hrs, Volume=
 0.01 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 2.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.01' @ 12.47 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Type III 24-hr 100-yr Rainfall=6.50"

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Reach 41R: R41

 Inflow Area =
 6.820 ac, Inflow Depth = 5.44" for 100-yr event

 Inflow =
 33.6 cfs @ 12.14 hrs, Volume=
 3.09 af

 Outflow =
 33.6 cfs @ 12.14 hrs, Volume=
 3.09 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 22.9 fps, Min. Travel Time= 0.1 min Avg. Velocity = 8.4 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.95' @ 12.14 hrs Capacity at bank full= 73.5 cfs 24.0" Diameter Pipe n= 0.012 Length= 176.0' Slope= 0.0900 '/'

Reach 42R: R42

Inflow Area =		9.796 ac, Inflow Depth = 5.43"			for 100-yr event		
Inflow	=	47.6 cfs @	12.13 hrs, V	olume=	4.43 af		
Outflow	-	47.5 cfs @	12.13 hrs, V	olume=	4.43 af,	Atten=0%,	Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 25.8 fps, Min. Travel Time= 0.1 min Avg. Velocity = 9.7 fps, Avg. Travel Time= 0.4 min

Peak Depth= 1.13' @ 12.13 hrs Capacity at bank full= 77.3 cfs 24.0" Diameter Pipe n= 0.012 Length= 218.0' Slope= 0.0995 '/'

Reach 43R: R43

Inflow Area =		10.928 ac, Inflow Depth = 5.34"			for 100-yr event	
Inflow	=	52.0 cfs @	12.14 hrs,	Volume=	4.86 af	
Outflow	=	51.8 cfs @	12.15 hrs,	Volume=	4.86 af, Atten= 0%, Lag= 0.4 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 11.8 fps, Min. Travel Time= 0.2 min Avg. Velocity = 4.7 fps, Avg. Travel Time= 0.5 min

Peak Depth= 2.11' @ 12.14 hrs Capacity at bank full= 50.7 cfs 30.0" Diameter Pipe n= 0.012 Length= 143.0' Slope= 0.0130 '/'

Reach 44R: FLOW FROM POND 3 TO DP10

Inflow Area =		13.926 ac	c, Inflow Depth = 1.3	for 100-yr event		
Inflow	=	15.7 cfs @	12.54 hrs, Volume=	1.52 af		
Outflow	=	15.7 cfs @	12.54 hrs, Volume=	1.52 af, Atten= 0%, Lag= 0.1 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 10.8 fps, Min. Travel Time= 0.0 min Avg. Velocity = 6.6 fps, Avg. Travel Time= 0.0 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.94' @ 12.54 hrs Capacity at bank full= 34.7 cfs 24.0" Diameter Pipe n= 0.012 Length= 15.0' Slope= 0.0200 '/'

Reach 45R: R45

Inflow Area =		10.006 ac	, Inflow Depth = 5.44 "	for 100-yr event		
Inflow	=	48.6 cfs @	12.13 hrs, Volume=	4.54 af		
Outflow	=	48.5 cfs @	12.14 hrs, Volume=	4.54 af, Atten= 0%, L	.ag= 0.3 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 17.8 fps, Min. Travel Time= 0.1 min Avg. Velocity = 7.1 fps, Avg. Travel Time= 0.3 min

Peak Depth= 1.62' @ 12.14 hrs Capacity at bank full= 49.0 cfs 24.0" Diameter Pipe n= 0.012 Length= 128.0' Slope= 0.0400 '/'

Reach 46R: R46

Inflow A	rea =	0.080 ac, Inflow Depth = 5.83"	for 100-yr event
Inflow	=	0.4 cfs @ 12.11 hrs, Volume=	0.04 af
Outflow	=	0.4 cfs @ 12.11 hrs, Volume=	0.04 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.7 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.1 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.15' @ 12.11 hrs Capacity at bank full= 8.6 cfs 12.0" Diameter Pipe n= 0.012 Length= 10.0' Slope= 0.0500 '/'

Reach 47R: R47

Inflow Area =0.080 ac, Inflow Depth =6.07" for 100-yr eventInflow =0.4 cfs @ 12.11 hrs, Volume=0.04 afOutflow =0.4 cfs @ 12.11 hrs, Volume=0.04 af

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.8 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.1 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.15' @ 12.11 hrs Capacity at bank full= 8.6 cfs 12.0" Diameter Pipe n= 0.012 Length= 10.0' Slope= 0.0500 '/'

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Reach 48R: R48

Inflow Area =0.110 ac, Inflow Depth = $5.73^{"}$ for 100-yr eventInflow =0.6 cfs @ 12.11 hrs, Volume=0.05 afOutflow =0.6 cfs @ 12.11 hrs, Volume=0.05 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.3 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.18' @ 12.11 hrs Capacity at bank full= 8.6 cfs 12.0" Diameter Pipe n= 0.012 Length= 15.0' Slope= 0.0500 '/'

Reach 49R: R49

Inflow Ar	rea =	0.100 ac	, Inflow Depth = 6.07 "	for 100-yr event
Inflow	=	0.6 cfs @	12.11 hrs, Volume=	0.05 af
Outflow	=	0.6 cfs @	12.11 hrs, Volume=	0.05 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.2 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.17' @ 12.11 hrs Capacity at bank full= 8.6 cfs 12.0" Diameter Pipe n= 0.012 Length= 15.0' Slope= 0.0500 '/'

Reach 50R: R50

Inflow Area =		0.822 ac, Inflow Depth = 4.02"			for 100-yr event		
Inflow	=	3.1 cfs @	12.16 hrs,	Volume=	0.28 af		
Outflow	=	3.1 cfs @	12.16 hrs,	Volume=	0.28 af,	Atten=0%,	Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 8.3 fps, Min. Travel Time= 0.0 min Avg. Velocity = 3.1 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.48' @ 12.16 hrs Capacity at bank full= 6.7 cfs 12.0" Diameter Pipe n= 0.012 Length= 15.0' Slope= 0.0300 '/'

Reach 51R: R51

Inflow Area =		0.100 ac	; Inflow Depth = $6.07"$	for 100-yr event		
Inflow	=	0.6 cfs @	12.11 hrs, Volume=	0.05 af		
Outflow	=	0.6 cfs @	12.11 hrs, Volume=	0.05 af, Atten= 0%, Lag= 0.1 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.1 fps, Min. Travel Time= 0.0 min Avg. Velocity = 1.9 fps, Avg. Travel Time= 0.1 min

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Peak Depth= 0.19' @ 12.11 hrs Capacity at bank full= 6.7 cfs 12.0" Diameter Pipe n= 0.012 Length= 15.0' Slope= 0.0300 '/'

Reach 52R: From PCB to DMH in road

Inflow Area =		0.118 ac	; Inflow Depth = 6.07	for 100-yr event		
Inflow	=	0.7 cfs @	12.06 hrs, Volume=	0.06 af		
Outflow	=	0.7 cfs @	12.06 hrs, Volume=	0.06 af, Atten= 1%, Lag= 0.1 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.8 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.7 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.25' @ 12.06 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 25.0' Slope= 0.0200 '/'

Reach 53R: to PDMH in road

Inflow Area =		1.505 ac, Inflow Depth = 5.49	9" for 100-yr event
Inflow	(=)	7.4 cfs @ 12.09 hrs, Volume=	0.69 af
Outflow	=	7.4 cfs @ 12.10 hrs, Volume=	0.69 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 12.4 fps, Min. Travel Time= 0.1 min Avg. Velocity = 4.8 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.72' @ 12.09 hrs Capacity at bank full= 8.6 cfs 12.0" Diameter Pipe n= 0.012 Length= 62.0' Slope= 0.0500 '/'

Reach 54R: From PCB to DMH in road

 Inflow Area =
 0.123 ac, Inflow Depth = 6.07"
 for 100-yr event

 Inflow =
 0.8 cfs @ 12.06 hrs, Volume=
 0.06 af

 Outflow =
 0.8 cfs @ 12.06 hrs, Volume=
 0.06 af, Atten= 1%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.9 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.7 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.25' @ 12.06 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 25.0' Slope= 0.0200 '/'

Type III 24-hr 100-yr Rainfall=6.50"

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Reach 55R: PDMH to PDMH

Inflow Area =1.505 ac, Inflow Depth = $5.49^{"}$ for 100-yr eventInflow =7.4 cfs @12.09 hrs, Volume=0.69 afOutflow =7.4 cfs @12.09 hrs, Volume=0.69 af

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 15.9 fps, Min. Travel Time= 0.2 min Avg. Velocity = 6.0 fps, Avg. Travel Time= 0.4 min

Peak Depth= 0.58' @ 12.09 hrs Capacity at bank full= 11.8 cfs 12.0" Diameter Pipe n= 0.012 Length= 149.0' Slope= 0.0940 '/'

Reach 56R: PCB#4 TO PDMH#3

Inflow Area =		0.841 ac	, Inflow Depth = 3.71 "	for 100-yr event		
Inflow	-	2.9 cfs @	12.16 hrs, Volume=	0.26 af		
Outflow	=	2.9 cfs @	12.17 hrs, Volume=	0.26 af, Atten= 1%, Lag= 0.5 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.4 fps, Min. Travel Time= 0.3 min Avg. Velocity = 2.1 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.64' @ 12.17 hrs Capacity at bank full= 3.9 cfs 12.0" Diameter Pipe n= 0.012 Length= 94.0' Slope= 0.0100 '/'

Reach 57R: PDMH#3 TO POND 3

Inflow Area =		1.101 ac	:, Inflow Depth = 3.6	66" for 100-yr event
Inflow	=	3.7 cfs @	12.16 hrs, Volume=	0.34 af
Outflow	=	3.7 cfs @	12.17 hrs, Volume=	0.34 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.5 fps, Min. Travel Time= 0.3 min Avg. Velocity = 2.9 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.61' @ 12.17 hrs Capacity at bank full= 5.5 cfs 12.0" Diameter Pipe n= 0.012 Length= 126.0' Slope= 0.0200 '/'

Reach 58R: PCB#1 TO PDMH#2

Inflow Area =		0.260 ac	; Inflow Depth = 3.51 "	for 100-yr event
Inflow	=	0.9 cfs @	12.12 hrs, Volume=	0.08 af
Outflow	-	0.9 cfs @	12.13 hrs, Volume=	0.08 af, Atten= 2%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.0 fps, Min. Travel Time= 0.4 min Avg. Velocity = 1.5 fps, Avg. Travel Time= 1.0 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.33' @ 12.12 hrs Capacity at bank full= 3.9 cfs 12.0" Diameter Pipe n= 0.012 Length= 89.0' Slope= 0.0100 '/'

Reach 59R: PDMH#2 TO PDMH#3

Inflow Area =		0.260 ac	, Inflow Depth = 3.51"	for 100-yr event
Inflow	=	0.9 cfs @	12.13 hrs, Volume=	0.08 af
Outflow	=	0.9 cfs @	12.14 hrs, Volume=	0.08 af, Atten= 1%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.0 fps, Min. Travel Time= 0.4 min Avg. Velocity = 1.5 fps, Avg. Travel Time= 1.1 min

Peak Depth= 0.33' @ 12.14 hrs Capacity at bank full= 3.9 cfs 12.0" Diameter Pipe n= 0.012 Length= 101.0' Slope= 0.0100 '/'

Reach 60R: PCB to PDMH

Inflow Area =		0.764 ac, Inflow Depth = 5.10"			for 100-yr event			
Inflow	=	3.5 cfs @	12.15 hrs, Volume=		0.32 af			
Outflow	=	3.5 cfs @	12.15 hrs, Volume=	8	0.32 af,	Atten= 0%,	Lag= 0.1 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 14.1 fps, Min. Travel Time= 0.0 min Avg. Velocity = 5.1 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.35' @ 12.15 hrs Capacity at bank full= 13.1 cfs 12.0" Diameter Pipe n= 0.012 Length= 34.0' Slope= 0.1150 '/'

Reach 61R: PCB to PDMH

 Inflow Area =
 0.281 ac, Inflow Depth = 6.00" for 100-yr event

 Inflow =
 1.8 cfs @ 12.06 hrs, Volume=
 0.14 af

 Outflow =
 1.7 cfs @ 12.06 hrs, Volume=
 0.14 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 9.6 fps, Min. Travel Time= 0.2 min Avg. Velocity = 3.4 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.28' @ 12.06 hrs Capacity at bank full= 10.1 cfs 12.0" Diameter Pipe n= 0.012 Length= 125.0' Slope= 0.0690 '/'

Type III 24-hr 100-yr Rainfall=6.50"

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Reach 63R: R63

Inflow Area =0.533 ac, Inflow Depth =0.15" for 100-yr eventInflow =0.3 cfs @12.51 hrs, Volume=0.01 afOutflow =0.3 cfs @12.53 hrs, Volume=0.01 af, Atten= 2%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.5 fps, Min. Travel Time= 0.7 min Avg. Velocity = 1.9 fps, Avg. Travel Time= 1.3 min

Peak Depth= 0.20' @ 12.52 hrs Capacity at bank full= 1.6 cfs 8.0" Diameter Pipe n= 0.011 Length= 142.0' Slope= 0.0120 '/'

Reach 99R: Design Point #50

Inflow Area =		0.330 ac	; Inflow Depth = 0.36 "	for 100-yr event	
Inflow	=	0.0 cfs @	12.44 hrs, Volume=	0.01 af	
Outflow	=	0.0 cfs @	12.44 hrs, Volume=	0.01 af, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 2.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.01' @ 12.44 hrs Capacity at bank full= 1,516.9 cfs 99.0" Diameter Pipe n= 0.012 Length= 1.0' Slope= 0.0200 '/'

Reach 100R: PDMH92 to PDMH90

Inflow Area =		0.764 ac	c, Inflow Depth = 5.04 "	for 100-yr event	
Inflow	-	3.6 cfs @	12.14 hrs, Volume=	0.32 af	
Outflow	=	3.5 cfs @	12.18 hrs, Volume=	0.32 af, Atten= 2%, Lag= 2.9 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.7 fps, Min. Travel Time= 0.3 min Avg. Velocity = 1.9 fps, Avg. Travel Time= 0.8 min

Peak Depth= 1.00' @ 12.15 hrs Capacity at bank full= 3.3 cfs 12.0" Diameter Pipe n= 0.011 Length= 90.0' Slope= 0.0060 '/'

Reach 101R: R101

Inflow A	rea =	0.216 ac, Inflow Dep	th = 5.63"	for 100-yr event	
Inflow	=	1.2 cfs @ 12.11 hrs, V	olume=	0.10 af	
Outflow	=	1.2 cfs @ 12.11 hrs, V	olume=	0.10 af. Atten= 0%. Lag= 0.2 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.9 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.1 fps, Avg. Travel Time= 0.3 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.30' @ 12.11 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 35.0' Slope= 0.0200 '/'

Reach 102R: PDMH94 to PDMH92

Inflow Area =		0.548 ac	, Inflow Depth = 4.80"	for 100-yr event	
Inflow	=	2.5 cfs @	12.12 hrs, Volume=	0.22 af	
Outflow	=	2.5 cfs @	12.15 hrs, Volume=	0.22 af, Atten= 2%, Lag= 1.6 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.2 fps, Min. Travel Time= 0.8 min Avg. Velocity = 1.6 fps, Avg. Travel Time= 2.0 min

Peak Depth= 0.70' @ 12.14 hrs Capacity at bank full= 3.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 194.0' Slope= 0.0050 '/'

Reach 103R: PCB95 to PDMH94

Inflow Area =		0.092 ac, In	nflow Depth = 5.83"	for 100-yr event	
Inflow	=	0.5 cfs @ 12	.11 hrs, Volume=	0.04 af	
Outflow	=	0.5 cfs @ 12	.11 hrs, Volume=	0.04 af, Atten= 0%, Lag= 0.2 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.6 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.3 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.23' @ 12.11 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 26.0' Slope= 0.0100 '/'

Reach 104R: PCB96 to PDMH94

 Inflow Area =
 0.176 ac, Inflow Depth = 5.32" for 100-yr event

 Inflow =
 0.9 cfs @ 12.11 hrs, Volume=
 0.08 af

 Outflow =
 0.9 cfs @ 12.12 hrs, Volume=
 0.08 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.3 fps, Min. Travel Time= 0.2 min Avg. Velocity = 1.5 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.32' @ 12.11 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 45.0' Slope= 0.0100 '/'

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Reach 105R: From PCB to Stormceptor

Inflow Area =0.533 ac, Inflow Depth = 5.00" for 100-yr eventInflow =2.6 cfs @ 12.11 hrs, Volume=0.22 afOutflow =2.6 cfs @ 12.11 hrs, Volume=0.22 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.6 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.0 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.57' @ 12.11 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 13.0' Slope= 0.0100 '/'

Reach 106R: From Stormceptor to Cultecs

Inflow Area =		0.533 ac	; Inflow Depth = $4.99'$	for 100-yr event	
Inflow	=	2.6 cfs @	12.11 hrs, Volume=	0.22 af	
Outflow	=	2.6 cfs @	12.11 hrs, Volume=	0.22 af, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.6 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.0 fps, Avg. Travel Time= 0.0 min

Peak Depth= 0.57' @ 12.11 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 5.0' Slope= 0.0100 '/'

Reach 107R: DMH130 to PDMH94

Inflow Area =		0.280 ac	; Inflow Depth = 4.14	for 100-yr event		
Inflow	=	1.1 cfs @	12.12 hrs, Volume=	0.10 af		
Outflow	=	1.1 cfs @	12.13 hrs, Volume=	0.10 af, Atten= 2%, Lag= 0.7 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.9 fps, Min. Travel Time= 0.3 min Avg. Velocity = 1.4 fps, Avg. Travel Time= 1.0 min

Peak Depth= 0.39' @ 12.12 hrs Capacity at bank full= 3.5 cfs 12.0" Diameter Pipe n= 0.011 Length= 82.0' Slope= 0.0068 '/'

Reach 108R: cistern to FE

Inflow Area =		5.855 ac, Inflow Depth =	4.71"	for 100-yr event		
Inflow	=	25.4 cfs @ 12.14 hrs, Volur	ne=	2.30 af		
Outflow	=	25.3 cfs @ 12.15 hrs, Volum	ne=	2.30 af,	Atten=0%,	Lag = 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.6 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.8 fps, Avg. Travel Time= 0.3 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 1.60' @ 12.15 hrs Capacity at bank full= 34.3 cfs 30.0" Diameter Pipe n= 0.011 Length= 58.0' Slope= 0.0050 '/'

Reach 109R: PDMH80 to cistern

Inflow Area =		1.201 ac	, Inflow Depth = 5.94"	for 100-yr event	
Inflow	=	6.4 cfs @	12.12 hrs, Volume=	0.59 af	
Outflow	=	6.4 cfs @	12.13 hrs, Volume=	0.59 af, Atten= 1%, Lag= 0.5 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.9 fps, Min. Travel Time= 0.2 min Avg. Velocity = 2.7 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.88' @ 12.12 hrs Capacity at bank full= 7.6 cfs 15.0" Diameter Pipe n= 0.011 Length= 104.0' Slope= 0.0100 '/'

Reach 110R: PDMH82 to cistern

Inflow Area =		4.654 ac, Inflow Depth = 4.3	39" for 100-yr event
Inflow	=	19.1 cfs @ 12.14 hrs, Volume=	1.70 af
Outflow	=	19.1 cfs @ 12.15 hrs, Volume=	1.70 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 12.1 fps, Min. Travel Time= 0.1 min Avg. Velocity = 4.3 fps, Avg. Travel Time= 0.4 min

Peak Depth= 1.01' @ 12.15 hrs Capacity at bank full= 37.8 cfs 24.0" Diameter Pipe n= 0.011 Length= 101.0' Slope= 0.0200 '/'

Reach 111R: PCB83 to PDMH82

 Inflow Area =
 0.393 ac, Inflow Depth = 5.21" for 100-yr event

 Inflow =
 2.0 cfs @ 12.11 hrs, Volume=
 0.17 af

 Outflow =
 2.0 cfs @ 12.11 hrs, Volume=
 0.17 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.8 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.4 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.40' @ 12.11 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 20.0' Slope= 0.0200 '/'

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Reach 112R: PDMH84 to PDMH82

 Inflow Area =
 4.261 ac, Inflow Depth = 4.32" for 100-yr event

 Inflow =
 17.3 cfs @ 12.14 hrs, Volume=
 1.53 af

 Outflow =
 17.2 cfs @ 12.15 hrs, Volume=
 1.53 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 9.7 fps, Min. Travel Time= 0.2 min Avg. Velocity = 3.5 fps, Avg. Travel Time= 0.4 min

Peak Depth= 1.10' @ 12.14 hrs Capacity at bank full= 29.3 cfs 24.0" Diameter Pipe n= 0.011 Length= 93.0' Slope= 0.0120 '/'

Reach 113R: PCB85 to PDMH84

Inflow Area =		0.600 ac	; Inflow Depth = 4.54 "	for 100-yr event	
Inflow	=	2.6 cfs @	12.11 hrs, Volume=	0.23 af	
Outflow	-	2.6 cfs @	12.11 hrs, Volume=	0.23 af, Atten= 0%, Lag= 0.0 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.3 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.7 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.46' @ 12.11 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 11.0' Slope= 0.0200 '/'

Reach 114R: PDMH98 to PDMH84

Inflow Area =		3.661 ac	c, Inflow Depth = 4.28 "	for 100-yr event	
Inflow	=	14.9 cfs @	12.14 hrs, Volume=	1.31 af	
Outflow	=	14.8 cfs @	12.15 hrs, Volume=	1.31 af, Atten= 0%, Lag= 0.4 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 15.7 fps, Min. Travel Time= 0.2 min Avg. Velocity = 5.8 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.90' @ 12.14 hrs Capacity at bank full= 17.1 cfs 15.0" Diameter Pipe n= 0.011 Length= 207.0' Slope= 0.0500 '/'

Reach 115R: PDMH81 to PDMH80

Inflow An	rea =	0.640 ac	, Inflow Depth = 6.03 "	for 100-yr event	
Inflow	-	3.4 cfs @	12.13 hrs, Volume=	0.32 af	
Outflow	=	3.4 cfs @	12.13 hrs, Volume=	0.32 af, Atten= 0%, Lag= 0.3 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.0 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.3 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.68' @ 12.13 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 47.0' Slope= 0.0100 '/'

Reach 116R: PCB86 to PDMH81

Inflow An	rea =	0.221 ac, Inflow Depth = 6.07	' for 100-yr event
Inflow	=	1.2 cfs @ 12.11 hrs, Volume=	0.11 af
Outflow	=	1.2 cfs @ 12.11 hrs, Volume=	0.11 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.0 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.2 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.31' @ 12.11 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 21.0' Slope= 0.0200 '/'

Reach 117R: PCB89 to PDMH87

Inflow A	rea =	0.317 ac, Inflow Depth = 6.00"	for 100-yr event
Inflow	=	1.8 cfs @ 12.11 hrs, Volume=	0.16 af
Outflow	=	1.7 cfs @ 12.12 hrs, Volume=	0.16 af, Atten= 2%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.1 fps, Min. Travel Time= 0.5 min Avg. Velocity = 1.9 fps, Avg. Travel Time= 1.2 min

Peak Depth= 0.50' @ 12.12 hrs Capacity at bank full= 2.6 cfs 10.0" Diameter Pipe n= 0.011 Length= 140.0' Slope= 0.0100 '/'

Reach 118R: PDMH87 to PDMH81

 Inflow Area =
 0.419 ac, Inflow Depth = 6.02" for 100-yr event

 Inflow =
 2.3 cfs @ 12.12 hrs, Volume=
 0.21 af

 Outflow =
 2.2 cfs @ 12.14 hrs, Volume=
 0.21 af, Atten= 2%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.4 fps, Min. Travel Time= 0.6 min Avg. Velocity = 2.1 fps, Avg. Travel Time= 1.5 min

Peak Depth= 0.52' @ 12.13 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 190.0' Slope= 0.0100 '/'

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Type III 24-hr 100-yr Rainfall=6.50"

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Reach 119R: PCB70 to PDMH71

 Inflow Area =
 0.523 ac, Inflow Depth = 2.53" for 100-yr event

 Inflow =
 1.3 cfs @ 12.12 hrs, Volume=
 0.11 af

 Outflow =
 1.3 cfs @ 12.14 hrs, Volume=
 0.11 af, Atten= 2%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.7 fps, Min. Travel Time= 0.5 min Avg. Velocity = 1.9 fps, Avg. Travel Time= 1.3 min

Peak Depth= 0.38' @ 12.13 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 146.0' Slope= 0.0100 '/'

Reach 120R: PCB88 to PDMH87

Inflow Ar	rea =	0.102 ac	, Inflow Dep	oth = 6.07"	for 100-yr	event	
Inflow	=	0.6 cfs @	12.11 hrs, V	olume=	0.05 af		
Outflow	=	0.6 cfs @	12.11 hrs, V	olume=	0.05 af,	Atten=0%,	Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.7 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.25' @ 12.11 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 15.0' Slope= 0.0100 '/'

Reach 121R: PCB72 to PDMH71

Inflow A:	rea =	0.310 ac, Inflow Depth = 4.45 "	for 100-yr event
Inflow	=	1.4 cfs @ 12.11 hrs, Volume=	0.11 af
Outflow	. =	1.4 cfs @ 12.11 hrs, Volume=	0.11 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.1 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.30' @ 12.11 hrs Capacity at bank full= 7.3 cfs 12.0" Diameter Pipe n= 0.011 Length= 9.0' Slope= 0.0300 '/'

Reach 122R: PDMH71 to PDMH73

Inflow An	rea =	0.833 ac	c, Inflow Depth = 3.25 "	for 100-yr event
Inflow	=	2.6 cfs @	12.13 hrs, Volume=	0.23 af
Outflow	=	2.6 cfs @	12.14 hrs, Volume=	0.23 af, Atten= 1%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.6 fps, Min. Travel Time= 0.3 min Avg. Velocity = 2.0 fps, Avg. Travel Time= 0.9 min

Type III 24-hr 100-yr Rainfall=6.50"

Peak Depth= 0.57' @ 12.13 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 104.0' Slope= 0.0100 '/'

Reach 123R: PCB74 to PDMH73

Inflow A	rea =	0.400 ac, Inflow Depth = 4.02	" for 100-yr event
Inflow	-	1.6 cfs @ 12.12 hrs, Volume=	0.13 af
Outflow	=	1.6 cfs @ 12.12 hrs, Volume=	0.13 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.4 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.36' @ 12.12 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 25.0' Slope= 0.0200 '/'

Reach 124R: PDMH75 to cistern

Inflow A	rea =	2.428 ac, Inflow Depth = 4.68	" for 100-yr event
Inflow	=	10.7 cfs @ 12.14 hrs, Volume=	0.95 af
Outflow	=	10.7 cfs @ 12.14 hrs, Volume=	0.95 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 17.2 fps, Min. Travel Time= 0.0 min Avg. Velocity = 6.5 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.74' @ 12.14 hrs Capacity at bank full= 11.9 cfs 12.0" Diameter Pipe n= 0.011 Length= 36.0' Slope= 0.0800 '/'

Reach 125R: PCB76 to PDMH75

 Inflow Area =
 0.243 ac, Inflow Depth = 5.00" for 100-yr event

 Inflow =
 1.2 cfs @ 12.11 hrs, Volume=
 0.10 af

 Outflow =
 1.2 cfs @ 12.11 hrs, Volume=
 0.10 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.9 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.1 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.30' @ 12.11 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 28.0' Slope= 0.0200 '/' Prepared by Meridian Engineering, Inc. HydroCAD® 7.00 s/n 000814 © 1986-2003 Applied Microcomputer Systems

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Reach 126R: PDMH77 to PDMH75

Inflow Area =2.185 ac, Inflow Depth = 4.64" for 100-yr eventInflow =9.6 cfs @ 12.14 hrs, Volume=0.85 afOutflow =9.6 cfs @ 12.14 hrs, Volume=0.85 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 13.1 fps, Min. Travel Time= 0.2 min Avg. Velocity = 4.8 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.72' @ 12.14 hrs Capacity at bank full= 15.3 cfs 15.0" Diameter Pipe n= 0.011 Length= 143.0' Slope= 0.0400 '/'

Reach 127R: PCB78 to PDMH77

Inflow A	rea =	0.187 ac	:, Inflow Depth = 5.73°	for 100-yr event
Inflow	=	1.0 cfs @	12.11 hrs, Volume=	0.09 af
Outflow	=	1.0 cfs @	12.11 hrs, Volume=	0.09 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.6 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.0 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.28' @ 12.11 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 9.0' Slope= 0.0200 '/'

Reach 128R: PCB 79 to PDMH68

Inflow Ar	rea =	0.284 ac	, Inflow De	epth = 5.00"	for 100-yr event	
Inflow	÷	1.4 cfs @	12.11 hrs,	Volume=	0.12 af	
Outflow	=	1.4 cfs @	12.11 hrs,	Volume=	0.12 af, Atten= 0%, Lag= 0.0) min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 8.6 fps, Min. Travel Time= 0.0 min Avg. Velocity = 3.0 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.26' @ 12.11 hrs Capacity at bank full= 9.4 cfs 12.0" Diameter Pipe n= 0.011 Length= 12.0' Slope= 0.0500 '/'

Reach 129R: PDMH61 to DMH128

Inflow An	rea =	2.222 ac	, Inflow Depth = 3.86"	for 100-yr event
Inflow	=	8.4 cfs @	12.13 hrs, Volume=	0.72 af
Outflow	=	5.2 cfs @	12.10 hrs, Volume=	0.72 af, Atten= 38%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.4 fps, Min. Travel Time= 0.4 min Avg. Velocity = 3.2 fps, Avg. Travel Time= 0.9 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 1.00' @ 12.05 hrs Capacity at bank full= 5.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 168.0' Slope= 0.0150 '/'

Reach 130R: PDMH64 to PDMH61

Inflow A	rea =	1.155 ac	, Inflow Depth = 3.80"	for 100-yr event
Inflow	=	4.2 cfs @	12.13 hrs, Volume=	0.37 af
Outflow	=	4.2 cfs @	12.13 hrs, Volume=	0.37 af, Atten= 0%, Lag= 0.4 mir

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 8.2 fps, Min. Travel Time= 0.2 min Avg. Velocity = 3.0 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.62' @ 12.13 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 89.0' Slope= 0.0200 '/'

Reach 131R: PCB62 to PDMH61

Inflow Area =		0.461 ac, Inflow Depth = 3.11	" for 100-yr event
Inflow	=	1.4 cfs @ 12.12 hrs, Volume=	0.12 af
Outflow	=	1.4 cfs @ 12.12 hrs, Volume=	0.12 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.8 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.6 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.32' @ 12.12 hrs Capacity at bank full= 6.7 cfs 12.0" Diameter Pipe n= 0.011 Length= 37.0' Slope= 0.0251 '/'

Reach 132R: PDMH68 to PDMH77

Inflow Area =		1.998 ac	, Inflow Depth = 4.54"	for 100-yr event	
Inflow	=	8.7 cfs @	12.13 hrs, Volume=	0.76 af	
Outflow	=	8.6 cfs @	12.14 hrs, Volume=	0.76 af, Atten= 0%, Lag= 0.4 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 8.6 fps, Min. Travel Time= 0.2 min Avg. Velocity = 3.3 fps, Avg. Travel Time= 0.5 min

Peak Depth= 0.95' @ 12.14 hrs Capacity at bank full= 9.4 cfs 15.0" Djameter Pipe n= 0.011 Length= 104.0' Slope= 0.0150 '/'

Type III 24-hr 100-yr Rainfall=6.50"

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Reach 133R: PCB66 to PDMH64

Inflow Area =0.278 ac, Inflow Depth =5.53" for 100-yr eventInflow =1.5 cfs @12.11 hrs, Volume=0.13 afOutflow =1.5 cfs @12.11 hrs, Volume=0.13 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.3 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.34' @ 12.11 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 27.0' Slope= 0.0200 '/'

Reach 134R: PCB65 to PDMH64

Inflow Area =		0.107 ac, Inflow Depth = 3	.61" for 100-yr event
Inflow	=	0.4 cfs @ 12.12 hrs, Volume=	= 0.03 af
Outflow	=	0.4 cfs @ 12.12 hrs, Volume=	= 0.03 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 3.3 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.2 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.21' @ 12.12 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 21.0' Slope= 0.0100 '/'

Reach 135R: PCB63 to PDMH64

Inflow Area =		0.770 ac	, Inflow D	epth = 3.21"	for 100-yr event	
Inflow	=	2.4 cfs @	12.13 hrs,	Volume=	0.21 af	
Outflow	=	2.4 cfs @	12.14 hrs,	Volume=	0.21 af, Atten= 1%	Lag=0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 5.6 fps, Min. Travel Time= 0.3 min Avg. Velocity = 2.1 fps, Avg. Travel Time= 0.7 min

Peak Depth= 0.55' @ 12.13 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 93.0' Slope= 0.0100 '/'

Reach 136R: PDMH69 to PDMH68

Inflow Area =		1.714 ac	, Inflow Depth = 4.46 "	for 100-yr event	
Inflow	=	7.3 cfs @	12.14 hrs, Volume=	0.64 af	
Outflow	=	7.3 cfs @	12.14 hrs, Volume=	0.64 af, Atten = 0%, Lag = 0.1 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 10.1 fps, Min. Travel Time= 0.1 min Avg. Velocity = 3.9 fps, Avg. Travel Time= 0.1 min Prepared by Meridian Engineering, Inc. HydroCAD® 7.00 s/n 000814 © 1986-2003 Applied Microcomputer Systems

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Peak Depth= 0.88' @ 12.14 hrs Capacity at bank full= 6.9 cfs 12.0" Diameter Pipe n= 0.011 Length= 31.0' Slope= 0.0271 '/'

Reach 137R: PCB60 to PDMH61

Inflow Area =		0.606 ac	, Inflow Depth =	4.56"	for 100-yr	event	
Inflow	=	2.8 cfs @	12.11 hrs, Volume	=	0.23 af		
Outflow	=	2.8 cfs @	12.12 hrs, Volume	=	0.23 af,	Atten=0%,	Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 15.8 fps, Min. Travel Time= 0.1 min Avg. Velocity = 5.5 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.27' @ 12.11 hrs Capacity at bank full= 16.8 cfs 12.0" Diameter Pipe n= 0.011 Length= 102.0' Slope= 0.1600 '/'

Reach 138R: PDMH50 to PDMH69

Inflow Area =		1.714 ac	, Inflow Depth = 4.46"	for 100-yr event
Inflow	=	7.4 cfs @	12.13 hrs, Volume=	0.64 af
Outflow	=	7.3 cfs @	12.14 hrs, Volume=	0.64 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 8.4 fps, Min. Travel Time= 0.2 min Avg. Velocity = 3.1 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.83' @ 12.13 hrs Capacity at bank full= 9.4 cfs 15.0" Diameter Pipe n= 0.011 Length= 121.0' Slope= 0.0150 '/'

Reach 139R: PDMH51 to PDMH50

 Inflow Area =
 0.629 ac, Inflow Depth = 5.22" for 100-yr event

 Inflow =
 3.2 cfs @ 12.12 hrs, Volume=
 0.27 af

 Outflow =
 3.1 cfs @ 12.12 hrs, Volume=
 0.27 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.7 fps, Min. Travel Time= 0.2 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.6 min

Peak Depth= 0.58' @ 12.12 hrs Capacity at bank full= 5.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 86.0' Slope= 0.0140 '/'

Type III 24-hr 100-yr Rainfall=6.50"

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Reach 140R: PCB52 to PDMH51

Inflow Area =0.259 ac, Inflow Depth = 5.53" for 100-yr eventInflow =1.4 cfs @ 12.11 hrs, Volume=0.12 afOutflow =1.4 cfs @ 12.11 hrs, Volume=0.12 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 8.5 fps, Min. Travel Time= 0.0 min Avg. Velocity = 3.1 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.26' @ 12.11 hrs Capacity at bank full= 9.4 cfs 12.0" Diameter Pipe n= 0.011 Length= 17.0' Slope= 0.0500 '/'

Reach 141R: PDMH53 to PDMH51

Inflow Area =		0.370 ac, Inflow Depth = 5.00 "			for 100-yr event		
Inflow	=	1.8 cfs @	12.11 hrs, V	olume=	0.15 af		
Outflow	=	1.8 cfs @	12.12 hrs, V	'olume=	0.15 af, Atten= 1%, Lag= 0.5 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.6 fps, Min. Travel Time= 0.3 min Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.9 min

Peak Depth= 0.38' @ 12.12 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 124.0' Slope= 0.0200 '/'

Reach 142R: PDMH54 to PDMH50

Inflow Area =		1.085 ac	, Inflow Dep	oth = 4.03"	for 100-yr event	
Inflow	=	4.3 cfs @	12.13 hrs, V	/olume=	0.36 af	
Outflow	-	4.2 cfs @	12.13 hrs, V	olume=	0.36 af, Atten= 0%, Lag= 0.2 min	

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 12.5 fps, Min. Travel Time= 0.1 min Avg. Velocity = 4.4 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.45' @ 12.13 hrs Capacity at bank full= 10.3 cfs 12.0" Diameter Pipe n= 0.011 Length= 72.0' Slope= 0.0600 '/'

Reach 143R: PDMH55 to PDMH54

Inflow Area =		1.085 ac	c, Inflow Depth = 4.03 "	for 100-yr event		
Inflow	=	4.3 cfs @	12.13 hrs, Volume=	0.36 af		
Outflow	=	4.3 cfs @	12.13 hrs, Volume=	0.36 af, Atten= 0%, Lag= 0.1 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 16.5 fps, Min. Travel Time= 0.1 min Avg. Velocity = 5.8 fps, Avg. Travel Time= 0.2 min

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.36' @ 12.13 hrs Capacity at bank full= 15.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 54.0' Slope= 0.1300 '/'

Reach 144R: PDMH56 to PDMH55

Inflow Area =		1.085 ac, Inflow Depth = 4.03"			for 100-yr event		
Inflow	=	4.3 cfs @	12.12 hrs, Vo	olume=	0.36 af		
Outflow	=	4.3 cfs @	12.13 hrs, Vo	lume=	0.36 af,	Atten=1%,	Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 7.3 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.7 fps, Avg. Travel Time= 0.4 min

Peak Depth= 0.70' @ 12.12 hrs Capacity at bank full= 5.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 65.0' Slope= 0.0151 '/'

Reach 145R: PCB57 to PDMH56

Inflow Area =		0.556 ac, Inflow Depth = 3.11	for 100-yr event		
Inflow	=	1.7 cfs @ 12.12 hrs, Volume=	0.14 af		
Outflow	=	1.7 cfs @ 12.12 hrs, Volume=	0.14 af, Atten= 0%, Lag= 0.0 min		

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.6 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.5 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.37' @ 12.12 hrs Capacity at bank full= 6.0 cfs 12.0" Diameter Pipe n= 0.011 Length= 11.0' Slope= 0.0200 '/'

Reach 146R: PCB58 to PDMH56

 Inflow Area =
 0.529 ac, Inflow Depth = 5.00" for 100-yr event

 Inflow =
 2.6 cfs @ 12.11 hrs, Volume=
 0.22 af

 Outflow =
 2.6 cfs @ 12.12 hrs, Volume=
 0.22 af, Atten= 1%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.6 fps, Min. Travel Time= 0.4 min Avg. Velocity = 2.3 fps, Avg. Travel Time= 1.0 min

Peak Depth= 0.50' @ 12.12 hrs Capacity at bank full= 5.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 146.0' Slope= 0.0150 '/'

Type III 24-hr 100-yr Rainfall=6.50"

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Reach 147R: PCB98 to PDMH63

Inflow Area =0.342 ac, Inflow Depth = 3.21" for 100-yr eventInflow =1.1 cfs @ 12.12 hrs, Volume=0.09 afOutflow =1.1 cfs @ 12.12 hrs, Volume=0.09 af, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.5 fps, Min. Travel Time= 0.1 min Avg. Velocity = 1.7 fps, Avg. Travel Time= 0.4 min

Peak Depth= 0.35' @ 12.12 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 37.0' Slope= 0.0100 '/'

Reach 148R: PCB 67 to PDMH63

Inflow Area =		0.428 ac	, Inflow Depth = 3.21 "	for 100-yr event
Inflow	=	1.4 cfs @	12.12 hrs, Volume=	0.11 af
Outflow	=	1.4 cfs @	12.14 hrs, Volume=	0.11 af, Atten= 2%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 4.8 fps, Min. Travel Time= 0.5 min Avg. Velocity = 1.8 fps, Avg. Travel Time= 1.2 min

Peak Depth= 0.39' @ 12.12 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 131.0' Slope= 0.0100 '/'

Reach 149R: PDMH73 to cistern

Inflow Area =		1.233 ac, Inflow Depth = 3.50"		for 100-yr event
Inflow	=	4.2 cfs @	12.13 hrs, Volume=	0.36 af
Outflow	=	4.2 cfs @	12.13 hrs, Volume=	0.36 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 6.1 fps, Min. Travel Time= 0.0 min Avg. Velocity = 2.3 fps, Avg. Travel Time= 0.1 min

Peak Depth= 0.82' @ 12.13 hrs Capacity at bank full= 4.2 cfs 12.0" Diameter Pipe n= 0.011 Length= 17.0' Slope= 0.0100 '/'

Reach 150R: cistern to PDMH98

Inflow Area =		3.661 ac, Inflow Depth = 4.28	3" for 100-yr event
Inflow	=	14.9 cfs @ 12.14 hrs, Volume=	1.31 af
Outflow	=	14.9 cfs @ 12.14 hrs, Volume=	1.31 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Max. Velocity= 22.4 fps, Min. Travel Time= 0.0 min Avg. Velocity = 8.5 fps, Avg. Travel Time= 0.1 min

h

Type III 24-hr 100-yr Rainfall=6.50"

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Peak Depth= 0.79' @ 12.14 hrs Capacity at bank full= 15.5 cfs 12.0" Diameter Pipe n= 0.011 Length= 51.0' Slope= 0.1351 '/'
INFILTRATION BASIN ANALYSIS

Type III 24-hr 1-yr Rainfall=2.50"

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Pond 1P: CONSTRUCTED WETLANDS BASIN 1

Inflow Area =	= 2.558 a	c, Inflow Depth = 0.61 "	for 1-yr event	
Inflow =	1.4 cfs @	12.18 hrs, Volume=	0.13 af	
Outflow =	0.1 cfs @	14.28 hrs, Volume=	0.07 af, Atten= 92%, Lag= 126.3 min	ı
Primary =	0.0 cfs @	14.28 hrs, Volume=	0.06 af	
Secondary =	0.1 cfs @	14.28 hrs, Volume=	0.01 af	

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 63.02' @ 14.28 hrs Surf.Area= 3,287 sf Storage= 3,521 cf Plug-Flow detention time= 462.4 min calculated for 0.07 af (56% of inflow) Center-of-Mass det. time= 341.4 min (1,177.2 - 835.8)

# Invert	Avail.Sto	orage Storage De	scription	
1 61.80'	7,0	061 cf Custom St	age Data (Pris	matic) Listed below
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
61.80	2,489	0	0	
62.00	2,617	511	511	
63.00	3,275	2,946	3,457	
64.00	3,934	3,605	7,061	
# Routing	Invert	Outlet Devices		A
1 Secondary	63.00'	15.0' long Broad Head (feet) 0.50 Coef. (English) 1	-Crested Recta 1.00 1.50 .72 1.88 1.98	ingular Weir
2 Primary	61.80'	0.5" Vert. Orific	e/Grate X 2.00	C= 0.600
3 Primary	62.10'	0.5" Vert. Orific	e/Grate X 2.00	C= 0.600
4 Primary	62.40'	0.5" Vert. Orific	e/Grate X 2.00	C= 0.600
5 Primary	62.70'	0.5" Vert. Orific	e/Grate X 2.00	C= 0.600
Primary OutFl -2=Orifice/G -3=Orifice/G -4=Orifice/G	ow Max=0 rate (Orifi rate (Orifi rate (Orifi	0.0 cfs @ 14.28 hrs ice Controls 0.0 cfs ice Controls 0.0 cfs ice Controls 0.0 cfs	HW=63.02' (Fr @ 5.3 fps) @ 4.6 fps) @ 3.7 fps) @ 2.6 fps)	ee Discharge)

Pond 2P: DETENTION/INFILTRATION BASIN 2

Inflow Are	a =	11.081 ac	, Inflow D	epth = 0.94"	for 1-yr ev	/ent	
Inflow	=	8.9 cfs @	12.17 hrs,	Volume=	0.87 af		
Outflow	=	3.4 cfs @	12.05 hrs,	Volume=	0.87 af,	Atten= 62%,	Lag= 0.0 min
Primary	=	0.0 cfs @	5.00 hrs,	Volume=	0.00 af		
Secondary	=	3.4 cfs @	12.05 hrs,	Volume=	0.87 af		

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

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Type III 24-hr 1-yr Rainfall=2.50"

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Peak Elev= 66.80' @ 12.55 hrs Surf.Area= 19,239 sf Storage= 6,273 cf Plug-Flow detention time= 10.8 min calculated for 0.87 af (100% of inflow) Center-of-Mass det. time= 10.8 min (845.5 - 834.7)

#	Invert	Avail.Stora	ge Storage De	scription				
1 66.50'		88,413	cf Custom St	Custom Stage Data (Prismatic) Listed below				
Elevatio (fee	n t)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
66.5	0	18,018	0	0				
68.0	0	24,178	31,647	31,647				
70.00		32,588	56,766	88,413				
# Ro	outing	Invert C	outlet Devices					

1 Primary 67.70' 1.00' x 0.50' Vert. Orifice/Grate C= 0.600

2 Secondary 66.50' 3.4 cfs Exfiltration when above invert

Primary OutFlow Max=0.0 cfs @ 5.00 hrs HW=66.50' (Free Discharge)

Secondary OutFlow Max=3.4 cfs @ 12.05 hrs HW=66.55' (Free Discharge) 2=Exfiltration (Exfiltration Controls 3.4 cfs)

Pond 3P: POND 3

Inflow Are	ea =	13.926 ac	, Inflow D	epth = 1.51"	for 1-yr ev	vent
Inflow	=	18.8 cfs @	12.15 hrs,	Volume=	1.75 af	
Outflow	=	4.1 cfs @	11.85 hrs,	Volume=	1.75 af,	Atten= 78%, Lag= 0.0 min
Primary	-	0.0 cfs @	5.00 hrs,	Volume=	0.00 af	
Secondary	=	4.1 cfs @	11.85 hrs,	Volume=	1.75 af	

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 70.08' @ 12.67 hrs Surf.Area= 36,640 sf Storage= 20,817 cf Plug-Flow detention time= 32.9 min calculated for 1.75 af (100% of inflow) Center-of-Mass det. time= 32.9 min (843.9 - 811.0)

#	Invert	Avail.Sto	orage Storage De	Storage Description				
1	69.50'	141,8	99 cf Custom S	Custom Stage Data (Prismatic) Listed below				
Elev	ation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
	69.50 70.00 72.00 73.00	34,771 36,388 43,010 46,412	0 17,790 79,398 44,711	0 17,790 97,188 141,899	21			
#	Routing	Invert	Outlet Devices					
1 2	Primary Secondar	70.80' y 69.50'	5.00' x 1.20' Ver 4.1 cfs Exfiltrati	t. Orifice/Grate C= ion when above inv	ent			

Type III 24-hr 1-yr Rainfall=2.50"

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Primary OutFlow Max=0.0 cfs @ 5.00 hrs HW=69.50' (Free Discharge)

Secondary OutFlow Max=4.1 cfs @ 11.85 hrs HW=69.54' (Free Discharge) -2=Exfiltration (Exfiltration Controls 4.1 cfs)

Pond 100P: Cultecs under front lot

Inflow Are	a =	0.533 ac	, Inflow D	epth = 1.31"	for 1-yr e	vent	
Inflow	=	0.7 cfs @	12.12 hrs,	Volume=	0.06 af		
Outflow	=	0.4 cfs @	12.05 hrs,	Volume=	0.06 af,	Atten= 38%,	Lag= 0.0 min
Discarded	=	0.4 cfs @	12.05 hrs,	Volume=	0.06 af		
Primary	=	0.0 cfs @	5.00 hrs,	Volume=	0.00 af		

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 63.74' @ 12.28 hrs Surf.Area= 470 sf Storage= 149 cf Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= (not calculated)

#	Invert	Avail.Sto	orage Storage De	scription			
1	63.20'	2,7	92 cf Custom SI	age Data (Prisi	natic) Listed	below	
Elev	ation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)			
-	63.20	0	0	0			
16	63.70	406	102	102			
	64.70	2,132	1,269	1,371			
	65.20	846	745	2,115			
	65.70	661	377	2,492			
	66.20	540	300	2,792			
#	Routing	Invert	Outlet Devices				
1	Discarded	1 63.20'	0.4 cfs Exfiltrati	on when above	invert $C = 0.600$		

2 Primary 65.70' 4.0" Vert. Orifice/Grate X 2.00 C= 0.600

Discarded OutFlow Max=0.4 cfs @ 12.05 hrs HW=63.29' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.4 cfs)

Primary OutFlow Max=0.0 cfs @ 5.00 hrs HW=63.20' (Free Discharge)

3/14/2006

Pond 1P: CONSTRUCTED WETLANDS BASIN 1

Inflow Ar	ea =	2.558 ac	:, Inflow Depth = 0.87 "	for 2-yr event
Inflow	=	1.9 cfs @	12.17 hrs, Volume=	0.19 af
Outflow	=	0.7 cfs @	12.57 hrs, Volume=	0.13 af, Atten= 65%, Lag= 24.0 min
Primary	=	0.0 cfs @	12.57 hrs, Volume=	0.06 af
Secondary	y =	0.6 cfs @	12.57 hrs, Volume=	0.06 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 63.08' @ 12.57 hrs Surf.Area= 3,330 sf Storage= 3,758 cf Plug-Flow detention time= 311.3 min calculated for 0.13 af (67% of inflow) Center-of-Mass det. time= 206.2 min (1,038.1 - 831.9)

#	Invert	Avail.Sto	orage Storage De	scription	
1	61.80'	7,0	061 cf Custom S	tage Data (Pris	matic) Listed below
Elev	ation (feet <u>)</u>	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
	61.80	2,489	0	0	
	62.00	2,617	511	511	
	63.00	3,275	2,946	3,457	
	64.00	3,934	3,605	7,061	
#	Routing	Invert	Outlet Devices		
1	Secondary	63.00'	15.0' long Broad	I-Crested Rect	angular Weir
			Head (feet) 0.50	1.00 1.50	
			Coef. (English) 1	72 1.88 1.98	
2	Primary	61.80'	0.5" Vert. Orific	e/Grate X 2.00	C = 0.600
3	Primary	62.10'	0.5" Vert. Orific	e/Grate X 2.00	C = 0.600
4	Primary	62.40'	0.5" Vert. Orific	e/Grate X 2.00	C= 0.600
5	Primary	62.70'	0.5" Vert. Orific	e/Grate X 2.00	C= 0.600
Prin	ary OutFl	ow Max=	0.0 cfs @ 12.57 hrs	HW=63.08' (F	ree Discharge)
1-2	=Orifice/G	rate (Orif	ice Controls 0.0 cfs	s @ 5.4 fps)	8,
-3	=Orifice/G	rate (Orif	ice Controls 0.0 cfs	= @4.7 fps)	
-4	=Orifice/G	rate (Orif	ice Controls 0.0 cfs	(@ 3.9 fps)	
5	=Orifice/C	rate (Orif	ice Controls 0.0 cf	(@ 2.9 fps)	
5	onnego	ince (OIII.		Po)	2 Jac

Secondary OutFlow Max=0.6 cfs @ 12.57 hrs HW=63.08' (Free Discharge) —1=Broad-Crested Rectangular Weir (Weir Controls 0.6 cfs @ 0.5 fps)

Pond 2P: DETENTION/INFILTRATION BASIN 2

Inflow Are	ea =	11.081 ac	, Inflow D	epth = 1.34"	for 2-yr ev	vent	
Inflow	=	13.0 cfs @	12.16 hrs,	Volume=	1.24 af		
Outflow	=	3.4 cfs @	11.95 hrs,	Volume=	1.24 af,	Atten= 74%,	Lag= 0.0 min
Primary	=	0.0 cfs @	5.00 hrs,	Volume=	0.00 af		
Secondary	=	3.4 cfs @	11.95 hrs,	Volume=	1.24 af		

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

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Type III 24-hr 2-yr Rainfall=3.10"

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Peak Elev= 67.09' @ 12.64 hrs Surf.Area= 20,453 sf Storage= 12,508 cf Plug-Flow detention time= 22.3 min calculated for 1.24 af (100% of inflow) Center-of-Mass det. time= 22.3 min (851.4 - 829.0)

#	Invert	Avail.Sto	orage Storage De	Storage Description			
1	66.50'	88,4	13 cf Custom S	Custom Stage Data (Prismatic) Listed below			
Elev	ation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)			
	66.50 68.00 70.00	18,018 24,178 32,588	0 31,647 56,766	0 31,647 88,413			
#	Routing	Invert	Outlet Devices				
1 2	Primary Secondary	67.70' y 66.50'	1.00' x 0.50' Ver 3.4 cfs Exfiltrati	. Orifice/Grate on when above	C= 0.600 invert		

Primary OutFlow Max=0.0 cfs @ 5.00 hrs HW=66.50' (Free Discharge)

Secondary OutFlow Max=3.4 cfs @ 11.95 hrs HW=66.54' (Free Discharge)

Pond 3P: POND 3

Inflow A	rea =	13.926 ac	, Inflow D	epth = 2.03''	for 2-yr e	vent	
Inflow	=	25.4 cfs @	12.15 hrs,	Volume=	2.35 af		
Outflow	=	4.1 cfs @	11.80 hrs,	Volume=	2.35 af,	Atten= 84%,	Lag= 0.0 min
Primary	=	0.0 cfs @	5.00 hrs,	Volume=	0.00 af		
Secondar	v =	4.1 cfs @	11.80 hrs,	Volume=	2.35 af		

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 70.38' @ 12.80 hrs Surf.Area= 37,632 sf Storage= 32,708 cf Plug-Flow detention time= 56.6 min calculated for 2.35 af (100% of inflow) Center-of-Mass det. time= 56.6 min (862.4 - 805.8)

#	Invert	Avail.Sto	orage Storage De	scription					
1	69.50 [,]	. 141,8	399 cf Custom St	age Data (Pris	matic) Listed below				
Elev	ation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)					
	69.50	34,771	0	0					
	70.00	36,388	17,790	17,790					
	72.00	43,010	79,398	97,188					
	73.00	46,412	44,711	141,899					
#	Routing	Invert	Outlet Devices						
1	Primary	70.80'	5.00' x 1.20' Vert	. Orifice/Grate	C = 0.600				
2	Secondary	y 69.50'	4.1 cfs Exfiltrati	cfs Exfiltration when above invert					

3/14/2006

Primary OutFlow Max=0.0 cfs @ 5.00 hrs HW=69.50' (Free Discharge) -1=Orifice/Grate (Controls 0.0 cfs)

Secondary OutFlow Max=4.1 cfs @ 11.80 hrs HW=69.54' (Free Discharge)

Pond 100P: Cultecs under front lot

Inflow Are	ea =	0.533 ac	, Inflow D	epth = 1.83"	for 2-yr ev	vent
Inflow	=	1.0 cfs @	12.12 hrs,	Volume=	0.08 af	
Outflow	=	0.4 cfs @	12.00 hrs,	Volume=	0.08 af,	Atten= 55%, Lag= 0.0 min
Discarded	=	0.4 cfs @	12.00 hrs,	Volume=	0.08 af	
Primary	=	0.0 cfs @	5.00 hrs,	Volume=	0.00 af	

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 63.95' @ 12.39 hrs Surf.Area= 832 sf Storage= 414 cf Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= (not calculated)

#	Invert	Avail.Storage	Storage Description	
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1 63.20' 2,792 cf Custom Stage Data (Prismatic) Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
63.20	0	0	0
63.70	406	102	102
64.70	2,132	1,269	1,371
65.20	846	745	2,115
65.70	661	377	2,492
66.20	540	300	2,792

Routing Invert Outlet Devices

1 Discarded 63.20' 0.4 cfs Exfiltration when above invert

2 Primary 65.70' 4.0" Vert. Orifice/Grate X 2.00 C= 0.600

Discarded OutFlow Max=0.4 cfs @ 12.00 hrs HW=63.29' (Free Discharge)

Primary OutFlow Max=0.0 cfs @ 5.00 hrs HW=63.20' (Free Discharge)

3/14/2006

Pond 1P: CONSTRUCTED WETLANDS BASIN 1

Inflow Area	a =	2.558 ac, Inflow Depth = 1.59	9" for 10-yr event
Inflow	=	3.6 cfs @ 12.16 hrs, Volume=	0.34 af
Outflow	-	3.1 cfs @ 12.25 hrs, Volume=	0.28 af, Atten= 14%, Lag= 5.5 min
Primary	-	0.1 cfs @ 12.25 hrs, Volume=	0.07 af
Secondary :	=	3.0 cfs @ 12.25 hrs, Volume=	0.21 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 63.24' @ 12.25 hrs Surf.Area= 3,433 sf Storage= 4,322 cf Plug-Flow detention time= 178.5 min calculated for 0.28 af (82% of inflow) Center-of-Mass det. time= 104.2 min (927.6 - 823.4)

#	Invert	Avail.Sto	orage Storage De	scription					
1	61.80'	7,0	061 cf Custom S	age Data (Prismatic) Liste	d below				
Elev	ation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)					
-	61.80	2,489	0	0					
	62.00	2,617	511	511					
	63.00	3,275	2,946	3,457					
	64.00	3,934	3,605	7,061					
#	Routing	Invert	Outlet Devices						
1	Secondary	63.00'	15.0' long Broad Head (feet) 0.50 Coef. (English) 1	ad (feet) 0.50 1.00 1.50					
2	Primary	61.80'	0.5" Vert. Orific	e/Grate X 2.00 C= 0.600					
3	Primary	62.10'	0.5" Vert. Orific	e/Grate X 2.00 C= 0.600					
4	Primary	62.40'	0.5" Vert. Orific	e/Grate X 2.00 C= 0.600					
5	Primary	62.70'	0.5" Vert. Orific	e/Grate X 2.00 C= 0.600					
Prin	nary OutFle =Orifice/G =Orifice/G =Orifice/G =Orifice/G	ow Max= rate (Orif rate (Orif rate (Orif rate (Orif	0.1 cfs @ 12.25 hrs fice Controls 0.0 cfs fice Controls 0.0 cfs fice Controls 0.0 cfs fice Controls 0.0 cfs	HW=63.24' (Free Discharg @ 5.7 fps) @ 5.1 fps) @ 4.4 fps) @ 3.5 fps)	e)				
Seco	ondary Out	Flow Ma	x=3.0 cfs @ 12.25 h tangular Weir (V	rs HW=63.24' (Free Discha leir Controls 3.0 cfs @ 0.8 fp	arge) s)				

Pond 2P: DETENTION/INFILTRATION BASIN 2

Inflow Ar	ea =	11.081 ac	, Inflow D	epth = 2.38"	for 10-yr e	event	
Inflow	=	24.0 cfs @	12.16 hrs,	Volume=	2.20 af		
Outflow	=	3.9 cfs @	12.83 hrs,	Volume=	2.20 af,	Atten= 84%,	Lag= 40.1 min
Primary	=	0.5 cfs @	12.83 hrs,	Volume=	0.04 af		
Secondary	/ =	3.4 cfs @	11.75 hrs,	Volume=	2.16 af		

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

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Type III 24-hr 10-yr Rainfall=4.50"

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Peak Elev= 67.98' @ 12.83 hrs Surf.Area= 24,080 sf Storage= 31,142 cf Plug-Flow detention time= 66.1 min calculated for 2.19 af (100% of inflow) Center-of-Mass det. time= 66.0 min (884.9 - 818.9)

#	Invert	Avail.St	orage Storage De	scription				
1	66.50'	88,4	413 cf Custom S	tage Data (Prisn	natic) Listed below			
Elev	vation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
	66.50	18,018	0	0				
	68.00	24,178	31,647	31,647				
	70.00	32,588	56,766	88,413				
#	Routing	Invert	Outlet Devices					
1	Primary	67.70'	1.00' x 0.50' Vert	. Orifice/Grate	C= 0.600			
2	Secondary	66.50'	3.4 cfs Exfiltration	cfs Exfiltration when above invert				

Primary OutFlow Max=0.5 cfs @ 12.83 hrs HW=67.98' (Free Discharge) —1=Orifice/Grate (Orifice Controls 0.5 cfs @ 1.7 fps)

Secondary OutFlow Max=3.4 cfs @ 11.75 hrs HW=66.54' (Free Discharge)

Pond 3P: POND 3

Inflow Ar	rea =	13.926 ac	, Inflow Depth = 3.	29" for 10-yr event
Inflow	=	41.3 cfs @	12.14 hrs, Volume=	3.82 af
Outflow	=	6.5 cfs @	12.78 hrs, Volume=	3.82 af, Atten= 84%, Lag= 38.3 min
Primary	-	2.4 cfs @	12.78 hrs, Volume=	0.23 af
Secondary	y =	4.1 cfs @	11.50 hrs, Volume=	3.59 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 71.08^{\alpha} @ 12.78 hrs Surf.Area= 39,972 sf Storage= 60,763 cf Plug-Flow detention time= 103.3 min calculated for 3.81 af (100% of inflow) Center-of-Mass det. time= 103.1 min (900.1 - 797.0)

#	Invert	Avail.Sto	orage Storage De	scription				
1	69.50'	141,8	199 cf Custom St	tage Data (Pris	matic) Listed below			
Elev	ation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
	69.50	34,771	0	0				
	70.00	36,388	17,790	17,790				
	72.00	43,010	79,398	97,188				
	73.00	46,412	44,711	141,899				
#	Routing	Invert	Outlet Devices					
1	Primary	70.80'	5.00' x 1.20' Vert	. Orifice/Grate	C= 0.600			
2	Secondar	y 69.50'	4.1 cfs Exfiltrati	cfs Exfiltration when above invert				

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Type III 24-hr 10-yr Rainfall=4.50"

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Primary OutFlow Max=2.4 cfs @ 12.78 hrs HW=71.08' (Free Discharge) -1=Orifice/Grate (Orifice Controls 2.4 cfs @ 1.7 fps)

Secondary OutFlow Max=4.1 cfs @ 11.50 hrs HW=69.54' (Free Discharge) 2=Exfiltration (Exfiltration Controls 4.1 cfs)

Pond 100P: Cultecs under front lot

Inflow Are	ea =	0.533 ac	, Inflow D	epth = 3.10''	for 10-yr event
Inflow	=	1.7 cfs @	12.12 hrs,	Volume=	0.14 af
Outflow	=	0.4 cfs @	11.80 hrs,	Volume=	0.14 af, Atten= 73%, Lag= 0.0 min
Discarded	=	0.4 cfs @	11.80 hrs,	Volume=	0.14 af
Primary	=	0.0 cfs @	5.00 hrs,	Volume=	0.00 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 64.65' @ 12.53 hrs Surf.Area= 2,038 sf Storage= 1,301 cf Plug-Flow detention time= 15.4 min calculated for 0.14 af (100% of inflow) Center-of-Mass det. time= 15.4 min (822.9 - 807.6)

t Avail.Sto	orage Storage De	scription			
)' 2,7	792 cf Custom St	age Data (Prisn	natic) Listed belo	ow	
Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)			
0	0	0			
406	102	102			
2,132	1,269	1,371			
846	745	2,115			
661	377	2,492			
540	300	2,792			
Invert	Outlet Devices				
ed 63.20'	0.4 cfs Exfiltration	on when above	invert		
	t Avail.Sto y 2,7 Surf.Area (sq-ft) 0 406 2,132 846 661 540 Invert ed 63.20'	tAvail.StorageStorage Desy $2,792 \text{ cf}$ Custom StSurf.AreaInc.Store (cubic-feet)004061022,1321,269846745661377540300InvertOutlet Devicesed63.20'0.4 cfs Exfiltration	tAvail.StorageStorage Descriptiony2,792 cfCustom Stage Data (PrismSurf.AreaInc.StoreCum.Store(sq-ft)(cubic-feet)(cubic-feet)0004061021022,1321,2691,3718467452,1156613772,4925403002,792InvertOutlet Devicesed63.20'0.4 cfs Exfiltration when above	tAvail.StorageStorage Descriptiony2,792 cfCustom Stage Data (Prismatic) Listed belSurf.AreaInc.StoreCum.Store(sq-ft)(cubic-feet)(cubic-feet)0004061021022,1321,2691,3718467452,1156613772,4925403002,792InvertOutlet Devicesed63.20'0.4 cfs Exfiltration when above invert	Avail.Storage Storage Description v 2,792 cf Custom Stage Data (Prismatic) Listed below Surf.Area Inc.Store Cum.Store (sq-ft) (cubic-feet) (cubic-feet) 0 0 0 406 102 102 2,132 1,269 1,371 846 745 2,115 661 377 2,492 540 300 2,792 Invert Outlet Devices 0 ed 63.20' 0.4 cfs Exfiltration when above invert

2 Primary 65.70' 4.0" Vert. Orifice/Grate X 2.00 C= 0.600

Discarded OutFlow Max=0.4 cfs @ 11.80 hrs HW=63.23' (Free Discharge)

Primary OutFlow Max=0.0 cfs @ 5.00 hrs HW=63.20' (Free Discharge)

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Pond 1P: CONSTRUCTED WETLANDS BASIN 1

Inflow Ar	ea =	2.558 ac	c, Inflow Depth = 2.80°	for 100-yr event
Inflow	=	6.3 cfs @	12.15 hrs, Volume=	0.60 af
Outflow	=	6.1 cfs @	12.20 hrs, Volume=	0.54 af, Atten= 4%, Lag= 2.9 min
Primary	=	0.1 cfs @	12.20 hrs, Volume=	0.07 af
Secondary	v =	6.0 cfs @	12.20 hrs, Volume=	0.47 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 63.38' @ 12.20 hrs Surf.Area= 3,524 sf Storage= 4,819 cf Plug-Flow detention time= 113.0 min calculated for 0.53 af (89% of inflow) Center-of-Mass det. time= 63.5 min (877.4 - 814.0)

#	Invert	Avail.Sto	orage Storage D	Description	
1	61.80'	7,0	061 cf Custom	Stage Data (Pris	matic) Listed below
Elev	ation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
	61.80	2,489	0	0	
	62.00	2,617	511	511	
	63.00	3,275	2,946	3,457	
	64.00	3,934	3,605	7,061	
#	Routing	Invert	Outlet Devices		
1	Secondary	63.00'	15.0' long Broa	d-Crested Rect	angular Weir
			Head (feet) 0.5	0 1.00 1.50	
			Coef. (English)	1.72 1.88 1.98	
2	Primary	61.80'	0.5" Vert. Orif	ice/Grate X 2.00	C= 0.600
3	Primary	62.10'	0.5" Vert. Orif	ice/Grate X 2.00	C= 0.600
4	Primary	62.40'	0.5" Vert. Orif	ice/Grate X 2.00	C= 0.600
5	Primary	62.70'	0.5" Vert. Orif	ice/Grate X 2.00	C= 0.600
Prin	ary OutFl	ow Max=) 1 cfs @ 12.20 hr	s HW=63.38' (F	ree Discharge)
1-2:	=Orifice/G	rate (Orif	ice Controls 0.0 c	fs @ 6.0 fps)	07
-3	=Orifice/G	rate (Orif	ice Controls 0.0 d	fs @ 5.4 fps)	
-4	=Orifice/G	rate (Orif	ice Controls 0.0 c	fs @ 4.7 fps)	
L-5:	=Orifice/G	rate (Orif	ice Controls 0.0 d	fs @ 3.9 fps)	
5		/		1	

Secondary OutFlow Max=6.0 cfs @ 12.20 hrs HW=63.38' (Free Discharge) —1=Broad-Crested Rectangular Weir (Weir Controls 6.0 cfs @ 1.1 fps)

Pond 2P: DETENTION/INFILTRATION BASIN 2

Inflow Are	ea =	11.081 ac	, Inflow D	epth = 4.03"	for 100-yr event
Inflow	-	38.5 cfs @	12.15 hrs,	Volume=	3.72 af
Outflow	=	5.9 cfs @	12.89 hrs,	Volume=	3.72 af, Atten= 85%, Lag= 44.2 min
Primary	=	2.5 cfs @	12.89 hrs,	Volume=	0.63 af
Secondary	=	3.4 cfs @	11.45 hrs,	Volume=	3.09 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

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Type III 24-hr 100-yr Rainfall=6.50"

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Peak Elev= 68.99' @ 12.89 hrs Surf.Area= 28,355 sf Storage= 59,838 cf Plug-Flow detention time= 99.2 min calculated for 3.72 af (100% of inflow) Center-of-Mass det. time= 99.0 min (908.5 - 809.5)

Invert	Avail.Sto	orage Storage De	scription
66.50'	88,4	13 cf Custom St	tage Data (Prismatic) Listed below
ation feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
66.50	18,018	0	0
58.00	24,178	31,647	31,647
70.00	32,588	56,766	88,413
Routing	Invert	Outlet Devices	
Primary	67.70'	1.00' x 0.50' Vert	t. Orifice/Grate C= 0.600
Secondary	y 66.50'	3.4 cfs Exfiltrati	on when above invert
	Invert 66.50' ation (feet) 56.50 58.00 70.00 Routing Primary Secondary	Invert Avail.Sto 66.50' 88,4 ation Surf.Area (feet) (sq-ft) 56.50 18,018 58.00 24,178 70.00 32,588 Routing Invert Primary 67.70' Secondary 66.50'	InvertAvail.StorageStorage Decempone66.50'88,413 cfCustom SationSurf.AreaInc.Store(feet)(sq-ft)(cubic-feet)66.5018,018058.0024,17831,64770.0032,58856,766RoutingInvertOutlet DevicesPrimary67.70'1.00' x 0.50' VertSecondary66.50'3.4 cfs Exfiltration

Primary OutFlow Max=2.5 cfs @ 12.89 hrs HW=68.99' (Free Discharge)

Secondary OutFlow Max=3.4 cfs @ 11.45 hrs HW=66.54' (Free Discharge)

Pond 3P: POND 3

Inflow Ar	ea =	13.926 ac	, Inflow Depth = 5.16 "	for 100-yr event
Inflow	=	64.4 cfs @	12.14 hrs, Volume=	5.99 af
Outflow	=	19.8 cfs @	12.54 hrs, Volume=	5.99 af, Atten= 69%, Lag= 23.9 min
Primary	=	15.7 cfs @	12.54 hrs, Volume=	1.52 af
Secondar	v =	4.1 cfs @	10.80 hrs, Volume=	4.47 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 71.79' @ 12.54 hrs Surf.Area= 42,301 sf Storage= 88,684 cf Plug-Flow detention time= 94.6 min calculated for 5.99 af (100% of inflow) Center-of-Mass det. time= 94.5 min (883.3 - 788.8)

#	Invert	Avail.Sto	orage Storage De	escription	
1	69.50'	141,8	399 cf Custom S	tage Data (Prismatic) Listed below	
Elev	ation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
	69.50	34,771	0	0	
	70.00	36,388	17,790	17,790	
	72.00	43,010	79,398	97,188	
	73.00	46,412	44,711	141,899	
#	Routing	Invert	Outlet Devices		
1	Primary	70.80'	5.00' x 1.20' Ver	t. Orifice/Grate C= 0.600	
2	Secondar	y 69.50'	4.1 cfs Exfiltrat	ion when above invert	

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Prepared by Meridian Engineering, Inc. HydroCAD® 7.00 s/n 000814 © 1986-2003 Applied Microcomputer Systems

Primary OutFlow Max=15.7 cfs @ 12.54 hrs HW=71.78' (Free Discharge) -1=Orifice/Grate (Orifice Controls 15.7 cfs @ 3.2 fps)

Secondary OutFlow Max=4.1 cfs @ 10.80 hrs HW=69.54' (Free Discharge) -2=Exfiltration (Éxfiltration Controls 4.1 cfs)

Pond 100P: Cultecs under front lot

Inflow Are	a =	0.533 ac	, Inflow D	epth = 4.99"	for 100-yr	event	
Inflow	=	2.6 cfs @	12.11 hrs,	Volume=	0.22 af		
Outflow	=	0.8 cfs @	12.51 hrs,	Volume=	0.22 af,	Atten= 71%,	Lag= 23.9 min
Discarded	=	0.4 cfs @	11.70 hrs,	Volume=	0.22 af		
Primary	=	0.3 cfs @	12.51 hrs,	Volume=	0.01 af		

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs Peak Elev= 66.00' @ 12.51 hrs Surf.Area= 587 sf Storage= 2,674 cf Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= (not calculated)

#	mvert	Avan.Sit	hage Storage De	scription	1101	
1	63.20'	2,7	92 cf Custom St	age Data (Pris	Dat	(Pris
Elevatio (fee	n t)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Cum	Store feet)
63.2	20	0	0	0		0
63.7	0	406	102	102		102
64.7	0	2,132	1,269	1,371		,371
65.2	0	846	745	2,115		2,115
65.7	0	661	377	2,492		2,492
66.2	0	540	300	2,792		2,792
# Rc	outing	Invert	Outlet Devices			

1 Discarded 63.20' **0.4 cfs Exfiltration when above invert**

2 Primary 65.70' 4.0" Vert. Orifice/Grate X 2.00 C= 0.600

Discarded OutFlow Max=0.4 cfs @ 11.70 hrs HW=63.26' (Free Discharge)

Primary OutFlow Max=0.3 cfs @ 12.51 hrs HW=66.00' (Free Discharge)

APPENDIX

STORMWATER TREATMENT CALCULATIONS (100-YEAR ANALYSIS)

STORMWATER TREATMENT CALCULATIONS

Constructed Wetlands Basin #1:

35,153 S.F.(Impervious Areas) x 1"(as required by Planning Board Policy) = 2,929 C.F. Required

2,946 C.F. Provided: (Storage from Elevation 61.8 to Elevation 62.8)

Detention/Infiltration Basin #2:

282,443 S.F.(Impervious Areas) x 1"(as required by Planning Board Policy) = 23,536 C.F. Required

24,900 C.F. Provided: (Storage from Elevation 66.5 to Elevation 67.7)

Infiltration Basin #3:

445,719 S.F.(Impervious Areas) x 1"(as required by Planning Board Policy) = 36,844 C.F. Required

50,200 C.F. Provided: (Storage from Elevation 69.5 to Elevation 70.8)

Infiltration Basin #100:

12,937 S.F.(Impervious Areas) x 1"(as required by Planning Board Policy) = 1,078 C.F. Required

2,145 C.F. Provided: (Storage from Elevation 63.2 to Elevation 65.7)

GROUNDWATER RECHARGE CALCULATIONS

GROUNDWATER RECHARGE CALCULATIONS

Total Groundwater Recharge Required:

336,930 S.F. (impervious areas) x .0333 (A-soils) = 11,220 C.F. Required

13,440 S.F. (impervious areas) x .0208 (B-soils) = 280 C.F. Required

426,530 S.F. (impervious areas) x .00833 (C-soils) = 3,540 C.F. Required

Total Required: 15,040 C.F. Required

Total Groundwater Recharge Provided:

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Detention/Infiltration Basin #2 is designed to recharge 24,900 C.F. of stormwater runoff.

Detention/Infiltration Basin #3 is designed to recharge 50,200 C.F. of stormwater runoff.

Detention/Infiltration Basin #100 is designed to recharge 2,145 C.F. of stormwater runoff.

Total Provided: 24,900 + 50,200 + 2,145 = 77,245 C.F.

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EXFILTRATION CALCULATIONS

DETENTION/INFILTRATION BASIN #2 EXFILTRATION CALCULATIONS

18,018 S.F. x 1.91 x 10⁻⁴ FT./SEC. = 3.4 CFS (Bottom)

DETENTION/INFILTRATION BASIN #3 EXFILTRATION CALCULATIONS

21,465 S.F. x 1.91 x 10⁻⁴ FT./SEC. = 4.1 CFS (Bottom)

DETENTION/INFILTRATION BASIN #100 EXFILTRATION CALCULATIONS

2,005 S.F. x 1.91 x 10⁻⁴ FT./SEC. = 0.4 CF/SEC

* All exfiltration rates from Stormwater Management Policy Supplemental Guidance Technical Bulletin 00-01: Guidance for Implementing Stormwater Standard #3 (Recharge to groundwater).

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SIZING OF CATCH BASIN GRATES (100-YEAR STORM EVENT)

SIZING OF CATCH BASIN GRATES (100-YEAR STORM EVENT)

S.C. Flow	CB #	Q In (CFS)	Size of Grate Needed
SC 59	PCB 97	2.6 CFS	Single
SC 60	PCB 93	1.2 CFS	Single
SC 70	PCB 58	2.6 CFS	Single
SC 71	PCB 57	1.7 CFS	Single
SC 72	PCB 53	1.8 CFS	Single
SC 73	PCB 52	1.4 CFS	Single
SC 74	PCB 60	2.8 CFS	Single
SC 75	PCB 67	1.4 CFS	Single
SC 76	PCB 65	0.4 CFS	Single
SC 77	PCB 79	1.4 CFS	Single
SC 78	PCB 78	1.0 CFS	Single
SC 79	PCB 62	1.4 CFS	Single
SC 80	PCB 66	1.5 CFS	Single
SC 81	PCB 76	1.2 CFS	Single (Use Double)
SC 82	PCB 70	1.3 CFS	Single
SC 83	PCB 72	1.4 CFS	Single
SC 84	PCB 74	1.6 CFS	Single
SC 85	PCB 89	1.8 CFS	Single
SC 86	PCB 85	0.8 CFS	W/SC 88
SC 87	PCB 83	2.0 CFS	Single
SC 88	PCB 85	1.8+0.8=2.6	Single
SC 89	PCB 86	1.2	Single
SC 90	PCB 81	3.1	Single
SC 91	PCB 95	0.5	Single
SC 92	PCB 96	0.9	Single
SC 93	PCB 98	1.1	Single
SC 94	PCB 88	0.6	Single

Single Grate: 3.86 CFS (Allowable Q with .1' head) Double Grate: 7.73 CFS (Allowable Q with .1' head) See Calculations Provided

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CALCULATION FOR Q ALLOWABLE ONTO C.B. GRATE

C.B. DESIGN

D

Q = cA 2gh x 2/3 c = 0.6 g = 32.2 h = Allowable Head (0.1')A = Pass Area

CB Neenah R3405 or B (B 3 sided flange to be used as Double Brace)

Pass Areas:

R3405	= 1.5 S.F.
R3405B(Double Basin)	= 3.0 S.F.
Q Allowable Single	= 3.86 CFS
Q Allowable Double	= 7.73 CFS

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APPENDIX

INSPECTION AND MAINTENANCE PROGRAM FOR A PROPOSED STORMWATER MANAGEMENT SYSTEM located at ASSESSOR'S MAP 7, LOTS 7, 8, 9, 10A, 10-2, 10-8-1 ROWLEY, MASSACHUSETTS

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Submitted to:

Rowley Planning Board Town Hall Annex 39 Central Street Rowley, Massachusetts 01969

Prepared by:

Meridian Associates, Inc. 152 Conant Street Beverly, Massachusetts 01915 (978) 299-0447

January 12, 2000 (Revised: April 20, 2000) (Revised: May 1, 2000) (Revised: October 4, 2005) (Revised: March 15, 2006)

Project Description

Construction of 2,200' road for seven lot commercial subdivision and associated stormwater management facility, parking lot, subsurface sewerage disposal system, and other associated utilities and grading.

Responsible Party

Gateway II Trust of 1997 239 Western Avenue Essex, Massachusetts 01923 Contacts: Jay & Joe Coughlin (978) 768-6929

<u>Short Term Planned Erosion and Sedimentation Control Measures</u> (During Construction Activities)

Haybales

Staked Haybales are proposed to be installed, as shown on the site plan, around the perimeter and upgradient of the bordering vegetated wetlands. The siltation barrier will be installed prior to the commencement of any work on-site and in accordance with the design plans. An additional supply of haybales shall be on-site to replace and/or repair haybale fencing that is disturbed. The lines of haybales shall be inspected and maintained on a weekly basis during construction.

Storm Drain Inlet Protection

A temporary storm inlet protection filter will be placed around all catchbasin inlets. The purpose of the filter is to prevent the inflow of sediments into the closed drainage system. The filter shall remain in place until a permanent vegetative cover is established and the transport of sediment is no longer visibly apparent. The filter shall be inspected and maintained on a weekly basis and after every storm event.

Surface Stabilization

The surface of all disturbed areas shall be stabilized during and after construction. Temporary measures shall be taken during construction to prevent erosion and siltation. All disturbed slopes will be stabilized with a permanent vegetative cover. Some or all of the following measures will be utilized on this project as conditions may warrant.

- a. Temporary Seeding
- b. Temporary Mulching
- c. Permanent Seeding
- d. Placement of Sod
- e. Hydroseeding
- f. Placement of Hay
- g. Placement of Jute Netting

Inspection and Maintenance of Deep Sump Catch Basins

The performance of the catch basins shall be checked after every major storm event during construction. Sediment shall be removed if accumulation is within 24" of the outlet pipe.

Long Term Inspection and Maintenance Measures (Post Construction)

Long Term Inspection and Maintenance/Infiltration Basins

As infiltration basins are prone to failure due to the clogging of porous soils, it is imperative that aggressive maintenance plans and schedules be developed and implemented for these BMP's.

Preventive maintenance should be performed at least twice a year, and ideally sediment should be removed from pretreatment BMP's after every major storm event.

Once the basin has gone online, inspections should occur after every major storm event for the first few months to ensure proper stabilization and function. Attention should be paid to how long water remains standing in the basin after a storm; standing water within the basin 48 to 72 hours after a storm indicates that the infiltration capacity may have been overestimated. Factors responsible for clogging (such as upland sediment erosion, excessive compaction of soils and low spots) should be repaired immediately.

Thereafter, the infiltration basin should be inspected at least twice per year. Important items to check for include: differential settlement, cracking, erosion, leakage, or tree growth on the embankments, condition of riprap, sediment accumulation and the health of the turf.

At least twice a year, the buffer area, side slopes and basin bottom should be mowed. Grass clippings and accumulated organic matter should be removed to prevent the formation of an impervious organic mat. Trash and debris should be removed at this time. Deep tilling can be used to break up a clogged surface area. Any tilled areas should be revegetated immediately.

Sediment should be removed from the basin as necessary. Removal procedures should not take place until the floor of the basin is thoroughly dry. Light equipment, which will not compact the underlying soil, should be used to remove the top layer. The remaining soil should be deeply tilled, and revegetated as soon as possible. Pretreatment devices associated with basins should be inspected and cleaned at least twice a year, and ideally every other month.

Maintenance/Sediment Traps (Forebays)

Maintenance is required for the proper operation of sediment traps. Traps should be cleaned four (4) times a year and inspected monthly. All sediments and hydrocarbons should be handled properly and disposed in accordance with local, state and federal guidelines and regulations.

Constructed Stormwater Wetlands Basin

Stormwater wetlands require considerable routine maintenance, but do not require large, infrequent sediment removal, unlike conventional pond systems that require relatively minor routine maintenance and expensive sediment removal at infrequent intervals.

Careful observation of the system over time is required. In the first three years after construction, twice a year inspections are needed during both the growing and non-growing season. Data gathered during these inspections should be recorded, mapped and assessed. The following observations should be made during the inspections:

- Types and distribution of dominant wetland plants in the marsh;
- The presence and distribution of planted wetland species; presence and distribution of volunteer wetland species; signs that volunteer species are replacing the planted wetland species;
- Percentage of unvegetated standing water (excluding the deep water cells which are not suitable for emergent plant growth);
- The maximum elevation and the vegetative condition in this zone if the design elevation of the normal pool is being maintained for wetlands with extended zones.
- Stability of the original depth zones and the microtopographic features;
- Accumulation of sediment in the forebay and micropool; and
- Survival rate of plants in the wetland buffer.

Regulating the sediment input to the wetland is the priority maintenance activity. The majority of sediments should be trapped and removed before they reach the wetlands either in the forebay or in the pond component. Gradual sediment accumulation in the wetland results in reduced water depth and changes in the growing conditions for the emergent plants. Furthermore, sediment removal within the wetland can destroy the wetland plant community.

Shallow marsh and extended detention wetland designs include forebays to trap sediment before reaching the wetland. These forebays should be cleaned out every year.

Pond/wetland system designs do not include forebays as the wet pond itself acts as an oversized forebay. Sediment cleanout of pond/wetland systems is needed every 10 years.

Debris and Litter Removal

Trash may collect in the BMP's, potentially causing clogging of the facilities. All debris and litter shall be removed when necessary, and after each storm event.

Erosion Control

Eroded sediments can adversely affect the performance of the stormwater management system. Eroding or barren areas should be immediately re-vegetated.

Inspection and Maintenance of Catch Basins

Catch basins and grease/oil separators shall be inspected annually and if necessary, any maintenance shall be performed so that they function as designed. The catch basins shall be inspected on a yearly basis, shall be cleaned four (4) times a year and when the sediment in the bottom of the sump reaches twelve (12") inches below the bottom of the grease/oil separators. Inspection of catch basins, at a minimum, shall be performed during the last week of April and first week of October each year.

Street/Parking Area Sweeping

Sweeping shall be conducted twice a year in March and October. The period immediately following winter snowmelt when roads and other accumulated sediment are washed off shall be swept. Conventional mechanical sweepers or vacuum type sweepers demonstrate higher removal efficiencies and shall be implemented.

Snow Storage Areas

The snow storage areas shall be inspected every year (simultaneously with the catch basin structures) to evaluate sediment accumulation within the snow storage areas. The areas shall be inspected for debris and litter and the vigor and density of the grass surface. All sediment and debris shall be removed as part of the annual inspection. Bare spots shall be seeded as necessary to re-establish vegetation.

Catch Basin Stenciling

All catch basins on site shall be stenciled utilizing white paint to state "NO DUMPING". Stenciling shall be maintained on an annual basis or as needed.

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STORMWATER MANAGEMENT CONSTRUCTION PHASE

INSPECTION SCHEDULE AND EVALUATION CHECKLIST

PROJECT LOCATION: Forest Ridge - Rowley, Massachusetts

Date	Innadeur	ra unspected	Practice (yes/no)	Required Inspection Frequency if BMP	Comments	Recommendation	Follow-up Inspection Required
		Haybale and Silt Fence	No				() () () () () () () () () () () () () (
		Proposed Catch Basin	Yes	Weekly and After Maior Storm Events			
		Detention Pond	Yes	After Major Storm Events			
		Soil Stockpile Area	No				

- Refer to the Massachusetts Stormwater Management, Volume Two: Stormwater Technical Handbook (March 1997) for recommendations regarding frequency for inspection and maintenance of specific BMP's. (1)
- (2) Inspections to be conducted by a qualified professional such as an environmental scientist or civil engineer.

Limited or no use of sodium chloride salts, fertilizers or pesticides recommended.

Other notes: (Include deviations from: Con. Comm. Order of Conditions, PB Approval, Construction Sequence and Approved Plan).

Stormwater Control Manger:

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STORMWATER MANAGEMENT POST-CONSTRUCTION PHASE

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INSPECTION SCHEDULE AND EVALUATION CHECKLIST

PROJECT LOCATION: Forest Ridge, Rowely, Massachusetts

Date	Innodent	vi ca mspecien	Best Management Practice (yes/no)	Kequired Inspection Frequency if BMP	Comments	Recommendation	Follow-up Inspection Required
		Haybale and Silt Fence	No				(yes/no)
		Proposed Catch Basin	Yes	4 Per Year April (1). October (1)			
		Detention Pond	Yes	1 Per Year and Major Storms >1"			
		Soil Stockpile Area	No				

- Refer to the Massachusetts Stormwater Management, Volume Two: Stormwater Technical Handbook (March 1997) for recommendations regarding frequency for inspection and maintenance of specific BMP's. (1)
- (2) Inspections to be conducted by a qualified professional such as an environmental scientist or civil engineer.

Other notes: (Include deviations from: Con. Comm. Order of Conditions, PB Approval, Construction Sequence and Approved Plan). Limited or no use of sodium chloride salts, fertilizers or pesticides recommended.

Stormwater Control Manger:

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Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands Stormwater Management Form Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. ---

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



return key.

Note:

This November 2000 version of the Stormwater B. Management Form supersedes earlier versions ncluding those Jontained in DEP's Stormwater Handbooks.

Property Information

The proposed project is: 1.

a. New development	🛛 Yes	□ No
b. Redevelopment	🗌 Yes	🗌 No
c Combination	□ Yes	

(If yes, distinguish redevelopment components from new development components on plans).

Stormwater runoff to be treated for water quality is based on the following calculations: 2

a. X 1 inch of runoff x total impervious area of post-development site for discharge to critical areas (Outstanding Resource Waters, recharge areas of public water supplies, shellfish growing areas, swimming beaches, cold water fisheries).

b. 0.5 inches of runoff x total impervious area of post-development site for other resource areas.

Stormwater Management Standards

DEP's Stormwater Management Policy (March 1997) includes nine standards that are listed on the following pages. Check the appropriate boxes for each standard and provide documentation and additional information when applicable.

Standard #1: Untreated stormwater

a. X The project is designed so that new stormwater point discharges do not discharge untreated stormwater into, or cause erosion to, wetlands and waters.

Standard #2: Post-development peak discharges rates

- a. Not applicable project site contains waters subject to tidal action.
- Post-development peak discharge does not exceed pre-development rates on the site at the point of discharge or downgradient property boundary for the 2-yr, 10-yr, and 100-yr, 24-hr storm.
- b. Without stormwater controls
- c. With stormwater controls designed for the 2-yr, and 10-yr storm, 24-hr storm.
- d. The project as designed will not increase off-site flooding impacts from the 100-yr, 24-hr storm.



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands Stormwater Management Form Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Stormwater Management Standards (cont.)

Standard #3: Recharge to groundwater

Amount of impervious area (sq. ft.) to be infiltrated:

776,900± a. square feet

Volume to be recharged is based on:

b. X The following Natural Resources Conservation Service hydrologic soils groups (e.g. A, B, C, D, or UA) or any combination of groups:

43.37%	A	54.9%	С
1. % of impervious area	2. Hydrologic soil group	3. % of impervious area	4. Hydrologic soil group
1.73%	В		
5. % of impervious area	6. Hydrologic soil group	7. % of impervious area	8. Hydrologic soil group

c. Site specific pre-development conditions:

1. Recharge rate

2. Volume

d. Describe how the calculations were determined:

Areas calculated from soils maps.

e. List each BMP or nonstructural measure used to meet Standard #3 (e.g. dry well, infiltration trench). Infiltration Basins

Does the annual groundwater recharge for the post-development site approximate the annual recharge from existing site conditions?

f 🛛 Yes 🗌 No

Standard #4: 80% TSS Removal

a. The proposed stormwater management system will remove 80% of the post-development site's average annual Total Suspended Solids (TSS) load.

b. Identify the BMP's proposed for the project and describe how the 80% TSS removal will be achieved.

Deep Sump Catch Basins, Infiltration Basins, Constructed Stormwater Wetlands,

Sediment Forebays



See Stormwater

Policy Handbook Vol. I, page I-23,

for land uses of

high pollutant loading (see Instructions). Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands Stormwater Management Form Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Stormwater Management Standards (cont.)

c. If the project is redevelopment, explain how much TSS will be removed and briefly explain why 80% removal cannot be achieved. N/A

Standard #5: Higher potential pollutant loads

Does the project site contain land uses with higher potential pollutant loads

a. Yes No b. If yes, describe land uses:

c. Identify the BMPs selected to treat stormwater runoff. If infiltration measures are proposed, describe the pretreatment. (Note: If the area of higher potential pollutant loading is upgradient of a critical area, infiltration is not allowed.)

N/A

Standard #6: Protection of critical areas

See Stormwater Policy Handbook Vol. I, page I -25, for critical areas (see Instructions).

Will the project discharge to or affect a critical area?

a. 🛛 Yes 🗌 No

b. If yes, describe areas:

Tributary to the Mill River a designated ORW

c. Identify the BMPs selected for stormwater discharges in these areas and describe how BMPs meet restrictions listed on pages I-27 and I-28 of the Stormwater Policy Handbook – Vol. I:

Deep Sump Catch Basins, Infiltration Basins, Constructed Stormwater Wetlands and Sediment

Forebays

7



components of redevelopment

projects which plan to develop previously

undeveloped areas do not fall under the scope of Standard 7.

Note:

Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands Stormwater Management Form Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Stormwater Management Standards (cont.)

Standard #7: Redevelopment projects

Is the proposed activity a redevelopment project?

a. Yes X No b. If yes, the following stormwater management standards have been met:

c. The following stormwater standards have not been met for the following reasons:

All standards met.

d. The proposed project will reduce the annual pollutant load on the site with new or improved stormwater control.

Standard #8: Erosion/sediment control

a. X Erosion and sediment controls are incorporated into the project design to prevent erosion, control sediments, and stabilize exposed soils during construction or land disturbance.

Standard #9: Operation/maintenance plan

a. An operation and maintenance plan for the post-development stormwater controls have been developed. The plan includes ownership of the stormwater BMPs, parties responsible for operation and maintenance, schedule for inspection and maintenance, routine and long-term maintenance responsibilities, and provision for appropriate access and maintenance easements extending from a public right-of-way to the stormwater controls.

Warch 15, 2006
c. Date

d. Plan/Title

e. Date



Massachusetts Department of Environmental Protection Bureau of Resource Protection - Wetlands Stormwater Management Form Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

C. Submittal Requirements

Online Users:

Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department. DEP recommends that applicants submit this form, as well as, supporting documentation and plans, with the Notice of Intent to provide stormwater management information for Commission review consistent with the wetland regulations (310 CMR 10.05 (6)(b)) and DEP's Stormwater Management Policy (March 1997). If a particular stormwater management standard cannot be met, information should be provided to demonstrate how equivalent water quality and water quantity protection will be provided. DEP encourages engineers to use this form to certify that the project meets the stormwater management standards as well as acceptable engineering standards. For more information, consult the Stormwater Management Policy.

D. Signatures

John Coughlin Applicant Name Date MARCH 2001 Signature CRW3 Charles E. Wear, III for Meridian Associates, Inc. Representative (if any) Date 111 MARCH 2006 Signature

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DEP Stormwater Management Workshop

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DEP Stormwater Management Workshop

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DEP Stormwater Management Workshop

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BUILT IMPERVIOUS ARETA (123,7635F) UNCONSTRUCTED IMPERVIOUS AREA IMPERVIOUS AREA TO BE REMOVED (31, 1685F) APPROX CIRCLE RELOCATION (14,3115F) APPROX ACCESS ROUAD (13,2515F) (EXISTING IMPERVIOUS) SUBCHTCHMENTS ROUTED TO POND 3 TOTAL IMPERVIOUS AREA TO POND 3= 445,7195F - BUILT IMPERVIONS AREA - ALLESS ROAD + IMPERVIOUS AREA TBR - LIRLLE RELOCATION = (325,562 SF) - PROPOSED IMP. AREA -290,1678F ASSESSOR'S MAP 7 LOTS 7, 8, 9, 10A, 10-2 & 10-8 POST-DEVELOPMENT DRAINAGE PLAN ROWLEY, MASSACHUSETTS (ESSEX COUNTY) PREPARED FOR GATEWAY II TRUST OF 1997 DATE: NOVEMBER 7, 2005 DIAN ASSOCIATES, INC. 69 MILK STREET, SUITE 302 BEVERLY, MASSACHUSETTS 01915 WESTBOROUGH, MASSACHUSETTS 01581 TELEPHONE: (508) 871-7030 WWW.MERIDIANASSOC.COM PROJECT No. 3250