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## Hillside Center for Sustainable Living

**Newburyport, Massachusetts** 

#### **STORMWATER REPORT**



December 28, 2015

#### WEJTCOTT JITE JERVICES

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#### STORMWATER REPORT

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#### HYDROLOGICAL ANALYSIS

#### Hillside Center for Sustainable Living

#### A. Summary

Hillside Center for Sustainable Living will be a planned residential community on 4.77 acres (owned land and right of way). The site will include:

- A Common House
- A Greenhouse for residents
- A Recycling/Mechanics Bard
- Solar Canopies over parking spaces
- A Silo
- Residential Housing of 49 Units in 9 buildings. Seven of the buildings are combined into groups of 2.

The numbering and layout of the buildings can be seen on Sheet C-2, Layout Plan.

(For a quick summary of the Runoff Rates, see the last page of this Narrative).

#### B. Site – Existing Conditions (Pre-Development)

The site is a former junk yard with a barn and a steel shed. All former foreign junk material have been removed. The barn and steel shed remain; but will be removed as part of the new work. An adjacent parcel is an existing 2 family house that will remain, and be renovated.

The site is bordered to the north by existing residential housing, served off Pond Street by Cottage Court and Hillside Avenue; to the east by existing housing, and Highland Cemetery; to the south by Highland Cemetery; and to the west by U.S. Route One.

#### a. Soils

The site has been mapped by the USDA NRCS as having:

Hinckley & Windsor loamy sand, HSG A Suffield silt loam, HSG C Sciantic silt loam, HSG D Hinckley loamy sand, HSG A

In addition, 26 test pits were dug throughout the site. These tests confirm the USDA mapping. The USDA soil groups were used to determine "CN"

#### Hillside Center for Sustainable Living

values for the Stormwater Water Quality Volumes, Annual Recharge Volumes, and Pre and Post Development runoff rates.

#### b. Pre-Development Watersheds

The debris of the former junk yard has been removed, and the site is generally unpaved, with informal gravel drives. It is largely unvegetated, except at its peripheries, and the future YWCA parcel.

In the Pre-development condition, the site is comprised of six sub-watersheds. (See Pre-Development Watershed Plan in rear of Report). The majority of the site drains in all directions from the higher periphery to low areas in the middle. These low areas pond, and then overflow to one larger low area which is drained by a culvert pipe. This culvert also picks up drainage from the drain system on Cottage Court. The culvert continues under the property of 12-14 Cottage Court (part of the proposed development) where it picks up drainage from an on-site catchbasin. The culvert then continues eastward under Route One to an outlet that our surveyors are now attempting to better define. (MassHighway, the owners of Route One, have no information on the culvert).

This site is part of the Little River watershed, which flows south to the Parker River, and thence the Atlantic Ocean.

#### C. Site – Proposed Conditions (Post-Development)

Access to the site will be as follows:

- a. At the east, and high side of the site, Hillside Ave. will be extended from its current terminus as a private drive as far as the new Barn.
- b. At the west, and low side of the site, Cottage Court will be extended from its current terminus through the Right-of-Way that exists all the way to Route One. It will be necked down part way to signify a oneway portion, so that major traffic cannot use Cottage Court as a cutthourgh. The new site's largest parking area will be serviced from a new curb cut on Route One. This parking area will also be the site of a series of solar arrays.
- c. A wood plank emergency access "Firemen's Drive" will connect the lower Cottage Court with the higher Hillside Ave. This drive will not be open to general traffic.
- d. A Common House with a Silo and Terrace will be at the center of the site, with access from both Cottage Court and Hillside Ave. There will be a Greenhouse adjacent to the Common House, with additional emergency access from the new small parking lot off Cottage Court.

These can be seen on the full size sheet C-2 Layout, or on the Post-Development Watershed Plan at the rear of this Report.

#### a. Post-Development Watersheds

In the Post-development condition, the site is comprised of 24 subwatersheds. (See Post-Development Watershed Plan in rear of Report). These watersheds can be categorized as:

- 1) Site runoff watersheds. 18. These watersheds sheet flow to their onsite analysis points.
  - a) Each of these 24 watersheds are further broken down into their constituent parts of:
    - i) Impervious over A soils
    - ii) Impervious over C soils
    - iii) Impervious over D soils
    - iv) Woods to remain over A soils
    - v) Woods to remain over C soils (there are no woods over D soils)
    - vi) Grass over A soils
    - vii) Grass over C soils
    - viii) Grass over D soils
    - ix) Wood Planking over A soils
    - x) Wood Planking over C soils
    - xi) Wood Planking over D soils
    - xii) Porous Pavement over C soils
- 2) Building roof watersheds. Each of these 6 roofs (except the Barn) have rain cisterns built into their basement that will store 100% of the 100 year runoff volume. Although this is useful for stormwater attenuation, the real purpose is to create reservoirs for on-site water usage.

#### b) Stormwater Runoff Controls

The drainage system has been designed to fully mitigate impacts from the 2, 10, 25, 50, and 100 year 24 hour storm events.

The drainage system has been designed in accordance with the Massachusetts Department of Environmental Protection's Stormwater Management Policy (including Volume One, Stormwater Policy Handbook and Volume Two, Stormwater Technical Handbook). Runoff rate and mitigation are accomplished in two principal ways:

- i) The water storage cisterns within the new buildings. These cisterns will have a "permanent level", which is the level of rainwater intended to be held and available for site uses. Above this level will be a volume large enough to hold the 100 year roof runoff volume. A small diameter discharge pipe will allow this volume to drain over 3 days to the permanent level.
- ii) The change in surfaces. Although the site will have some impervious surfaces, it will have wood plank drive and a wood plank entrnce area,

#### Hillside Center for Sustainable Living

porous pavement for some of the parking bays, and considerably more grass area than the existing site.

#### b) Water Quality Controls:

Water quality can be degraded by development as stormwater runoff comes into contact with parking and drive areas, as well as other areas subject to intense use. The "first flush" effect is the name given to the highest pollutant concentrations observed at the beginning of a storm event. Residues which have collected on paved surfaces are "flushed" at the beginning of a rain event. After this first flush is washed from the paved surface, pollutant concentrations decline throughout the remainder of the storm event. Therefore, runoff from paved surfaces will be directed through the following "Best Management Practices" (BMP's) as defined by the DEP.

- i) Rain Gardens, designed in accordance with the DEP Standards.
- ii) Where the nature of the site structures do no permit the placement of a landscape Rain Garden, Stormceptor Water Quality Inlets, sized in accordance with the DEP Standards.
- iii) In addition, there will be Grassed Swales, although since these do not meet the full specifications of the DEP Standards, they have not been counted in the Water Quality calculations. (The site easily meets the Water Quality standards without them).

#### D. Hydrological Analysis:

Analysis was done in accordance with the "City of Newburyport Stormwater Management Rules and Regulations". These Regulations also reference the MA DEP Stormwater Guidelines. In accordance with these Regulations, the USDA Soil Conservation Services (SCS) hydrologic methods were used for these calculations. The analysis is based on procedures described in the SCS National Engineering Handbook, Section 4, (NEH-4) and was performed using the SCS TR-20 Computer Program for project Formulation Hydrology, as used by the analysis program "HydroCAD Version 10.0". This program incorporats the methods described in NEH-4 to compute runoff, develop flood hydrographs, and route flows through stream channels and reservoirs. It can combine routed hydrographs with tributaries and compute the peak discharges, their times of occurrence, and the water surface elevations at any desired cross section or structure.

- i) A note about Rainfall Data used in the analysis:
  - (1) The Newburyport Stormwater R & R contain in Table 1, prescribed 24 hour rainfall amounts to be used in the analysis as follows:

Hillside Center for Sustainable Living

Storm	Inches
Event	(per 24-hours)
(in years)	
2	3.1
10	4.7
25	5.8
50	7.1
100	8.3

However, the NOAA Atlas of Precipitation Frequencies was recently updated to higher numbers. This Atlas is referenced in the MA DEP Stormwater Guidelines. The new NOAA rainfall amounts for Newburyport are as follows:

Storm	Inches
Event	(per 24-hours)
(in years)	
2	3.15
10	4.83
25	5.80
50	7.10
100	8.30

One can see that the 2 and 10 year rainfall amounts are slightly higher in the NOAA Atlas. Therefore, to be conservative, these were used in the analysis.

Results of the analysis are presented in the calculations that follow, and are summarized below.

Pre and Post development runoff rates and volumes were calculated at the point of discharge from the new road culvert. Results are as follows:

Storm	Pre Rate, cfs	Post Rate, cfs	Pre Volume, cf	Post Volume, cf
Event				
2 year	3.57	1.22	28,531	13,250
10 year	5.65	2.86	57,814	34,317
25 year	6.24	4.17	77,490	49,987
50 year	6.46	5.33	106,235	74,224
100 year	6.68	6.32	135,077	99,387

**End of Narrative** 



#### **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. This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8<sup>2</sup>
- 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.

#### 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

<sup>&</sup>lt;sup>1</sup> 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.

<sup>&</sup>lt;sup>2</sup> 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**

conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

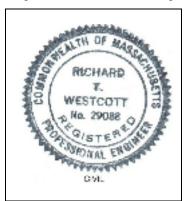
*Note:* Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that 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



Richard T. Westcott P.E. 2015.11.25 09:42:03 -05'00'

Signature and Date

#### Checklist

<b>Project Type:</b> Is the application for new development, redevelopment, or a mix of new and redevelopment?
☐ New development

☐ Mix of New Development and Redevelopment

#### Checklist (continued)

□ Redevelopment

**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



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

# **Checklist for Stormwater Report**

the	project:
	No disturbance to any Wetland Resource Areas
$\boxtimes$	Site Design Practices (e.g. clustered development, reduced frontage setbacks)
$\boxtimes$	Reduced Impervious Area (Redevelopment Only)
$\boxtimes$	Minimizing disturbance to existing trees and shrubs
	LID Site Design Credit Requested:
	☐ Credit 1
	☐ Credit 2
	☐ Credit 3
$\boxtimes$	Use of "country drainage" versus curb and gutter conveyance and pipe
$\boxtimes$	Bioretention Cells (includes Rain Gardens)
	Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
	Treebox Filter
	Water Quality Swale
	Grass Channel
	Green Roof
$\boxtimes$	Other (describe): Cisterns for roof runoff
Sta	andard 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
$\boxtimes$	Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist (continued)

Standard 2: Peak Rate Attenuation



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

# **Checklist for Stormwater Report**

	Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.  Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
	Calculations provided to show that post-development peak discharge rates do not exceed pre- development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.
Sta	andard 3: Recharge
$\boxtimes$	Soil Analysis provided.
$\boxtimes$	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.
	Runoff from all impervious areas at the site discharging to the infiltration BMP.
$\boxtimes$	Runoff from all impervious areas at the site is <i>not</i> 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.
$\boxtimes$	Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
	Recharge BMPs have been sized to infiltrate the Required Recharge Volume <i>only</i> 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.
$\boxtimes$	Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
	Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.
<sup>1</sup> 80	% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist (continued)

Standard 3: Recharge (continued)



#### **Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands Program

# **Checklist for Stormwater Report**

	The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
	Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.
Sta	indard 4: Water Quality
The	e 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.

applicable, the 44% TSS removal pretreatment requirement, are provided.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if

Checklist (continued)

Standard 4: Water Quality (continued)



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

# **Checklist for Stormwater Report**

$\boxtimes$	The BMP is sized (and calculations provided) based on:
	☑ The ½" or 1" Water Quality Volume or
	∑ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
	The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
	A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.
Sta	ndard 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 <b>prior to</b> 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.
Sta	ndard 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



#### **Massachusetts Department of Environmental Protection**

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# **Checklist for Stormwater Report**

$\bowtie$	The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
	☐ Limited Project
	<ul> <li>☐ 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.</li> <li>☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area</li> <li>☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff</li> </ul>
	☐ 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)

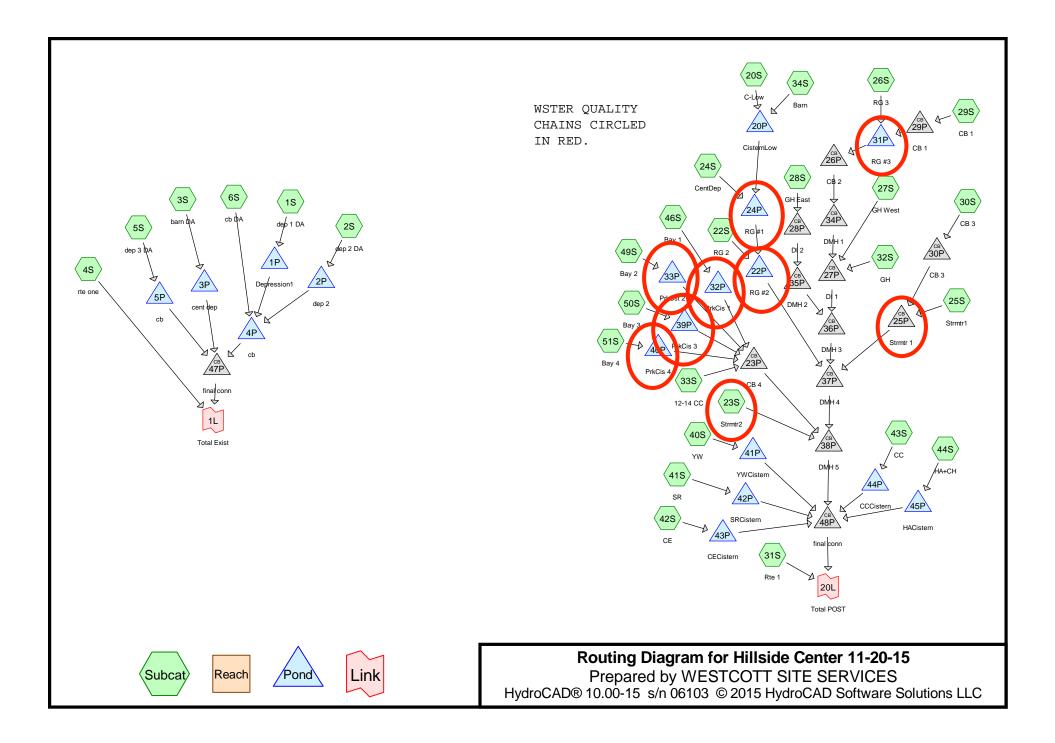
**Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control** (continued)



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

# **Checklist for Stormwater Report**

	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 <i>not</i> been included in the Stormwater Report but will be submitted <i>before</i> land disturbance begins.
	The project is <i>not</i> 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
$\boxtimes$	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.
Sta	andard 9: Operation and Maintenance Plan
$\boxtimes$	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 <b>not</b> 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.
Sta	andard 10: Prohibition of Illicit Discharges
	The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
	An Illicit Discharge Compliance Statement is attached;
$\boxtimes$	NO Illicit Discharge Compliance Statement is attached but will be submitted <i>prior to</i> the discharge of any stormwater to post-construction BMPs.



#### WESTCOTT SITE SERVICES

60 Prospect Street, Waltham MA Engineers Planners

Date: 11/23/2015

**Project: HILLSIDE CENTER** 

WSS #: 5301

Subject: Impervious Area, ARV, & WQV By HydroCad node

Node		Soil A	Soil C	Soil D	
20S	C-Low			12226	
22S	RG 2	2400	7701	1666	
23S	Strmtr2	5201			
24S	CenDep	1199	75	9481	
25S	Strmtr 1	10501	7266		
26S	CB2	1269			
27S	<b>GH</b> West			390	
28S	GH East			1129	
29S	CB1	3522			
30S	CB3	3592			
31S	Rte 1	493			
32S	GH			1709	(Greenhouse)
34S	Barn			2426	
40S	YW	2136			
41S	SR	7823			
42S	CE		2744	3179	
43S	CC		4684	4280	
44S	HA+CH	1803		8315	
46S	Prkg Bay 1				(all porous)
49S	Prkg Bay 2		1664		(not incl porous)
50S	Prkg Bay 3		1612		(not incl porous)
51S	Prkg Bay 4		2549		(not incl porous)
	Totals	39939	28295	44801	_

#### Standard 3 - Annual Required Recharge Volume

Total Req. V=				<b>2,950</b> cf
Vcf =	1997	594	358	
Feet	0.05	0.021	0.008	

#### **Recharge Volume Provided:**

Rain Garden #1				
Bott. Pond Surface Area sf	126	from plan		
Target Ponding Depth	0.5		V=	63
4:1 side slope				
Top Pond Surface Area sf	345	from plan	V=	55
Soil Strg Volume:				

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60 Prospect Street, Waltham MA Engineers Planners

Surface Area	126			
Depth	3.25	30% voids	V=	123
Total Volume Provided =				241

Rain Gardens 2 same.

Rain Gardens V =	482
------------------	-----

#### Pervious Pavement in parking lot:

Storage Bed 4" stone + 12" gravel + 3" pea stone + 4" stone = 1.91 ft.

Surface Area = Bay 1 1192 sf

Bay 2 2304 sf

Bay 3 2545 sf

Bay 4 1530 sf

7571 sf 40% voids V= 5784 cf

Total ARV Provided = 6,266 cf OK

#### Standard 4 - Required Water Quality Volume

Impervious Area, not including residential roofs:

HydroCad Nodes:

20S	C-Low			12226
22S	RG 2	2400	7701	1666
23S	Strmtr2	5201		
24S	CenDep	1199	75	9481
25S	Strmtr 1	10501	7266	
26S	CB2	1269		
27S	<b>GH West</b>			390
28S	GH East			1129
29S	CB1	3522		
30S	CB3	3592		
31S	Rte 1	493		
32S	GH			1709
49S	Prkg Bay 2		1664	
50S	Prkg Bay 3		1612	
51S	Prkg Bay 4		2549	
34S	Barn			2426
	Totals	28177	20867	29027

Total Impervious Area = 78,071 Required rainfall 1/2 inch = 0.042 ft.

Total Required Water Quality Volume =	3,279 cf	
Total WQV Provided =	<b>6,266</b> cf	OK

#### **INSTRUCTIONS:**

Version 1, Automated: Mar. 4, 2008

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

Location: RAIN GARDENS 1 & 2

	В	C	D	E	F
	BMP <sup>1</sup>	TSS Removal Rate <sup>1</sup>	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
neet	Rain Garden	0.90	1.00	0.90	0.10
oval orksł		0.00	0.10	0.00	0.10
Removal on Worksheet		0.00	0.10	0.00	0.10
TSS ReCalculation		0.00	0.10	0.00	0.10
Cal		0.00	0.10	0.00	0.10
		Total T	SS Removal =		Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: Hillside Center
Prepared By: RTW
Date: 11/23/2015

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

#### **INSTRUCTIONS:**

Version 1, Automated: Mar. 4, 2008

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

Location: Rain Garden 3

	В	С	D	E	F
		TSS Removal	Starting TSS	Amount	Remaining
	BMP <sup>1</sup>	Rate <sup>1</sup>	Load*	Removed (C*D)	Load (D-E)
eet	Rain Garden	0.90	1.00	0.90	0.10
al kst					
0 / 0 r		0.00	0.10	0.00	0.10
Removal on Worksheet		0.00	0.10	0.00	0.10
TSS ReCalculation					
		0.00	0.10	0.00	0.10
)a					
J		0.00	0.10	0.00	0.10

Total TSS Removal = Project: Hillside Center Prepared By: RTW \*Equals remaining load from previous BMP (E) Date: 11/23/2015

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

Separate Form Needs to be Completed for Each

**Outlet or BMP Train** 

90%

which enters the BMP

#### **INSTRUCTIONS:**

Version 1, Automated: Mar. 4, 2008

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

Project: Hillside Center

Date: 11/23/2015

Prepared By: RTW

Location: Parking Cisterns (Four)

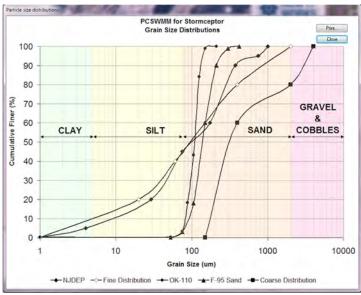
	В	C TSS Removal	D Starting TSS	E Amount	F Remaining
	BMP <sup>1</sup>	Rate <sup>1</sup>	Load*	Removed (C*D)	Load (D-E)
eet	Porous Pavement	0.80	1.00	0.80	0.20
moval Worksheet	1 Olous Favement	0.00	1.00	0.80	0.20
)    or		0.00	0.20	0.00	0.20
4					
S F		0.00	0.20	0.00	0.20
TSS ReCalculation		0.00	0.20	0.00	0.20
Cal		0.00	0.20	0.00	0.20
		Total T	SS Removal =	80%	Separate Form Needs to be Completed for Each Outlet or BMP Train

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed 1. From MassDEP Stormwater Handbook Vol. 1 \*Equals remaining load from previous BMP (E)

which enters the BMP

# Standard 4 - Stormceptor TSS Removal calculations (Stormceptor 1 modeled, the unit with the greatest impervious area)







# STANDARD 8 – CONSTRUCTION PERIOD CONTROLS STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

#### Spill management and emergencies:

- If a hazardous material spill occurs, or other environmental hazard, the Fire Department shall be called.
- The responsibility for the cleanup will be upon the entity that caused the hazard. That entity shall immediately engage a qualified Environmental Cleanup Company to remove the hazard.

#### Principles:

- The total area of exposed earth shall be kept to the practical minimum.
- No earth shall be left exposed when heavy rain is expected. All disturbed areas shall be stabilized with temporary jute mesh, or equal, if the permanent surface will not be applied within a week.

#### Schedule of Activities:

- Stone Entrance Aprons shall be constructed where shown. These are intended to minimize the tracking of dirt off the site. The stone in the apron shall be renewed as necessary to maintain effectiveness. These shall be maintained throughout the major construction, and be removed only when the major site construction is complete.
- 2. Solar arrays shall be placed, and used as a protected Staging Area.
- 3. The siltfence shall be erected, as shown at a minimum, with additional fence placed as needed.
- 4. Construction drive shall be graded and located as shown on Sheet C-1. It shall be surfaced with base course gravel.
- 5. The Sediment Traps shall be constructed where shown.
- 6. The Construction Office and Staging Area will be set up.
- 7. The remainder of the construction activities can then commence.

#### The General Contractor shall conduct the following routine inspections:

- Any dewatering that is necessary shall be directed into perforated barrels lined with filter fabric, or other effective silt filters.
- After every major rain event, and at least weekly:
  - Integrity of the erosion control fence, making repairs and adjustments as necessary.
- Police the property line, and remove any trash and debris that has travelled off the site.
- Once a month: Measure sediment depth in the sediment traps. Sediment shall be removed when it has reached 12" deep.
- The General Contractor shall maintain the SWPPP Checklist, contained in the Project Manual (not yet awarded at the time of this Sheet's printing).
- At the substantial complete stage:
  - All manholes and drain pipes shall be inspected to ensure they are clear of debris.
  - Silt fence, and other temporary controls shall be removed from the site.

# Standard 9 Stormwater Control Operation & Maintenance Schedule

#### REQUIRED INSPECTION AND MAINTENANCE SCHEDULE

**COMPONENT:** Paved Areas

**RESPONSIBLE PARTY:** Property Owner

**ACTION:** Street Sweeping **FREQUENCY:** Annually

**DESCRIPTION:** The access drives and parking areas shall be vacuum swept to remove accumulated winter debris on an annual basis. The sweeping shall occur in the spring, after winter snow removal activities are complete. All materials removed during the vacuum sweeping shall be disposed of outside the property in an approved location in accordance with all applicable local, state and federal regulations for the disposal of road debris, including Massachusetts Department of Environmental Protection (MADEP)

Storm Water Management Policy.

**COMPONENT:** Deep sump catch basins **RESPONSIBLE PARTY:** Property Owner **ACTION:** Sediment removal / sump cleaning

FREQUENCY: Bi - Annually

**DESCRIPTION:** Catch basins shall be cleaned to remove accumulated sand and other debris on a bi-annual basis. Cleaning shall be performed after paved areas are swept in the spring and after fall leaf clean-up activities. All sediment removed from catch basin sumps will be disposed of outside the property in a manner consistent with current DEP

Policies relative to storm water related sediments.

**COMPONENT:** Stormceptor Water Quality Inlets

**RESPONSIBLE PARTY:** Property Owner **ACTION:** Sediment removal / sump cleaning **FREQUENCY:** Annually (subject to adjustment)

**DESCRIPTION:** Once each year the level of sediment in the Stormceptor sump shall be measured using a light intensity sludge detector, such as the "Markland Sludge Gun or the Canacopus Sludge Detector, or equal. When sediment has reached 6 inches deep the Stormceptor shall be cleaned by a vacuum truck. The schedule for inspection may be modified according to the rate at which sediment is actually found to be accumulating. All sediment removed from shall be disposed of outside the property in a manner consistent with current DEP Policies relative to storm water related sediments.

**COMPONENT:** Access driveways, sidewalk and walkway maintenance - Winter

Maintenance

**RESPONSIBLE PARTY:** Property Owner

**ACTION:** Snow removal, sanding, de-icing application

**FREQUENCY:** As weather conditions require

**DESCRIPTION:** The common area access drives, sidewalks, parking areas, and walkways shall be cleared of snow and / or ice as required during the winter. At the

culmination of each storm event, the Manager and his or her employees and/or subcontractors will remove snow from the drives, walkways and individual unit driveways. Such snow removal activities will take place using snowplows and snow blowers. Snow will be plowed into those areas of the property where sufficient room for snow storage exists. In the event of excessive snow accumulation, the Manager will remove and properly dispose of snow in accordance all applicable local, state and federal regulations.



# MAP LEGEND

#### Very Stony Spot Stony Spot Spoil Area Wet Spot Other w 8 Soil Map Unit Polygons Area of Interest (AOI) Soil Map Unit Points Soil Map Unit Lines Special Point Features Area of Interest (AOI) Soils







# Special Line Features

# Water Features

Streams and Canals

# **Fransportation**

**Borrow Pit** Clay Spot

Blowout

Rails



Closed Depression



**Gravelly Spot** 

**Gravel Pit** 



# Background

Aerial Photography

Marsh or swamp

Lava Flow

Landfill

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot Sandy Spot

# Please rely on the bar scale on each map sheet for map

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

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale

MAP INFORMATION

http://websoilsurvey.nrcs.usda.gov Natural Resources Conservation Service Web Soil Survey URL: Source of Map: measurements

Web Mercator (EPSG:3857)

Coordinate System:

Albers equal-area conic projection, should be used if more accurate distance and area. A projection that preserves area, such as the Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts calculations of distance or area are required. This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Essex County, Massachusetts, Northern Part Version 10, Sep 19, 2014 Survey Area Data: Soil Survey Area:

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger. Date(s) aerial images were photographed: Mar 30, 2011—Apr 8,

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

Severely Eroded Spot

Slide or Slip Sodic Spot

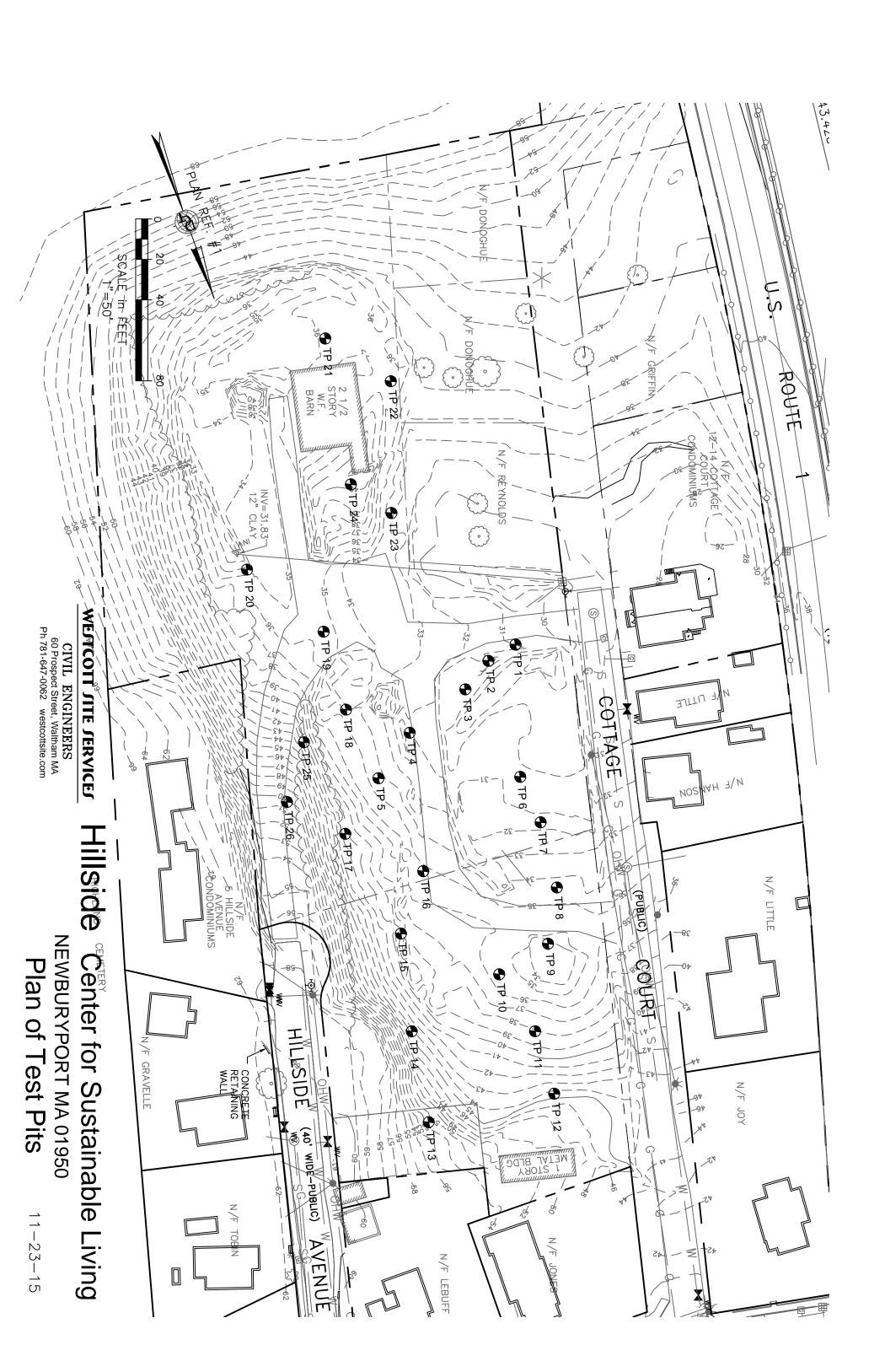
Sinkhole

## **Map Unit Legend**

	Essex County, Massachusetts, Northern Part (MA605)				
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI		
16A	Scantic silt loam, 0 to 3 percent slopes	4.4	11.4%		
228B	Buxton silt loam, 3 to 8 percent slopes	0.1	0.3%		
253B	Hinckley loamy sand, 3 to 8 percent slopes	10.1	26.3%		
253D	Hinckley loamy sand, 15 to 25 percent slopes	3.6	9.4%		
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	0.1	0.2%		
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	2.0	5.2%		
257E	Hinckley and Windsor loamy sands, steep	3.7	9.6%		
600	Pits, gravel	4.2	10.9%		
602	Urban land	0.4	1.0%		
719B	Suffield silt loam, 3 to 8 percent slopes	9.9	25.7%		
Totals for Area of Interest		38.5	100.0%		

# Hillside Center for Sustainable Living

### SOILS INFORMATION



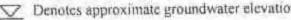
CON	COLNGINDERS & SCIENTISTS	TEST PIT REPORT	
PROJECT	6733 - Cottage Court and Hillside Avenue	BORING ID. TP-01	
LOCATION	Newburyport, Massachusetts	PAGE I OF	
DRILLING CO.	NA	DATE STARTED 4/13/2010	
EQUIPMENT:	Mini-Excavator	DATE FINISHED: 4/13/2010	
DRILLED BY	NA	SURFACE ELEVATION Not Determined	
INSPECTED BY:	Michael Philbin		
GROUND	WATER OBSERVATIONS	Mini-Excavator	
NOT	ENCOUNTERED	TYPE NA	
DEPTH	STABILIZATION TIME	SIZE NA	
2.5	in-situ	PENETRATION: NA	

视性标识		The section in	SAMPLEDATA	August 1981	100-00	handlad by
(ft)	SAMPLING DEPTH FROM - TO	WATER TABLE (ft)	(Description of materials)	SAMPLE	PEN/ RECOV (in./in.)	FIELD SCREENING (ppm)
0.0		목	0-2.5': Fill: Silty Sand; fine to medium sand, approximately 10% slightly plastic silt, trace gravel, brown. Glass, metal, plastic, and wood debris observed. Black, ashen coal slag observed with some white and red components.  2.5'-3.5': Glacial Till: Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10% slightly plastic silt, dark brown. Soils at 3 feet below grade appear to be native.  Hole collapsed due to groundwater encountered at 2.5'		NA	
5.0						
10.0						
15.0						
20.0						



TA TROSE	CO ENGINEERS & SCIENTISTS	TEST PITREPORT	
PROJECT: LOCATION: DRILLING CO: EQUIPMENT: DRILLED BY: INSPECTED BY:	6733 - Cottage Court and Hillside Avenue  Newburyport, Massachusetts  NA  Mini-Excavator  NA	BORING ID	
GROUND	ENCOUNTERED: STABILIZATION TIME in-situ	Mini-Excavator TYPE: NA SIZE NA PENETRATION: NA	10.540

DEPTH	SAMPLING	WATER	LITHOLOGY	SAMPLE	PEN/	SCREENING
(0)	DEPTH	TABLE	(Description of materials)	ID	RECOV (itt./in.)	(ppm)
	PROM - TO	(ft)	The second secon		NA	
0.0			0-1': Fill: Silty Gravelly Sand; fine to medium sand, 10-20% large sub-rounded gravel,			1
			10% dightly plastic silt, brown Glass, metal, plastic, and wood debris observed. Brick,			
			ashen coal slag observed with some white and red components.			1
		$\leq$	1-2': Fill: Gravelly Clayey Sand; fine sand, 10-20% large sub-rounded to sub-angular		-	
		=	gravel, 10% moderately plastic clay, brown. Glass, metal, plastic, and wood debris			
			observed. Black, ashen coal slag observed with some white and red components.  2'-3': Glacial Till: Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel.			
-			10% slightly plastic silt, dark brown. Soils at 3 feet below grade appear to be native			1
			10% slightly plastic stit, dark blown. Sous at 5 leet below grant appearance	-	-	-
			Hale collapsed due to groundwater encountered at 2'			
5.0			ridic compact due to ground the			-
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CONT	COLEMOINEERS & SCIENTISTS	TESTPI	FREPORT		
PROJECT	6733 - Cottage Court and Hillside Avenue	BORING ID.	TP-03		
LOCATION:	Newburyport, Massachusetts	PAGE 1 OF	1		
RILLING CO:	NA .	DATE STARTED	4/13/2010		
	Mini-Excavator	DATE FINISHED	4/13/2010		
DRILLED BY:	NA	SURFACE ELEVATION	Not Determined		
INSPECTED BY	Michael Philbin				
GROUND	WATER OBSERVATIONS	M	ni-Excavator		
NOT	ENCOUNTERED	TYPE	NA_		
DEPTH	STABILIZATION TIME	SIZE	NA		
2.5	in-situ	PENETRATION	NA		

DEPTH (fi)	SAMPLING DEPTH	WATER	LITHOLOGY (Description of materials)	SAMPLE	PEN/ RECOV (in /in.)	FIELD SCREENING (ppm)
0.0	FROM - TO	(fi)	0-6": Topsoil: Organic Silty Sand; fine to medium sand, 10% slightly plastic silt, 20-30% organic material, dark brown.		NA	
			6"-1.5": Fill: Silty Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10% slightly plastic silt, dark brown. Black, ashen coal slag observed with some white and red			
		골	components.  1.5'-2.5': Fill: Gravelly Clayey Sand; fine to medium sand, 10-20% large sub-rounded to			
77			sub-angular gravel, 10% moderately plastic clay, brown. Black, ashen coal slag observed with some white and red components.			
5.0			2.5'-3.5': Glacial Till: Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10% slightly plastic silt, dark brown. Soils at 3 feet below grade appear to be native.	24241-4440		
	V	Hole collapsed due to groundwater encountered at 2.5'				
						1
10.0	-					-
				-		
	-					
15.0	15.0					
					1	
				1-1-		
	-				-	
20.0						

GENERAL REMARKS: No soil samples collected.

NA indicates Not Applicable, test pit completed with mini-excavator.

Denotes approximate groundwater elevation.



CONE	CO ENGINEERS & SCIENTISTS	TEST PIT REPORT
	6733 - Cottage Court and Hillside Avenue Newburyport, Massachusetts NA Mini-Excavator NA	BORING ID. TP-04  PAGE 1 OF 1  DATE STARTED 4/13/2010  DATE FINISHED: 4/13/2010  SURFACE ELEVATION Not Determined
GROUND	ENCOUNTERED: STABILIZATION TIME in-situ	TYPE NA NA NA PENETRATION: NA

Shulestan	OF SHIP HILL SEE	Depoint in Dales	California de la companya del companya de la companya del companya de la companya del companya de la companya de la companya de la companya del companya de la companya della companya de la companya della companya della companya del		THE REAL PROPERTY.	ELECT D
DEPTH (R)	SAMPLING DEPTH	WATER	LITHOLOGY (Description of materials)	SAMPLE	PEN/ RECOV (in./in.)	FIELD SCREENING (ppm)
0.0	FROM - TO	(fi)	0-4": Topsoil: Organic Silty Sand; fine to medium sand, 10% slightly plastic silt, 20-30%		NA	
			organic material, dark brown.  4"-2.5": Fill: Silty Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10% slightly plastic silt, dark brown. Black, ashen coal slag observed with some white and red			
		목	components. Bottles, cans, bricks, wood debris observed.  2.5'-3.5': Glacial Till: Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel.			
			10% slightly plastic silt, dark brown. Soils at 3 feet below grade appear to be native			
5.0			Hole collapsed due to groundwater encountered at 2.5'			
3,0						
					1	
10.0						
				120000		
15.0						
				-		
	-					
20.0						



THE CONT	COUNCINEERS & SCIENTISTS	TEST PHERPPORT
PROJECT: LOCATION: DRILLING CO: EQUIPMENT: DRILLED BY: INSPECTED BY	6733 - Cottage Court and Hillside Avenue  Newburyport, Massachusetts  NA  Mini-Excavator  NA	BORING ID. TP-05  PAGE 1 OF 1  DATE STARTED: 4/13/2010  DATE FINISHED: 4/13/2010  SURFACE ELEVATION Not Determined
GROUND	ENCOUNTERED: STABILIZATION TIME in-situ	TYPE: NA NA PENETRATION: NA

DEPTH (fi)	SAMPLING DEPTH FROM - TO	WATER TABLE (ft)	LITHOLOGY (Description of materials)	SAMPLE	RECOV (in/in.)	FIELD SCREENING (ppm)
0.0	FROM - TO	(11)	0-1": Fill: Silty Gravelly Sand; fine to medium sand, 20% sub-rounded gravel, 10%		NA	
-			slightly plastic stlt, dark brown 1'-2': Fill: Silty Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10%		niemostovićim	
			slightly plastic silt, dark brown Black, ashen coal slag observed with some white and red components. Glass jars, bricks, wood debris observed.			
			2) 11- Clasial Till- Cravelly Sand: fine to medium sand, 15-20% sub-rounded gravel, 10%			
		뫁	slightly plastic silt, dark brown. Black, ashen coal slag interspersed. Soils at 3 feet below grade appear to be native.			-
	-4					
5.0			Hole collapsed due to groundwater encountered at 3'	-		
			-			
10.0						
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	-				+	
15.0					**********	
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	-	-				
20.0				100		



COST	CO ENGINEERS & SCIENTISTS	TEST PIT REPORT	
PROJECT: LOCATION: DRILLING CO: EQUIPMENT: DRILLED BY:	Newburyport, Massachusetts  NA  Mini-Excavator  NA	BORING ID. TP-06  PAGE 1 OF 1  DATE STARTED: 4/13/2010  DATE FINISHED: 4/13/2010  SURFACE ELEVATION Not Determined	
A. 3.	Michael Philbin  WATER OBSERVATIONS  ENCOUNTERED:  STABILIZATION TIME  in-situ	TYPE: NA NA NA PENETRATION: NA	
	Share and common and the state of the state	MPDE DATA	TELD

EPTH (B)	SAMPLING DEPTH	WATER TABLE	LITHOLOGY (Description of materials)	SAMPLE	PEN/ RECOV (in./in.)	FIELD SCREENIN (ppm)
	FROM - TO	(ft)			NA .	
0.0			0-2': Fill: Sand; medium to coarse sand, brown			
				****		
			15 20% cub enunded gravel 10%			
			2'-3': Fill: Sitty Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10% slightly plastic silt, gray. Gray/white ashen coal slag observed with some red components			
		$\subseteq$	Deaths breaks word daling observed			
n-		-	3'-4': Native Materials: Glacial Till: Gravelly Sand; fine to medium sand, 15-20% sub-			1
			rounded gravel, 10% slightly plastic silt, brown	-	-	
			Tourided graver, 10 10 strain, p	*******		
5.0			Hole collapsed due to groundwater encountered at 3'	-	-	-
2.0			Transaction and the second			-
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DOMESTIC STATES	COLNGINEERS & SCIENTISTS	TEST P	TREPORT
PROJECT LOCATION: DRILLING CO: EQUIPMENT: DRILLED BY:	6733 - Cottage Court and Hillside Avenue Newburyport, Massachusetts NA Mini-Excavator NA	BORING ID  PAGE 1 OF  DATE STARTED:  DATE FINISHED:  SURFACE ELEVATION	1 4/13/2010 4/13/2010 Not Determined
	WATER OBSERVATIONS ENCOUNTERED	TYPE:	Int-Excavator NA
DEPTH 2.2'	STABILIZATION TIME	SIZE: PENETRATION	NA NA SAMPLE PEN/ FIELD

EPTH	SAMPLING	WATER	LITHOLOGY	SAMPLE	PEN/ RECOV	SCREENIN
(ft)	DEPTH	TABLE	(Description of materials)	10	(in fin.)	(ppm)
4.7	FROM - TO	(ft)			NA.	
0.0			0-2': Fill: Sand; medium to coarse sand, brown			-
						-
	1					
			2'-2.2': Fill: Silty Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10%			
			2'-2.2': Fill: Sifty Gravelly Sand; the to incumin said. slightly plastic silt, gray. Gray/white ashen coal slag observed with some red components.			
		$\leq$	The state of the s			
		=	Bottles, bricks, wood debris observed.  2.2'-3.2'; Glacial Till: Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravet.			
			10% slightly plastic silt, brown:			
5.0		1	Hole collapsed due to groundwater encountered at 2.2"			
-				No. of the last		
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	1	-1		++		
					-	
		-7			-	
20.0						

NA indicates Not Applicable, test pit completed with mini-excavator.

Denotes approximate groundwater elevation.



III WAS TO SHE	CO ENGINEERS & SCIENTISTS	TEST PIT REPORT
PROJECT	Newburyport, Massachusetts  NA  Mini-Excavator  NA	BORING ID. TP-08  PAGE 1 OF 1  DATE STARTED: 4/13/2010  DATE FINISHED: 4/13/2010  SURFACE ELEVATION Not Determined
	WATER OBSERVATIONS ENCOUNTERED: STABILIZATION TIME in-situ	TYPE NA

HI (MILES	AND THE LAND OF	ALTO L	THE PROPERTY OF THE PROPERTY O	SAMPLE	PEN/	FIELD
DEPTH (ft)	SAMPLING DEPTH	WATER TABLE	LITHOLOGY (Description of materials)	ID	RECOV (in /in.)	SCREENING (ppm)
	FROM - TO	(0)	1 15 2000 with recorded upposed 10%		NA	
0.0			0"-8": Fill: Silry Gravelly Sand: fine to medium sand, 15-20% sub-rounded gravel, 10%			
		stightly plastic sill, gray. Gray/white ashen coal stag observed with some				
			Bottles, bricks, wood debris observed.			
	1	~	8"-1.5': Glacial Till: Silty Sand; fine to medium sand, 10% slightly plastic silt, gray	1		
		=	Black/gray ashen coal slag observed.  1.5'-2': Glacial Till: Silty Gravelly Sand; fine to medium sand, 15-20% sub-rounded			
	1.5'-2': Gracial Fitt: Sury G	gravel, 10% slightly plastic silt, tan. Black/gray/white ashen coal slag observed.				
-		1	gravet, 10% sugnity plastic str., can. chacke gray, trans-		-	
	-		Hole collapsed due to groundwater encountered at 2'	+		
	-		Hole compsed due to groundwater stream			-
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GENERAL REMARKS: No soil samples collected.

NA indicates Not Applicable, test pit completed with mini-excavator.

Denotes approximate groundwater elevation.



P. CONT.	CO PNGINEERS & SCIENTISTS	BORING ID	TP-09
	6733 - Cottage Court and Hillside Avenue		1
	Newburyport, Massachusetts	PAGE 1 OF	4/13/2010
	NA	DATE STARTED:	4/13/2010
EQUIPMENT:	Mini-Excavator	DATE FINISHED:	Not Determined
DRILLED BY	NA	SURFACE ELEVATION_	Hot Determines
INSPECTED BY	Michael Philbin		
GROUND	WATER OBSERVATIONS	Mi	ni-Excavator
NOT	ENCOUNTERED:	TYPE SIZE	NA NA
4'	in-situ	PENETRATION	The state of the s

为运机	in the print		LITHOLOGY	SAMPLE	PEN	FIELD
EPTH (ft)	SAMPLING DEPTH	WATER	(Description of materials)	ID	RECOV (in./in.)	SCREENING (ppm)
F107	FROM - TO	(ft)			NA	
0.0			0'-2"; Organic Topsoil: Sitty Gravelly Sand; fine to medium sand, 15-20% sub-rounded		177.	-
0.0			t tags of tale store site 2006 occupie material dark prowo.			
			2"-1.5': Fill: Silty Gravelly Sand; fine to medium sand, 13-20 % sub-foliated gravelly			
			At the state of the true Paraly debrie		-	
			1.5'-4': Native Materials: Sandy Clay; Moderately plastic clay, 20%fine to medium sand,			
			tan/gray.			
		57	Commence of the state of the st	1		-
	-	몰	Bottom of test pit: 4!	-		
s'N	5.0			-	-	
3.0			-	ela-		
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	/			Livren late		
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		4				
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GENERAL REMARKS: No soil samples collected.

NA indicates Not Applicable, test pit completed with mini-excavator. Denotes approximate groundwater elevation



	COUNTINGENTERS & SCIENTISTS	TEST PIT RUPORT
PROJECT: LOCATION: DRILLING CO: EQUIPMENT: DRILLED BY:	6733 - Cottage Court and Hillside Avenue  Newburyport, Massachusetts  NA  Mini-Excavator  NA	BORING ID. TP-10  PAGE 1 OF 1  DATE STARTED: 4/13/2010  DATE FINISHED: 4/13/2010  SURFACE ELEVATION Not Determined
	ENCOUNTERED:	TYPE NA NA NA PENETRATION. NA

CHARLES.	Aller of the later	HER PRINCIPLE IN	On the Western Select Hilliams In the SANDER DATE AND COMPUTE THE PROPERTY OF	SAMPLE	PEN/	FIELD
PTH (ft)	SAMPLING DEPTH	WATER	LITHOLOGY (Description of materials)	ID	RECOV (m./m.)	SCREENIN (ppm)
	FROM - TO	(0)	1.00		NA	
0.0		0-1.5': Fill: Silty Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10% slightly plastic silt, tan. Black/gray ashen coal slag observed. Brick fragments present. 1.5'-3': Native Materials: Sandy Clay; Moderately plastic clay, 20% fine to medium sand, tan/gray.				
		$\nabla$	Hole collapse due to groundwater encountered at 3'			
		<u></u>				
5.0						-
						-
0.0					-	-
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					-	
15.0	)					
						-
	4			-		
20,		-			-	-

NA indicates Not Applicable, test pit completed with mini-excavator.

Denotes approximate groundwater elevation



A LONG	CO ENGINEERS & SCIENTISTS	I EST KI	( Kanauci
PROJECT: LOCATION: DRILLING CO: EQUIPMENT: DRILLED BY:	6733 - Cottage Court and Hillside Avenue  Newburyport, Massachusetts  NA  Mini-Excavator  NA	BORING ID  PAGE 1 OF  DATE STARTED  DATE FINISHED  SURFACE ELEVATION	1 4/13/2010 4/13/2010 Not Determined
DEPTH	WATER OBSERVATIONS  ENCOUNTERED: X  STABILIZATION TIME	BORING ID  PAGE 1 OF  DATE STARTED:  DATE FINISHED:  SURFACE ELEVATION  Mini-Excavator  TYPE:  NA  SIZE:  PENETRATION:  NA	

SHIP PO			LITHOLOGY	24MLCC	PEN/	FIELD
DEPTH	SAMPLING DEPTH	WATER	(Description of materials)	ID	RECOV (in/m.)	SCREENING (ppm)
(11)	FROM - TO	(ft)		-	NA	
0.0			0'-2.5': Fill: Sandy Clay; Moderately plastic clay, 20%fine to medium sand, tan/gray			
			Concrete and brick fragments present. Clinker observed on the ground surface			
-				-		
			Refusal on rock or concrete at 2.5'			
				and the same of th		
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	+				-	
5.0				-	-	1
3.0			A contract of the contract of			-
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15.0	)	-				
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20.	0					

THE PROPERTY OF SHIP	CYCENGINEEKS & SCHINDSTS	LESEPTERI	PORL
PROJECT: LOCATION: DRILLING CO: EQUIPMENT: DRILLED BY INSPECTED BY	6733 - Cottage Court and Hillside Avenue Newburyport, Massachusetts NA Mini-Excavator NA	DATE FINISHED:	1 4/13/2010 4/13/2010 t Determined
GROUND	ENCOUNTERED X STABILIZATION TIME	TYPE: NAME OF TY	<u>A</u>

EPTH	SAMPLING	WATER	LITHOLOGY (Description of materials)	SAMPLE	PEN/ RECOV	SCREENING
(ft)	DEPTH	TABLE			(in./in.) NA	(ppm)
0.0 (R	(10)	0-8": Fill: Silty Sandy: fine to medium sand, 20% slightly plastic silt, black. Clinker observed on the ground surface 8"-2": Fill: Silty Sand; fine to medium sand, 20% slightly plastic silt, tan. Ceramic and		NA.		
			brick fragments present. 2'-2.5': Native Materials: Glacial Till: Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10% slightly plastic silt, brown.			
			Bottom of test pit: 2,5°.			
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1200						
				-		
15.0						
	4					
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GENERAL REMARKS No soil samples collected.

NA indicates Not Applicable, test pit completed with mini-excavator.

	CO ENGINEERS & SCIENTIS	TS	TEST PI	FREPO	RT	医外身
PROJECT LOCATION DRILLING CO. EQUIPMENT DRILLED BY:	6733 - Cottage Court and Hillside Avenue Newburyport, Massachusetts NA Mini-Excavator NA		BORING ID.  PAGE 1 OF  DATE STARTED:  DATE FINISHED:  SURFACE ELEVATION_	4/13/2 4/13/2 Not Dete	010	
DRILLED BY: INSPECTED BY: GROUND	WATER OBSERVATIONS ENCOUNTERED: X		TYPE: SIZE: PENETRATION:	NA NA NA NA	or	
DEPTH SAMPLING	G WATER TABLE	LITHOLOGY (Description of materials)		SAMPLE	PEN/ RECOV	FIELD SCREENIN (ppm)

ALTERNATION OF			LITHOLOGY	SAMPLE	PEN/	FIELD
EPTH	SAMPLING DEPTH	WATER	(Description of materials)	ID	RECOV (in./in.)	SCREENIN (ppm)
(y)	FROM TO	(ft)			NA.	
0.0	11,011		0'-3': Fill: Gravelly Sand; fine to medium sand, 20-30% sub-angular gravel, cobbles			
4.0			present, brown. Brick fragments present.			
			3'-3.5': Native Matierals: Glacial Till: Silty Sand; dense fine to medium sand, 10-20%			
			slightly plastic siltian			
			Bottom of test pit: 3.5'			-
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GENERAL REMARKS: No soil samples collected.

NA indicates Not Applicable, test pit completed with mini-excavator.

CONF	CO ENGINEERS & SCIENTISTS	TESTRI	FRANCKI
PROJECT: LOCATION: DRILLING CO: EQUIPMENT: DRILLED BY: INSPECTED BY: GROUNDY	Newburyport, Massachusetts  NA  Mini-Excavator  NA	BORING ID.  PAGE 1 OF  DATE STARTED:  DATE FINISHED:  SURFACE ELEVATION	1 4/13/2010 4/13/2010 Not Determined
GROUND	WATER OBSERVATIONS  ENCOUNTERED: X  STABILIZATION TIME	TYPE SIZE: PENETRATION	ni-Excavator NA NA NA

DEPTH (ft)	SAMPLING DEPTH FROM - TO	WATER TABLE (fl)	LITHOLOGY (Description of materials)	SAMPLE	PEN/ RECOV (in./in.)	FIELD SCREENING (ppm)
0.0 0-8': Fill: Silty Gravelly Sand; fine to medium sand, 20-30% sull slightly plastic silt, brown.	TACAL TO	(II)	0-8': Fill: Silty Gravelly Sand; fine to medium sand, 20-30% sub-rounded gravel, 10% slightly plastic silt, brown.		NA	
,,0			-1-11			
10.0			8'-10': Fill; Silty Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10% slightly plastic silt, gray. Gray/white ashen coal slag observed with some red components.  Bottom of test pit: 10'.			
10.0				1		
			-1			
15:0						
20.0	)					

CONE	COENGINEERS & SCIENTISTS	TEST PI	TREPORT
PROJECT: LOCATION: DRILLING CO: EQUIPMENT: DRILLED BY: INSPECTED BY:	Newburyport, Massachusetts  NA  Mini-Excavator  NA	BORING ID.  PAGE 1 OF  DATE STARTED:  DATE FINISHED:  SURFACE ELEVATION	1 4/13/2010 4/13/2010 Not Determined
GROUND	WATER OBSERVATIONS  ENCOUNTERED X  STABILIZATION TIME	TYPE: SIZE: PENETRATION	ni-Excavator NA NA NA NA

	The state of the s	ASSESSED TO A SECURE OF THE PARTY OF THE PAR	LITHOLOGY	SAMPLE	PEN/	FIELD
EPTH (ft)	SAMPLING	WATER	(Description of materials)	ID	RECOV (in/in)	SCREENIN (ppm)
(10)	FROM - TO	(fi)			NA	
0.0			0-2': Fill: Silty Clayey Sand; fine to medium sand, 15-20% moderately plastic fines,			
0.0			brown.			
-						-
			4 15 70% sub-rounded wavel 10%	1		
			2'-5': Fill: Silty Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10% slightly plastic silt, brown. Black/gray ashen coal slag observed. Brick fragments present.			
7						
5.0				-		-
3,0	2002-000		5'-5.5': Native Materials: Glacial Till: Silty Sand; fine to medium sand, 10% slightly			
			plastic fines, tan.			
4			Bottom of test pit; 5 5'			
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	CANAL	COPM	GINEERS & SOPPHIESES	TEST	PH REP	ORT	THE PERSON NAMED IN
PROJ	JECT:	6733 - Cot	ttage Court and Hillside Avenue	BORING ID.	TF	2-16	
LOCA	ATION:	Newburyp	port, Massachusetts	PAGE I OF		1	
DRIL	LING CO:	NA		DATE STARTED	4/13	/2010	
EQUI	IPMENT:	Mini-Excar	vator	DATE FINISHED:		/2010	
DRIL	LED BY:	NA		SURFACE ELEVATION		termined	
INSPI	ECTED BY:	Michael Ph	hilbin		JIN THUL DE	ternined	-
			BSERVATIONS				
					Mini-Excavat	tor	
	NOT E	ENCOUNTE		TYPE.	NA		
	DEPTH 2'	21/0	ABILIZATION TIME	SIZE: PENETRATION:	NA NA		
					NA.		
DEPTH	SAMPLING	NAME OF TAXABLE PARTY.	SAMPLED		THE RESERVE OF THE PARTY OF	多十四月	THE REAL PROPERTY AND ADDRESS.
(ft)	DEPTH	WATER	LITHOLOG (Description of m		SAMPLE	PEN/ RECOV	FIELD
	FROM - TO		Viscon Paris, St. St.	1800110137		(in./in.)	(ppm)
0.0			0-1': Fill: Silty Gravaelly Sand; fine to medium s	sand, 10-20% slightly plastic silt, trace		NA	
			gravel, dark brown. 1'-2': Native Materials: Glacial Till: Silty Sand;	fine to medium sand, 10-20% slightly			
		목	plastic silt, brown	The fit manners, among the second			1
			Hole collapse due to groundwater encountered at 2	91			
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NA indicates Not Applicable, test pit completed with inini-excavator.

Denotes approximate groundwater elevation.



CON	COENGINEERS & SCIENTISTS	TEST H	TREPORT	
PROJECT:	6733 - Cottage Court and Hillside Avenue	BORING ID.	TP-17	
LOCATION:	Newburyport, Massachusetts	PAGE I OF		
DRILLING CO.	NA	DATE STARTED	4/13/2010	
EQUIPMENT	Mini-Excavator	DATE FINISHED:	4/13/2010	
DRILLED BY:	NA	SURFACE ELEVATION	Not Determined	
INSPECTED BY	Michael Philbin	Sold NOD DEEVN HON_	Not Determined	
NOT E	NCOUNTERED: STABILIZATION TIME	TYPE: SIZE:	NA NA	
1.5'	in-situ	PENETRATION	NA	

DEPTH	SAMPLING	WATER	SAMPLE DATA THE PROPERTY OF SAMPLE DATA	lie III	- 別世元前以	The state of the
(ft)	DEPTH FROM - TO	TABLE (0)	LITHOLOGY (Description of materials)	SAMPLE	PEN/ RECOV	FIELD SCREENING
0.0			0-1': Fill: Silty Gravaelly Sand; fine to medium sand, 10-20% slightly plastic silt, trace		(in./in.) NA	(ppm)
-	-	-	Bravel, dark brown	-	NA.	
		$\leq$	1'-1.5': Native Materials: Glacial Till: Silty Sand; fine to medium sand, 10-20% slightly plastic silt, brown			
			Production of the Control of the Con			
			Hole collapse due to groundwater encountered at 1.5°			
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NA indicates Not Applicable, test pit completed with mini-excavator.

Denotes approximate groundwater elevation.

HE DECK	COUENGINEERS & SCIENTISTS	WEST	TREPORT
PROJECT:	6733 - Cottage Court and Hillside Avenue	BORING ID.	TP-18
PROJECT: LOCATION: DRILLING CO:	Newburyport, Massachusetts NA	PAGE I OF	1
	Mini-Excavator	DATE STARTED:	4/13/2010
DRILLED BY	NA Michael Bezin	SURFACE ELEVATION	4/13/2010 Not Determined
GROUND	NCOUNTERED: X	Mir TYPE:	ii-Excavator
DEPTH	STABILIZATION TIME	SIZE: PENETRATION:	NA NA

	The second second	THE REAL PROPERTY.	SAMPLE DATE:	Control State of the Control of the		
DEPTH	SAMPLING	WATER	LITHOLOGY		THE RESERVE OF	
(n)	DEPTH FROM - TO	TABLE (fi)	(Description of materials)	SAMPLE	PEN/ RECOV	SCREENIN
0.0			0-3': Fill: Silty Gravelly Sand; fine to medium sand, 15-20% sub-rounded gravel, 10%		(in./m.)	(ppm)
-					NA	
			and rope debris present.			
-						
			3'-4': Native Materials: Glacial Till: Silty Sand; fine to medium sand, 10% slightly plastic			
4			fines, brown, dense.			
			Bottom of test - is at			
5.0			Bottom of test pit; 4'.			
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GENERAL REMARKS: No soil samples collected

NA indicates Not Applicable, test pit completed with mini-excavator.

E MANUE	ESTANI	7. 15 增加	GINEERS & SCIENTISTS	TEST	PIT REI	ORT	
1000	JECT:	6733 - Co	ottage Court and Hillside Avenue	BORING ID		P-19	HARMES AND STATE
100	ATION:	Newbury	port, Massachusetts	PAGE I OF		1	_
11.00	LING CO:	NA		DATE STARTED	4/13/2010		_
EQU	IPMENT	Mini-Exc	avator	DATE FINISHED	-0.0	3/2010	_
	LED BY:	NA		SURFACE ELEVATION	A	termined	-
INSP	ECTED BY	Michael P	hilbin	SOM NOT DECLY IN	NOT EN	aerminea	-
		NCOUNTI	in-situ	TYPE SIZE: PENETRATION:	Mini-Excava NA NA NA		
DEPTH	SAMPLING	WATER	LITHOLOGY		SAMPLE	-	To Medical
(ft)	PROM - TO	TABLE (ft)	(Description of mate		ID	PEN/ RECOV	SCREENIN
0.0	- Lunear	V.II	0-2.5': Fill: Gravelly Silty Send. Fire to	The Address of the Control of the Co		(in/in)	(ppm)
			0-2,5': Fill: Gravelly Silty Sand; fine to medium sail rounded gravel, brown Gray/white ashen coal slag of	nd, 20% slightly plastic silt, 10% sub- bserved. Brick fragments present		NA	
	-			brown ragmens present.			
			2.5'-3': Native Materials: Glacial Till: Silty Sand; I	ing to medium sand 10% eliabeta			1
-		$\leq$	plastic fines, brown, dense.	the termedian sand, 10% singing			
		-	Hole collapsed due to groundwater encountered at 3'				
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ARKS: No soil samples collected.

NA indicates Not Applicable, test pit completed with mini-excuvator.

Denotes approximate groundwater elevation



CON	SCO ENGINEERS & SCIENTISTS	TEST	REMORE TO THE
PROJECT: LOCATION: DRILLING CO: EQUIPMENT	Newburyport, Massachusetts  NA  Mini-Excavator	BORING ID.  PAGE 1 OF  DATE STARTED:  DATE FINISHED:	TP-20 1 4/13/2010 4/13/2010
INSPECTED BY:		SURFACE ELEVATION_	Not Determined
	ENCOUNTERED: STABILIZATION TIME in-situ	TYPE SIZE: PENETRATION:	NA NA NA

DEPTH	SAMPLING	WATER	LITHOLOGY	SAMPLE	PEN/	FIELD
(ft)	DEPTH FROM - TO	TABLE (ft)	(Description of materials)	ID ID	RECOV	SCREENIN
0.0			0-1.5': Native Materials: Glacial Till: Silty Sand; fine to medium sand, 10% slightly		(in/in.) NA	(ppm)
**		$\subseteq$	prison times, dark brown			
0	-	-	Hole collapsed due to groundwater encountered at 1.5. Standing water noted adjacent to test			-
			pit.			
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NA indicates Not Applicable, test pit completed with mini-excavator

Denotes approximate groundwater elevation.

PRO	ECT:		GINEERS & SCIENTISTS		E PIT RI	1000000	
	ATION:		tage Court and Hillside Avenue	BORING ID.	-	TP-21	
	LING CO	NA	ort, Massachusetts	PAGE I OF	-	1	-51
		Mini-Exca	matiki.	DATE STARTED:	4	4/13/2010	
DRILLED BY			vator	DATE FINISHED		4/13/2010	
		NA Michael Philbin		SURFACE ELEVAT	ON Not	Determined	_
	DEPTH 3°	STA	BILIZATION TIME	TYPE SIZE PENETRATION:	Mini-Exce NA NA NA		
EPTH	SAMPLING	WATER		B) E DADA SAME AND A COMPANY OF SAME		St. Parks St.	Harris Marie
(ft)	DEPTH FROM - TO	TABLE (n)	The state of the s	OLOGY on of materials)	SAMPL	RECOV	FIELD SCREENING
0.0			0-8": Fill: Silty Sand; fine to medium san 8"-1.5": Fill: Silty Sand; fine to medium s	d, 10% slightly plastic fines, light brown		(in./in.) NA	(ppm)
			The state of the s	and and anguity present times, think brown	Charles I	And Address of the	

(ft)	DEPTH FROM - TO	TABLE (h)	(Description of materials)	SAMPLE	PEN/ RECOV (in./in.)	FIELD SCREENING (ppm)
0.0			0-8": Fill: Silty Sand; fine to medium sand, 10% slightly plastic fines, light brown		NA	Approx.
			8"-1.5": Fill: Silty Sand; fine to medium sand, 10% slightly plastic fines, dark brown.			
			1.5'-3': Fill: Gravelly Sand; medium to coarse sand, 20-30% sub-rounded gravel, trace fines, brown.			
-		골	Hole collapsed due to groundwater encountered at 3"			
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GENERAL REMARKS: No soil samples collected.

NA indicates Not Applicable, test pit completed with mini-excavator.

Denotes approximate groundwater elevation.



THE PERSON		SPANNER V	GINEERS & SCIENIISTS	TO SEE SEES	T PET REP	ORF	
PRO	JECT:	6733 - Co	ttage Court and Hillside Avenue	BORING ID.	andiener in the	P-22	<b>医加维纳氏</b>
LOC	ATION:		sort, Massachusetts	PAGE 1 OF	- 1	1	-
DRII	LLING CO:	NA		DATE STARTED:	4015	/2010	-
EQU	IPMENT:	Mini-Exca	Excavator DATE FINISHED			/2010	-
100000	LED BY	NA		SURFACE ELEVAT		termined	-
INSP	ECTED BY	Michael P	hilbin		1101 20	termined	-
	NOT I	ENCOUNTE	BILIZATION TIME	TYPE: SIZE PENETRATION:	Mini-Excava NA NA NA	tor	
DEPTH	SAMPLING	WATER	SAMPLE DA	NUMBER OF THE PROPERTY OF THE PARTY OF THE P	The land	Singo Notice	THE HALLS
(0)	DEPTH FROM - TO	TABLE (ft)	LITHOLOGY (Description of mate	erials)	SAMPLE ID	PEN/ RECOV (in./in.)	FIELD SCREENI) (ppm)
0.0			0-6": Organic Topsoil: Silty Sand; fine to medium 30% organic material, dark brown			NA	(pgint)
			6"-1': Fill: Silty Sand; fine to medium sand, 10% sli	ghtly plastic fines, brown			
			Bottom of test pit: 1'				
0							
5.0							
			/				
-	+						diam'r.
	7						****
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-						***********	-
10,0	*****					111111111111111111111111111111111111111	
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	***********						-
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-							***********
15.0	***************************************						
	***************************************						
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							1-1-1
-							
-	****						-
1							
20.0					-	-	**********

			CINEERS & SCIENTISTS	TEST	PIT REI	ORT	
PROJ			ttage Court and Hillside Avenue	BORING ID.	Т	P-23	100000
	TION:	Newbury	oort, Massachusetts	PAGE I OF		1	
DRILI	LING CO:	NA		DATE STARTED	4/1	3/2010	_
EQUI	PMENT	Mint-Exca	vator	DATE FINISHED		3/2010	-
DRILL	LED BY	NA		SURFACE ELEVATION			_
INSPE	CTED BY:	Michael Pl	nilbin	SURFACE ELEVATION	Not De	etermined	_
-	NOT ENCO		BILIZATION TIME	TYPE SIZE: PENETRATION:	NA NA NA	tor	
DEPTH	SAMPLING	WATER		and the special properties of the state of t		TES OF INCHINA	I de promis
(ft)	DEPTH FROM - TO	TABLE (fi)	LITHOLOG* (Description of ma		SAMPLE	PEN/ RECOV	FIELD
0.0			0-6": Organic Topsoil: Silty Sand; fine to medium 30% organic material, dark brown.			(in./in.) NA	(ppm)
			6"-1": Fill: Silty Sand: fine to medium sand, 10%; Bottom of test pit 1"	dightly plastic fines, brown.			

DEPTH	SAMPLING	WATER	SAMPLE DATA DE LE COMPTE DE LE		THE PROPERTY OF	I kill ministra
(fi)	DEPTH FROM - TO	TABLE (ñ)	LITHOLOGY (Description of materials)	SAMPLE	PEN/ RECOV	FIELD
0.0			0-6": Organic Topsoil: Silty Sand; fine to medium sand, 10% slightly plastic fines, 20-	-	(in./in.)	(ppm)
-			The state of the s		NA	-
			6"-1": Fill: Silty Sand: fine to medium sand, 10% slightly plastic fines, brown.	**********		
-			Bottom of test pit: 1'			
			Section of test pre-1			
5.0						
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10.0	-					-
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15.0	· · · · · · · · · · · · · · · · · · ·				-	
13.0					-	
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	-					
-						***********
0.0						

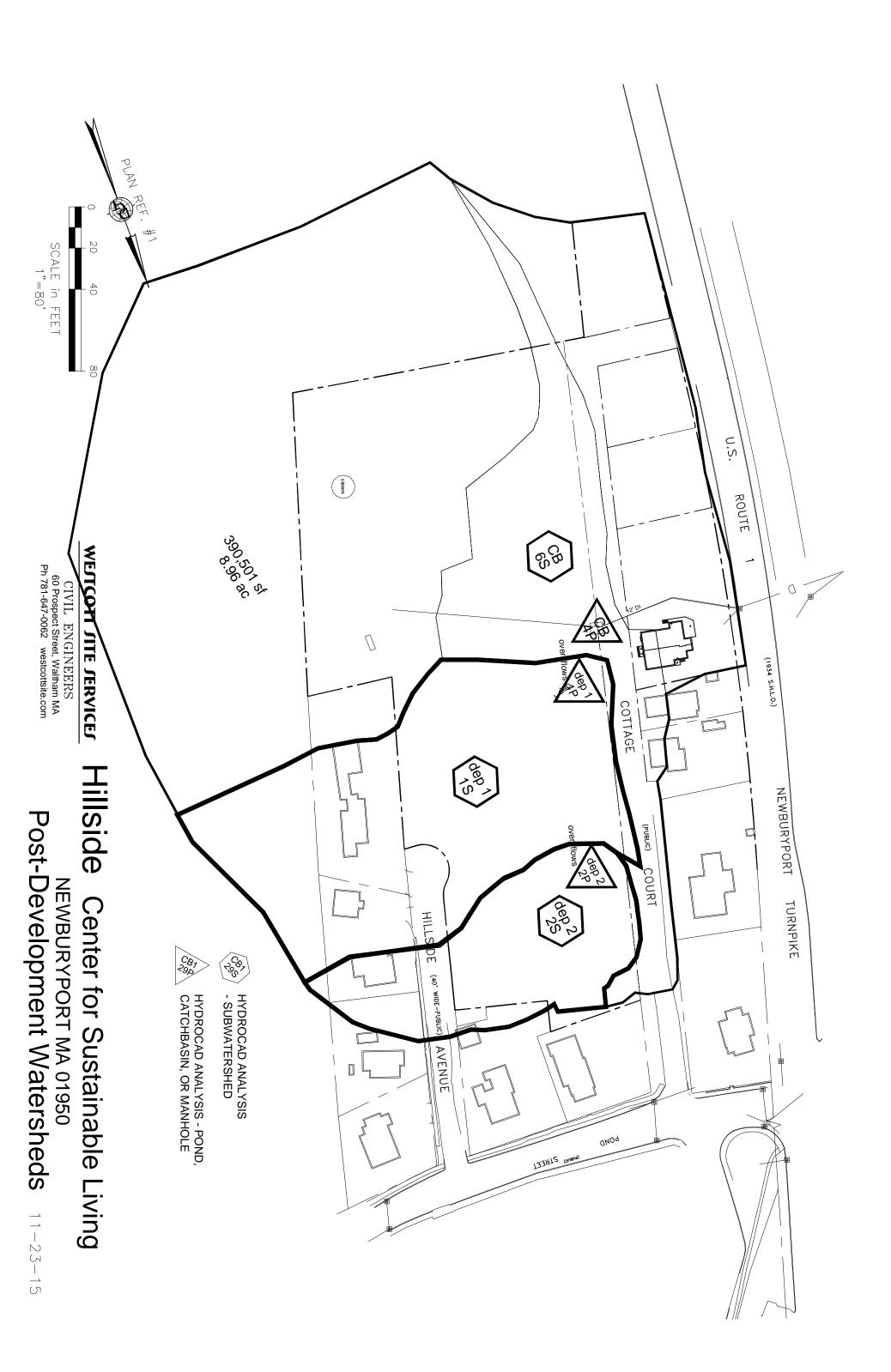
TO REFERENCE	IF THEN WORK	SANCETTA	GINEERS & SCIENTISTS	AHU SHEET TES	PHTREE	ORT	
PRO	JECT:	6733 - Co	ttage Court and Hillside Avenue	BORING ID	TI	2-24	and the second second
LOC	ATION	Newbury	port, Massachusetts	PAGE 1 OF		1	-
DRII	LLING CO:	NA		DATE STARTED	4/13	/2010	-
EQU	IPMENT	Mini-Exc	ivator	DATE FINISHED:		/2010	-
DRIL	LED BY:	NA		SURFACE ELEVAT	Terran Transaction		3
INSP	ECTED BY	Michael P	hilbin	SORFACE ELEVA	IONNot De	termined	-
			BSERVATIONS				
					Mini-Excavat	or	
	DEPTH	ENCOUNTE	ABILIZATION TIME	TYPE	NA		
	207.000 111	317	ABILIZATION TIME	SIZE:	NA.		
				PENETRATION:	NA	-	
DEPTH	SAMPLING	WATER	SAMPLE	DADA THE SHEET SHEET		The Man	
(ft)	DEPTH	TABLE	LITHOLO (Description of		SAMPLE	PEN/	FIELD
0.0	FROM - TO	(n)			(D	RECOV (m./m.)	SCREENING (ppm)
0.0			0-8": Fill: Silty Gravelly Sand; fine to medium	sand, 20% sub-rounded gravel, 10%		NA	Grants
**			slightly plastic fines, brown. Brick and clinker fi 8"-7": Fill: Silty Gravelly Sand; fine to medium	agments present	*************		
			slightly plastic fines, tan.	sand, 20-30% sub-angular gravel, 10%			
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+							
- 1						-	
5.0					-		
					***************************************		
-			Bottom of test pit: 7			-	
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10.0							
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15.0		1			-		
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	***********						************
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1							
20.0		-				-	

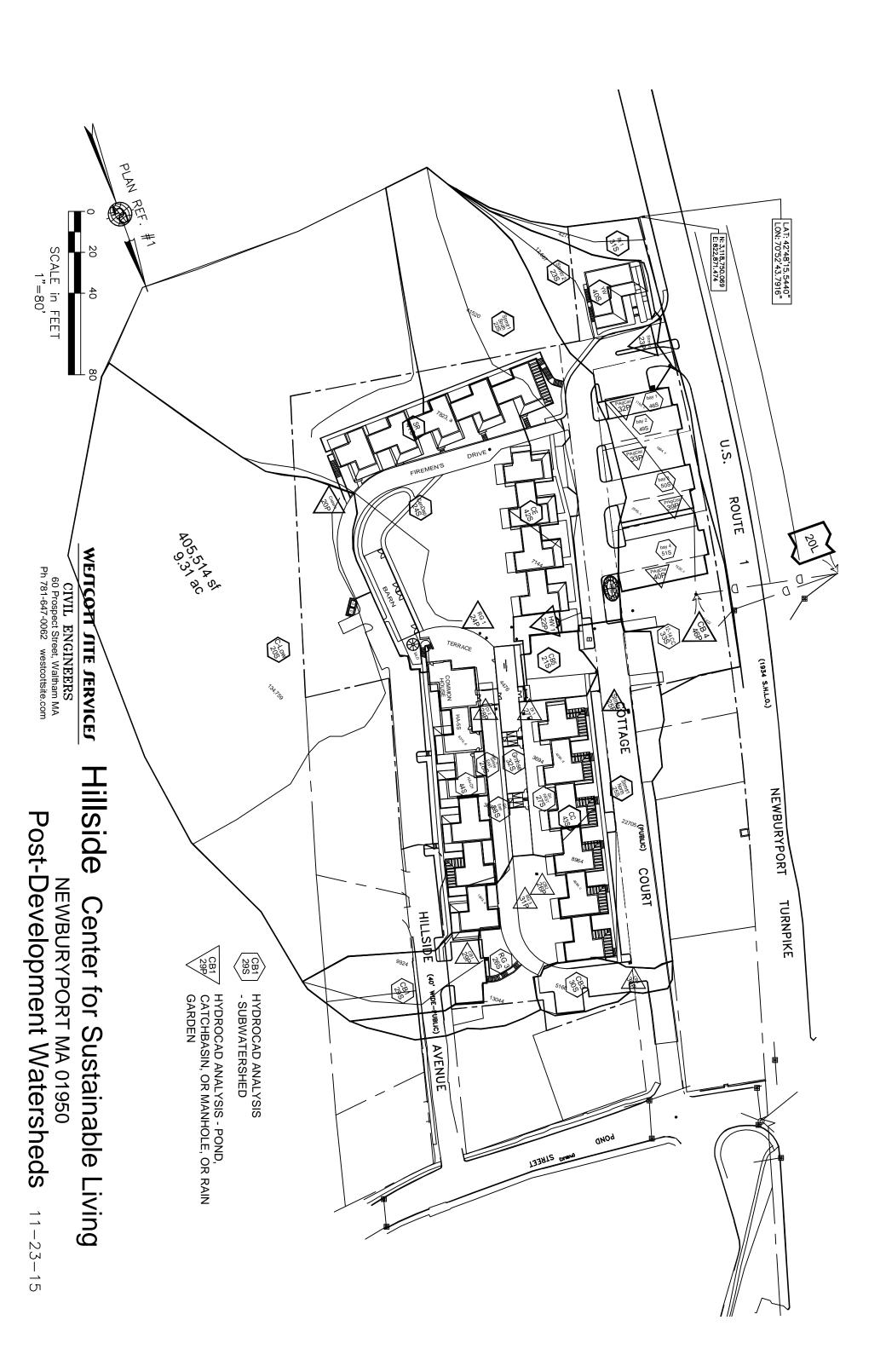
	CO PNGINEERS & SCIENTISTS	TEST PI	PREPORT -
PROJECT: LOCATION: DRILLING CO. EQUIPMENT: DRILLED BY: INSPECTED BY:	Newburyport, Massachusetts  NA  Mini-Excavator  NA  Michael Philbin	BORING ID.  PAGE 1 OF  DATE STARTED:  DATE FINISHED:  SURFACE ELEVATION	TP-25 1 4/13/2010 4/13/2010 Not Determined
	NCOUNTERED: X STABILIZATION TIME	SIZE: PENETRATION:	Excavator NA NA NA

DEPTH SAMPLING (n) DEPTH TABLE (n) Construction of materials)  0.0 Construction of materials (no. for materials)  0.3.5': Fill: Silty Gravelly Sand; fine to medium and, 20.30% sub-angular gravel, 10% (no. for for for fines) (no. for fines	
(n) DEPTH FROM-TO (6) (Description of materials)	
b. 3.5: Fill: Silty Gravelly Sand; fine to medium aand; 20-30% sub-angular gravel, 10% NA slightly plastic fines, brown. Brick fragments present. Coal fragments observed from 1.5' to 2.5' below grade.  3.5'-6.5': Native Materials: Glacial Till: Silty Sand; fine to medium sand, 10% slightly plastic fines, brown, dense.  Bottom of test pit 6.5'.	FIELD
2.5' below grade.  3.5'-6.5': Native Materials: Glacial Till: Silty Sand; fine to medium sand, 10% slightly plastic fines, brown, dense  Bottom of test pit: 6.5'.	(ppm)
3.5'-6.5': Native Materials: Glacial Till: Silty Sand; fine to medium sand; 10% slightly plastic fines, brown, dense  Bottom of test pit: 6.5'.	
8.0 Bottom of test pit: 6.5'	
Bottom of test pit: 6.5'	
8.0 Bottom of test pit: 6.5'	
Bottom of test pit: 6.5'	
10.0	
10.0	-
15.0	
15.0	
15.0	
15.0	
15.0	
15.0	-
15.0	
15.0	-
15.0	
	-
	-
20.0	

PROJECT:	6733 - Cottage Court and Hillside Avenue	The second secon	TRIBORD
LOCATION:	Newburyport, Massachusetts	BORING ID.	TP-26
DRILLING CO:	NA	PAGE 1 OF	- 1
EQUIPMENT	Mini-Excavator	DATE STARTED:	4/13/2010
DRILLED BY	NA	DATE FINISHED:	4/13/2010
NSPECTED BY	Michael Philbin	SURFACE ELEVATION_	Not Determined
	NCOUNTERED: X STABILIZATION TIME	TYPE: SIZE: PENETRATION	NA NA NA

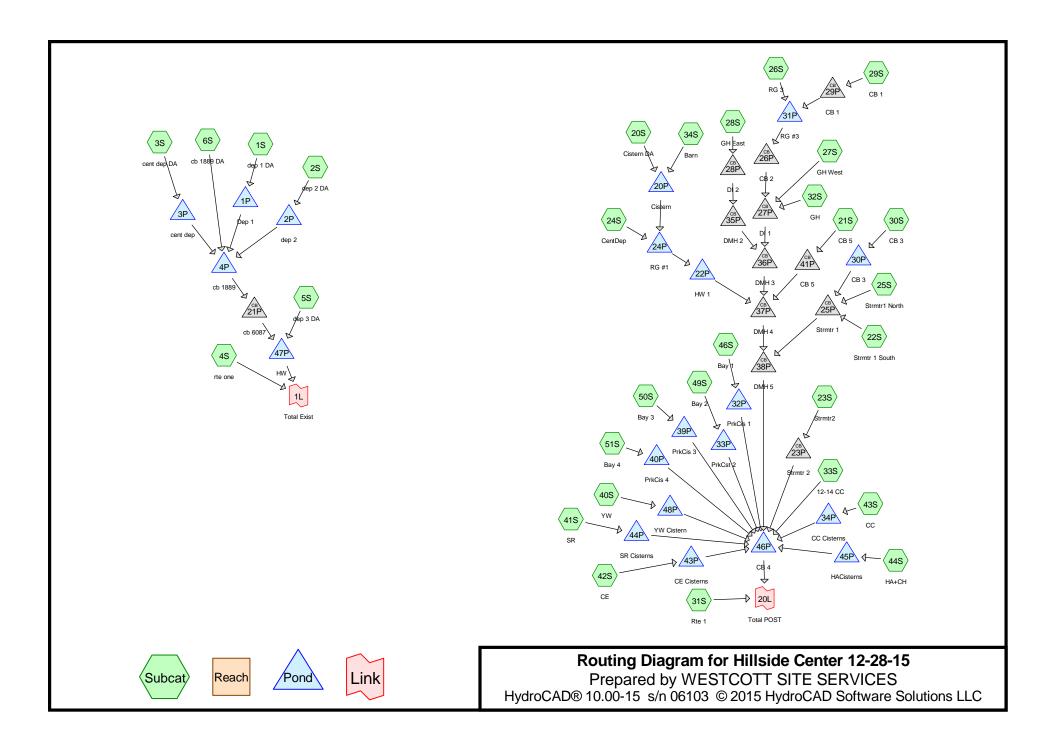
DEPTH	SAMPLING	A STATE OF THE PARTY OF THE PAR	Committee of the property of the Sample of Sample of Sample of the Sample of	na Paris Salada	ASSESSED TO SERVICE AND ADDRESS OF THE PARTY	in the state of th
(ft)	DEPTH FROM - TO	WATER TABLE (ft)	LITHOLOGY (Description of materials)	SAMPLE	PEN/ RECOV	FIELD
0.0			0-1': Fill: Silty Gravally Sand, C.		(m./in.)	(ppm)
-			0-1': Fill: Silty Gravelly Sand; fine to medium sand, 20-30% sub-angular gravel, 10% slightly plastic fines, brown. Coal fragments observed from 8" to 1' below grade.  1'-2.5': Native Materials: Glacial Till: Silts Sand		NA	
-			plastic fines, brown, dense.			
			Bottom of an an an			
			Bottom of test pit: 2.5'			
- 1						*********
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5.0	*******			1		
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# Hillside Center for Sustainable Living

# Standard 2 Peak Rate Attenuation



#### Summary for Subcatchment 1S: dep 1 DA

Runoff = 2.11 cfs @ 12.53 hrs, Volume= 15,625 cf, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	P	Area (sf)	CN	Description	1					
*		8,110	98	roof & pvm	oof & pvmnt					
		50,133	94	Fallow, bare soil, HSG D						
		16,361	84	50-75% Gı	ass cover,	Fair, HSG D				
*		4,460	98	pre-exist w	arehouse, l	HSG D				
		79,064 93 Weighted Average								
		66,494		84.10% Pe	ervious Area	A				
		12,570		15.90% lm	pervious A	rea				
	Tc	Length	Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	38.1	50	0.0400	0.02		Sheet Flow, cemetery				
						Grass: Short n= 0.150 P2= 0.04"				
	0.5	96	0.2300	3.36		Shallow Concentrated Flow, grass				
						Short Grass Pasture Kv= 7.0 fps				
	0.7	260	0.1400	6.02		Shallow Concentrated Flow, bare				
						Unpaved Kv= 16.1 fps				
	39.3	406	Total							

# Summary for Subcatchment 2S: dep 2 DA

Runoff = 0.89 cfs @ 12.24 hrs, Volume= 4,056 cf, Depth> 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Area (sf)	CN	Description	)					
*	4,525	98	roof & pvm	nt					
	13,599	68	<50% Gras	50% Grass cover, Poor, HSG A					
	8,272	77	Fallow, bar	e soil, HSG	G A				
	2,342	91	Fallow, bare soil, HSG C						
*	2,147	98	pre-exist h	ouse, HSG	A				
*	3,353	98	ore-exist w	arehouse, l	HSG C				
	34,238	81	Weighted Average						
	24,213		70.72% Pe	ervious Area	a contract of the contract of				
	10,025		29.28% lm	pervious A	rea				
	c Length	Slope	Velocity	Capacity	Description				
(mir	i) (feet)								
	i) (icci)	(ft/ft)	(ft/sec)	(cfs)					
14.		0.1200	(ft/sec) 0.03	(cfs)	Sheet Flow, cemetery				
	1 25	0.1200	0.03	(cfs)	Grass: Short n= 0.150 P2= 0.04"				
14. 0.	1 25		0.03	(cfs)	Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, grass				
0.	1 25 5 97	0.1200	0.03	(cfs)	Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, grass  Short Grass Pasture Kv= 7.0 fps				
	1 25 5 97	0.1200	0.03	(cfs)	Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, grass  Short Grass Pasture Kv= 7.0 fps  Shallow Concentrated Flow, bare soil				
0.	1 25 5 97	0.1200	0.03	(cfs)	Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, grass  Short Grass Pasture Kv= 7.0 fps				

# Summary for Subcatchment 3S: cent dep DA

Runoff = 0.02 cfs @ 23.96 hrs, Volume= 406 cf, Depth> 0.03"

# Hillside Center 12-28-15

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	A	rea (sf)	CN	Description	1					
*		2,218	98	barn						
		18,317	89	<50% Gras	<50% Grass cover, Poor, HSG D					
	1	16,882	39	lood, HSG A						
		48,880		Woods, Fa						
*		2,286	97	Dirt roads,	HSG D					
	1	88,583	44	Weighted	Average					
	1	86,365		98.82% Pe	ervious Area	a				
		2,218		1.18% lmp	ervious Are	ea				
				·						
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·				
	24.6	50	0.1200	0.03		Sheet Flow, grass				
						Grass: Short n= 0.150 P2= 0.04"				
	0.7	125	0.1600	2.80		Shallow Concentrated Flow, cemetery				
						Short Grass Pasture Kv= 7.0 fps				
	0.4	77	0.0400	3.22		Shallow Concentrated Flow, bare				
						Unpaved Kv= 16.1 fps				
	25.7	252	Total							

# Summary for Subcatchment 4S: rte one

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

A	rea (sf)	CN	Description	1	
4,389 39 >75% Grass cover, Good, HSG A					
	15,476	30	Woods, Go	ood, HSG A	
19,865 32 Weighted Average					
	19,865		100.00% F	Pervious Are	ea
Tc (min)	Length (feet)	Slope (ft/ft)	,	Capacity (cfs)	Description
12.7	20	0.1000	0.03	, ,	Sheet Flow, cemetery
0.7	96	0.2300	2.40		Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, woods
0.2	49	0.4500	3.35		Woodland Kv= 5.0 fps Shallow Concentrated Flow, woods Woodland Kv= 5.0 fps
13.6	165	Total	·	·	

# Summary for Subcatchment 5S: dep 3 DA

Runoff = 0.74 cfs @ 12.14 hrs, Volume= 2,496 cf, Depth> 0.95"

	Area (sf)	CN	Description					
*	1,388	98	roof & pvmnt					
	28,408	74	>75% Grass cover, Good, HSG C					
	1,781	36	Woods, Fair, HSG A					
	31,577	73	Weighted Average					
	30,189		95.60% Pervious Area					
	1,388		4.40% Impervious Area					

#### Hillside Center 12-28-15

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	25	0.1600	2.00		Shallow Concentrated Flow, woods
					Woodland Kv= 5.0 fps
0.4	43	0.1400	1.87		Shallow Concentrated Flow, woods
					Woodland Kv= 5.0 fps
2.1	245	0.0800	1.98		Shallow Concentrated Flow, grass
					Short Grass Pasture Kv= 7.0 fps
3.3					Direct Entry, 6 min minimum
6.0	313	Total			

# Summary for Subcatchment 6S: cb 1889 DA

Runoff = 2.37 cfs @ 12.13 hrs, Volume= 7,716 cf, Depth> 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Area (sf)	CN	Description	1				
*	8,445	98	roof & pvm	int				
	14,077	86	<50% Gras	:50% Grass cover, Poor, HSG C				
	4,389	39	>75% Grass cover, Good, HSG A					
	5,092	77	Woods, Poor, HSG C					
*	3,284	97	Dirt roads, HSG D					
	16,493	94	Fallow, bar	e soil, HSG	G D			
	51,780	86	Weighted A	/eighted Average				
	43,335		83.69% Pe	ervious Area	a e e e e e e e e e e e e e e e e e e e			
	8,445		16.31% lm	pervious A	rea			
To	: Length	Slope	Velocity	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
0.2	25	0.0800	1.98		Shallow Concentrated Flow, cemetery			
					Short Grass Pasture Kv= 7.0 fps			
0.7	107	0.1200	2.42		Shallow Concentrated Flow, cemetery			
					Short Grass Pasture Kv= 7.0 fps			
0.6	107	0.3100	2.78		Shallow Concentrated Flow, woods			
					Woodland Kv= 5.0 fps			
0.7	200	0.0950	4.96		Shallow Concentrated Flow, bare			
					Unpaved Kv= 16.1 fps			
3.8	3				Direct Entry, add for 6 min. minimum			
6.0	439	Total						

# Summary for Subcatchment 20S: Cistern DA

Runoff = 0.02 cfs @ 22.73 hrs, Volume= 526 cf, Depth> 0.05"

	Area (sf)	CN	Description
*	78,503	39	cemertery
	10,899	30	Woods, Good, HSG A
*	3,034	98	exist roofs
*	12,226	98	impervious HSG D
	25,167	39	>75% Grass cover, Good, HSG A
	2,182	80	>75% Grass cover, Good, HSG D
	132,011	46	Weighted Average
	116,751		88.44% Pervious Area
	15,260		11.56% Impervious Area

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	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
Ī	38.1	50	0.0400	0.02		Sheet Flow, cemetery
	0.5	100	0.2600	3.57		Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, cemetery
	2.4	303	0.0900	2.10		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, lawn & swale
-	41.0	153	Total			Short Grass Pasture Kv= 7.0 fps

# Summary for Subcatchment 21S: CB 5

Runoff = 0.00 cfs @ 13.04 hrs, Volume= 45 cf, Depth> 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Area	(sf)	CN	Description	Description							
*		70	98	impervious	HSG A							
		60	74	>75% Gras	-75% Grass cover, Good, HSG C							
*	1,2	274	50	Planking D								
*	2,4	86	50	Pervious D								
	3,8	90	51	Weighted A	Average							
	3,8	320		98.20% Pe	rvious Area	ì						
		70		1.80% Imp	ervious Are	a						
(		ngth eet)	Slope (ft/ft)	,	Capacity (cfs)	Description						
	6.0					Direct Entry,	direct					

#### Summary for Subcatchment 22S: Strmtr 1 South

Runoff = 0.10 cfs @ 12.73 hrs, Volume= 1,320 cf, Depth> 0.38"

	^	Area (sf)	CN	Description	,				
*					1				
		15,487	39	Cemetery	204 HCC	Λ			
*		5,314	30	Woods, Good, HSG A					
		2,400	98	•	mpervious HSG A >75% Grass cover, Good, HSG A				
		3,003	39		,	,			
		3,519	74		,	Good, HSG C			
		1,985	80		,	Good, HSG D			
		8,451	98	impervious					
_		1,736	98	impervious					
		41,895	60	Weighted					
		29,308		69.96% Pe		<del></del>			
12,587 30.04% Impervious Area					pervious A	ırea			
	_								
	Tc	Length	Slope	•		Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	38.1	50	0.0400	0.02		Sheet Flow, cemetery			
						Grass: Short n= 0.150 P2= 0.04"			
	1.2	138	0.0700	1.85		Shallow Concentrated Flow, cemetery			
						Short Grass Pasture Kv= 7.0 fps			
	0.2	46	0.4800	3.46		Shallow Concentrated Flow, woods			
						Woodland Kv= 5.0 fps			
	0.4	76	0.2100	3.21		Shallow Concentrated Flow, swale			
						Short Grass Pasture Kv= 7.0 fps			
	1.0	226	0.0360	3.85		Shallow Concentrated Flow, pvd			
_						Paved Kv= 20.3 fps			
	40.9	536	Total						

# Summary for Subcatchment 23S: Strmtr2

Runoff = 0.04 cfs @ 12.70 hrs, Volume= 436 cf, Depth> 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

_	А	rea (sf)	CN	Description	1					
*		2,231	39	Cemetery						
		2,408	30	Woods, G	Voods, Good, HSG A					
*		5,201	98	mpervious HSG A						
		2,847	39	>75% Gras	.75% Grass cover, Good, HSG A					
		12,687	61	Weighted A	Average					
		7,486		59.01% Pe	ervious Area	A				
		5,201		40.99% lm	pervious Aı	rea				
	Tc	Length	Slope	,	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	38.1	50	0.0400	0.02		Sheet Flow, cemetery				
						Grass: Short n= 0.150 P2= 0.04"				
	0.5	78	0.1300	2.52		Shallow Concentrated Flow, cemetery				
						Short Grass Pasture Kv= 7.0 fps				
	0.1	26	0.4600	3.39		Shallow Concentrated Flow, woods				
						Woodland Kv= 5.0 fps				
	0.2	59	0.4000	4.43		Shallow Concentrated Flow, swale				
						Short Grass Pasture Kv= 7.0 fps				
	0.4	67	0.0220	3.01		Shallow Concentrated Flow, paved				
_						Paved Kv= 20.3 fps				
	39.3	280	Total							

# Summary for Subcatchment 24S: CentDep

Runoff = 0.11 cfs @ 12.61 hrs, Volume= 1,847 cf, Depth> 0.26"

	Α	rea (sf)	CN	Description	1	
*		40,139	39	Cemetery		
		6,033	30	Woods, Go	ood, HSG	A
*		1,199	98	impervious	HSG A	
*		75	98	impervious	HSG C	
		5,671	39	>75% Gras	ss cover, G	lood, HSG A
		21,301	80	>75% Gras	ss cover, G	lood, HSG D
*		9,481	98	impervious	HSG D	
*		1,143	50	planking H	SG D	
*		691	50	planking H	SG A	
		85,733	56	Weighted A	Average	
		74,978		87.46% Pe	ervious Are	a
		10,755		12.54% lm	pervious A	rea
	Тс		Slope	,	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	24.6	50	0.1200	0.03		Sheet Flow, grass
						Grass: Short n= 0.150 P2= 0.04"
	0.7	125	0.1600	2.80		Shallow Concentrated Flow, woods
						Short Grass Pasture Kv= 7.0 fps
	0.4	62	0.1600	2.80		Shallow Concentrated Flow, swale
						Short Grass Pasture Kv= 7.0 fps
	0.9	184	0.0270	3.34		Shallow Concentrated Flow, paved
_						Paved Kv= 20.3 fps
	26.6	421	Total			

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#### Summary for Subcatchment 25S: Strmtr1 North

0.76 cfs @ 12.33 hrs, Volume= 4,328 cf, Depth> 2.29" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

_	Д	rea (sf)	CN	Description	1					
*		10,501	98	impervious	HSG A					
*		6,100	98	impervious	pervious HSG C					
		3,082	74	>75% Gras	75% Grass cover, Good, HSG C					
_		3,022	80	>75% Gras	ss cover, G	Good, HSG D				
	22,705 92 Weighted Average									
	6,104 26.88% Pervious Area									
	16,601 73.12% Impervious Area									
	Tc	Length	Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	22.6	26	0.0400	0.02		Sheet Flow, grass				
						Grass: Short n= 0.150 P2= 0.04"				
	1.1	265	0.0400	4.06		Shallow Concentrated Flow, paved				
_						Paved Kv= 20.3 fps				
	23.7	291	Total		·					

# Summary for Subcatchment 26S: RG 3

0.00 cfs @ 22.54 hrs, Volume= Runoff 55 cf, Depth> 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

_	Area (sf)	CN	Description					
,	1,269	98	impervious HSG A					
	9,945	39	5% Grass cover, Good, HSG A					
,	1,830	50	nking HSG A					
	13,044	46	Weighted Average					
	11,775		90.27% Pervious Area					
	1,269		9.73% Impervious Area					
	Tc Length (min) (feet)	Slop (ft/						
	6.0		Direct Entry, direct entry					

Direct Entry, direct entry

#### Summary for Subcatchment 27S: GH West

Runoff 0.14 cfs @ 12.13 hrs, Volume= 460 cf, Depth> 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Α	rea (sf)	CN	Description	1						
*		390	98	impervious	npervious HSG D						
_		3,304	80	>75% Gras	ss cover, G	ood, HSG D					
		3,694	82	Weighted A	Average						
		3,304		89.44% Pe	39.44% Pervious Area						
		390		10.56% lm	pervious A	ea					
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description					
	6.0					Direct Entry,	direct entry				

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#### Summary for Subcatchment 28S: GH East

0.04 cfs @ 12.14 hrs, Volume= 178 cf, Depth> 0.53" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Α	rea (sf)	CN	Description	1					
*		1,129	98	impervious	pervious HSG D					
*		2,880	50	planking H	anking HSG D					
		4,009	4,009 64 Weighted Average							
		2,880		71.84% Pe	1.84% Pervious Area					
		1,129		28.16% lm	pervious A	Area				
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	·				
	6.0					Direct Entry, direct entry				

#### Summary for Subcatchment 29S: CB 1

507 cf, Depth> 0.61" 0.09 cfs @ 12.25 hrs, Volume= Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Α	rea (sf)	CN	Description	1					
*		3,522	98	impervious	HSG A					
*		1,102	98	exist roof F	ist roof HSG A					
*		261	39	cemetery F	HSG A					
		5,039	39	>75% Gras	ss cover, G	ood, HSG A				
_		9,924 66 Weighted Average								
		5,300			.41% Pervious Area					
		4,624		46.59% lm	.59% Impervious Area					
					•					
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•				
	14.1	25	0.1200	0.03		Sheet Flow, cemetery				
						Grass: Short n= 0.150 P2= 0.04"				
	0.5	97	0.2000	3.13		Shallow Concentrated Flow, grrass				
						Short Grass Pasture Kv= 7.0 fps				
	0.3	75	0.0500	4.54		Shallow Concentrated Flow, pvd				
						Paved Kv= 20.3 fps				
	14.9	197	Total							

#### Summary for Subcatchment 30S: CB 3

0.18 cfs @ 12.13 hrs, Volume= 586 cf, Depth> 1.36" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Area (sf)	CN	Description	scription					
*	3,592	98	impervious HSG	ervious HSG A					
	1,574	39	>75% Grass cove	5% Grass cover, Good, HSG A					
	5,166	5,166 80 Weighted Average							
	1,574		30.47% Pervious	30.47% Pervious Area					
	3,592		69.53% Imperviou	us Area					
	Tc Length (min) (feet)		, ,	acity Description cfs)	1				
	6.0			Direct Entry	ry, direct				

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#### Summary for Subcatchment 31S: Rte 1

0.00 cfs @ 24.00 hrs, Volume= 4 cf, Depth> 0.01" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Α	rea (sf)	CN	Description	1				
-	*	709	39	Cemetery I	HSG A				
		1,784	30	Woods, Go	ood, HSG A	A			
,	*	493	98	impervious	HSG A				
		1,291	39	>75% Gras	6% Grass cover, Good, HSG A				
		4,277	42	Weighted A	Average				
		3,784		88.47% Pe	ervious Area	a			
		493		11.53% lm	pervious A	rea			
	Tc	Length	Slope	,	Capacity	Description			
	(min)	(feet)	(ft/ft	(ft/sec)	(cfs)				
	12.7	20	0.1000	0.03		Sheet Flow, cemetery			
						Grass: Short n= 0.150 P2= 0.04"			
	0.7	96	0.2300	2.40		Shallow Concentrated Flow, woods			
						Woodland Kv= 5.0 fps			
	0.2	49	0.4500	3.35		Shallow Concentrated Flow, wds			
						Woodland Kv= 5.0 fps			
	13.6	165	Total						

# Summary for Subcatchment 32S: GH

0.29 cfs @ 12.13 hrs, Volume= 1,087 cf, Depth> 2.91" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

		rea (sf)	CN	Description	1					
*		4,476	98	roof HSG	D					
		4,476		100.00% I	mpervious /	Area				
	Тс	Length	Slope			Description				
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)					
	6.0					Direct Entry,	, direct entry			

# Summary for Subcatchment 33S: 12-14 CC

Runoff 0.42 cfs @ 12.13 hrs, Volume= 1,352 cf, Depth> 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Area (sf)	CN	escription						
*	1,709	98	pervious HSG D						
	4,934	74	75% Grass cover, Good, HSG C						
	5,279	80	>75% Grass cover, Good, HSG D						
	11,922	80	30 Weighted Average						
	10,213		85.67% Pervious Area						
	1,709		14.33% Impervious Area						
(r	Tc Length min) (feet)	Slop (ft/f							
	6.0		Direct Entry, Direct						

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# Summary for Subcatchment 34S: Barn

Runoff 0.16 cfs @ 12.13 hrs, Volume= 589 cf, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	A	rea (sf)	CN	Description	1					
*		2,426	98	roof HSG I	)					
		2,426		100.00% Impervious Area						
	Тс	- 3	Slope	,		y Description				
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)					
	6.0					Direct Entry, minimum				

### **Summary for Subcatchment 40S: YW**

Runoff 0.14 cfs @ 12.13 hrs, Volume= 519 cf, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

_	Δ	rea (sf)	CN	Description	า						
*		2,136	98	roof, HSG	Α						
_		2,136		100.00% lı	00.00% Impervious Area						
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	·					
	6.0					Direct Entry, Direct					

# Summary for Subcatchment 41S: SR

Runoff 0.51 cfs @ 12.13 hrs, Volume= 1,899 cf, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Α	rea (sf)	CN	Description	)		
*		7,823	98	roof HSG	4		
		7,823		100.00% lı	mpervious /	Area	
	Tc	. 3				Description	
_	(min)	(feet)	(ft/ft	(ft/sec)	(cfs)		
	6.0					Direct Entry,	, Direct

#### Summary for Subcatchment 42S: CE

Runoff 0.39 cfs @ 12.13 hrs, Volume= 1,438 cf, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

_	Α	rea (sf)	CN	Description	1		
*		2,744	98	roof HSG (	oof HSG C		
*		3,179	98	roof HSG [	of HSG D		
_		5,923	5,923 98 Weighted Average				
		5,923		100.00% lr		Area	
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	·	
	6.0					Direct Entry, Direct	

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# Summary for Subcatchment 43S: CC

Runoff = 0.58 cfs @ 12.13 hrs, Volume= 2,177 cf, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Α	rea (sf)	CN	Description	1		
*		4,684	98	roof HSG (	oof HSG C		
*		4,280	98	roof HSG [	of HSG D		
_		8,964	98	Weighted A	Average		
		8,964		100.00% lr	mpervious /	Area	
	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description	
	6.0					Direct Entry, Direct	

#### Summary for Subcatchment 44S: HA+CH

Runoff = 0.66 cfs @ 12.13 hrs, Volume= 2,457 cf, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Area (sf)	CN	Description	1				
7	1,803	98	roof HSG	4				
,	8,315	98	roof HSG I	)				
	10,118	98	Weighted	Average				
	10,118		100.00% lı		Area			
	Tc Length	Slop	e Velocity	Capacity	Description			
	(min) (feet)	(ft/f	t) (ft/sec)	(cfs)	•			
_	6.0		•		Direct Entry, Dire	ct	<u> </u>	

#### Summary for Subcatchment 46S: Bay 1

Runoff = 0.08 cfs @ 12.13 hrs, Volume= 289 cf, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Α	rea (sf)	CN	Description	1			
*		1,192	98	porous pav	prous pavement			
		1,192	1,192 100.00% Impervious Area					
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description		
	6.0					Direct Entry, min		

#### Summary for Subcatchment 49S: Bay 2

Runoff = 0.19 cfs @ 12.13 hrs, Volume= 693 cf, Depth> 2.91"

	Area (sf)	CN	Description
*	1,192	98	porous pavement
*	1,664	98	pavement HSG C
	2,856	98	Weighted Average
	2,856		100.00% Impervious Area

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

#### Summary for Subcatchment 50S: Bay 3

Runoff = 0.27 cfs @ 12.13 hrs, Volume= 1,009 cf, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Д	rea (sf)	CN	Description	escription		
*		2,545	98	porous pay	prous pavement HSG C		
*		1,612	98	pavement I	avement HSG C		
		4,157	98	Weighted A	Average		
		4,157		100.00% lr	npervious A	Area	
	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	·	
-	6.0	(ICCI)	(1011	(10300)	(013)	Direct Entry, min	
	0.0					Direct Litti y, Tilli	

#### Summary for Subcatchment 51S: Bay 4

Runoff = 0.27 cfs @ 12.13 hrs, Volume= 990 cf, Depth> 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 2-Year Rainfall=3.15"

	Д	rea (sf)	CN	Description	escription			
*		1,530	98	porous pav	orous pavement HSG C			
*		2,549	98	pavement l	avement HSG C			
		4,079	98	Weighted A	Average			
		4,079		100.00% lr	npervious A	Area		
	Tc	Length	Slope	e Velocity	Capacity	Description		
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)			
	6.0		•	•		Direct Entry, min		

#### Summary for Pond 1P: Dep 1

Inflow Area = 79,064 sf, 15.90% Impervious, Inflow Depth > 2.37" for 2-Year event Inflow = 2.11 cfs @ 12.53 hrs, Volume= 15,625 cf

Outflow = 1.59 cfs @ 12.78 hrs, Volume= 15,624 cf, Atten= 24%, Lag= 15.2 min

Primary = 1.59 cfs @ 12.78 hrs, Volume= 15,624 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 30.04 @ 12.78 hrs Surf.Area= 4,094 sf Storage= 2,455 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 17.9 min ( 848.4 - 830.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	28.00'	18,511 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
28.00	163	0	0
29.00	253	208	208
30.00	3,899	2,076	2,284
31.00	8,477	6,188	8,472
32.00	11,600	10,039	18,511

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Device	Routing	Invert	Outlet Devices
#1	Primary	30.00'	39.0' long x 10.0' breadth Broad-Crested Rectangular Weir
	-		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Primary	26.50'	2.0" Round Culvert L= 41.0' RCP, sq.cut end projecting, Ke= 0.500
	-		Inlet / Outlet Invert= 26.50' / 25.40' S= 0.0268 '/' Cc= 0.900 n= 0.010, Flow Area= 0.02 sf
#3	Primary	27.70'	<b>4.0"</b> Round Culvert L= 41.0' RCP, sq.cut end projecting, Ke= 0.500
	-		Inlet / Outlet Invert= 27.70' / 25.40' S= 0.0561 '/' Cc= 0.900 n= 0.010, Flow Area= 0.09 sf

Primary OutFlow Max=1.59 cfs @ 12.78 hrs HW=30.04' TW=25.72' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 0.86 cfs @ 0.51 fps)

—2=Culvert (Outlet Controls 0.12 cfs @ 5.33 fps)
—3=Culvert (Inlet Controls 0.62 cfs @ 7.10 fps)

#### Summary for Pond 2P: dep 2

Inflow Area = 34,238 sf, 29.28% Impervious, Inflow Depth > 1.42" for 2-Year event

Inflow = 0.89 cfs @ 12.24 hrs, Volume= 4,056 cf

Outflow = 0.27 cfs @ 12.66 hrs, Volume= 2,299 cf, Atten= 70%, Lag= 25.4 min

Primary = 0.27 cfs @ 12.66 hrs, Volume= 2,299 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 35.51' @ 12.66 hrs Surf.Area= 2,171 sf Storage= 1,775 cf

Plug-Flow detention time= 258.4 min calculated for 2,298 cf (57% of inflow)

Center-of-Mass det. time= 118.5 min (991.2 - 872.7)

Volume	Inv	ert Avail.S	torage Sto	torage Description
#1	34.0	00' 3,	,058 cf <b>C</b> u	ustom Stage Data (Prismatic) Listed below (Recalc)
Elevatio	-	Surf.Area	Inc.Sto	
(fee	સ)	(sq-ft)	(cubic-fee	eet) (cubic-feet)
34.0	00	576		0 0
35.0	00	1,235	90	906 906
36.0	00	3,069	2,15	52 3,058
Device	Routing	Inver	t Outlet De	Devices
#1	Primary	35.50	' 100.0' loi	ong x 10.0' breadth Broad-Crested Rectangular Weir
	-		Head (fe	eet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			,	English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

**Primary OutFlow** Max=0.27 cfs @ 12.66 hrs HW=35.51' TW=25.51' (Dynamic Tailwater) **1=Broad-Crested Rectangular Weir** (Weir Controls 0.27 cfs @ 0.25 fps)

#### Summary for Pond 3P: cent dep

Primary = 0.02 cfs @ 23.97 hrs, Volume= 403 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 31.90' @ 23.97 hrs Surf.Area= 70 sf Storage= 4 cf

Plug-Flow detention time= 3.9 min calculated for 403 cf (99% of inflow)

Center-of-Mass det. time= 1.9 min (1,224.4 - 1,222.5)

Volume	Invert	Avail.Storage	Storage Description
#1	31.83'	28,303 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Elevati (fe	ion et)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
31.	.83	40	Ó	0	
33.	.00	566	355	355	
34.	.00	2,635	1,601	1,955	
35.	.00	6,530	4,583	6,538	
36.	.00	37,000	21,765	28,303	
Device	Routing	Invert	Outlet Devices		
#1	Primary	35.30'	45.0' long x 10.0	0' breadth Bro	ad-Crested Rectangular Weir
	•		Head (feet) 0.20	0.40 0.60	0.80 1.00 1.20 1.40 1.60
			Coef. (English)	2.49 2.56 2.7	70 2.69 2.68 2.69 2.67 2.64
#2	Primary	31.83'	12.0" Round Cu	Ilvert L= 201	.0' RCP, mitered to conform to fill, Ke= 0.700
	-		Inlet / Outlet Inve	ert= 31.83' / 25	5.00' S= 0.0340 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 23.97 hrs HW=31.90' TW=25.10' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

-2=Culvert (Inlet Controls 0.02 cfs @ 0.77 fps)

### Summary for Pond 4P: cb 1889

Inflow Area = 353,665 sf, 9.40% Impervious, Inflow Depth > 0.88" for 2-Year event

Inflow = 2.93 cfs @ 12.13 hrs, Volume= 26,042 cf

Outflow = 2.91 cfs @ 12.14 hrs, Volume= 26,039 cf, Atten= 1%, Lag= 0.4 min

Primary = 2.91 cfs @ 12.14 hrs, Volume= 26,039 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 25.99' @ 12.14 hrs Surf.Area= 72 sf Storage= 51 cf

Plug-Flow detention time= 0.3 min calculated for 26,039 cf (100% of inflow)

Center-of-Mass det. time= 0.2 min (865.8 - 865.6)

Volume	In	vert A	/ail.Storage	Storage	ge Description
#1	25	.00'	42,875 cf	Custon	m Stage Data (Prismatic) Listed below (Recalc)
Elevation (fee		Surf.Area (sq-ft		c.Store pic-feet)	Cum.Store (cubic-feet)
25.0	00	30		0	0
28.	00	157	•	281	281
29.0	00	623	1	390	671
30.0	00	5,783	1	3,203	3,874
32.	00	33,218	1	39,001	42,875
Device	Routing	J	nvert Ou	tlet Device	es
#1	Primary	, 2	4.90' <b>12.</b> 0	0" Round	d Culvert L= 55.0' RCP, sq.cut end projecting, Ke= 0.500
	-		Inle	t / Outlet I	Invert= 24.90' / 23.60' S= 0.0236 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

**Primary OutFlow** Max=2.91 cfs @ 12.14 hrs HW=25.99' TW=25.03' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 2.91 cfs @ 3.70 fps)

### Summary for Pond 20P: Cistern

Inflow Area = 134,437 sf, 13.16% Impervious, Inflow Depth > 0.10" for 2-Year event

Inflow = 0.16 cfs @ 12.13 hrs, Volume= 1,115 cf

Outflow = 0.03 cfs @ 16.97 hrs, Volume= 495 cf, Atten= 84%, Lag= 290.6 min

Primary = 0.03 cfs @ 16.97 hrs, Volume= 495 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.90' @ 16.97 hrs Surf.Area= 79 sf Storage= 621 cf

Plug-Flow detention time= 553.0 min calculated for 494 cf (44% of inflow)

Center-of-Mass det. time= 275.7 min (1,230.2 - 954.5)

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Volume	Invert	Avail.Storage Storage Description	
#1	32.00'	628 cf 10.00'D x 8.00'H Vert	cal Cone/Cylinder
Device	Routing	Invert Outlet Devices	
#1	Primary	39.90' 1.0" x 6.5" Horiz. Orifice/G	rate X 11.00 columns X 3 rows C= 0.600
		Limited to weir flow at low h	
#2	Primary		Broad-Crested Rectangular Weir
		Head (feet) 0.20 0.40 0.6	0 0.80 1.00 1.20 1.40 1.60
		Coef. (English) 2.68 2.70	2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.02 cfs @ 16.97 hrs HW=39.90' TW=35.08' (Dynamic Tailwater)

-1=Orifice/Grate (Weir Controls 0.02 cfs @ 0.18 fps)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 21P: cb 6087

353,665 sf, 9.40% Impervious, Inflow Depth > 0.88" for 2-Year event Inflow Area =

2.91 cfs @ 12.14 hrs, Volume= Inflow = 26,039 cf

2.91 cfs @ 12.14 hrs, Volume= 26,039 cf, Atten= 0%, Lag= 0.0 min Outflow =

2.91 cfs @ 12.14 hrs. Volume= 26.039 cf Primary

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 25.05' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	23.60'	<b>12.0"</b> Round Culvert L= 52.0' RCP, sq.cut end projecting, Ke= 0.500
			Inlet / Outlet Invert= 23.60' / 23.00' S= 0.0115 '/' Cc= 0.900 n= 0.013 Flow Area= 0.79 sf

Primary OutFlow Max=2.91 cfs @ 12.14 hrs HW=25.03' TW=24.37' (Dynamic Tailwater) 1=Culvert (Outlet Controls 2.91 cfs @ 3.70 fps)

### Summary for Pond 22P: HW 1

220,170 sf, 12.92% Impervious, Inflow Depth > 0.13" for 2-Year event Inflow Area =

0.11 cfs @ 12.62 hrs, Volume= 0.07 cfs @ 13.72 hrs, Volume= 0.07 cfs @ 13.72 hrs, Volume= Inflow = 2,319 cf

Outflow = 1,973 cf, Atten= 39%, Lag= 66.0 min

Primary = 1,973 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 32.65' @ 13.72 hrs Surf.Area= 495 sf Storage= 359 cf

Flood Elev= 34.50' Surf.Area= 2,516 sf Storage= 2,477 cf

Plug-Flow detention time= 107.7 min calculated for 1,973 cf (85% of inflow)

Center-of-Mass det. time= 51.7 min (1,112.3 - 1,060.6)

Inv	ert Avail.S	orage St	orage Description	
31.	50' 8,	939 cf <b>C</b> i	ustom Stage Data (P	ismatic) Listed below (Recalc)
on	Surf.Area	Inc.Sto	ore Cum.Store	
et)	(sq-ft)	(cubic-fe	et) (cubic-feet)	
50	131		0 0	
00	607	5	554 554	
00	1,321	9	64 1,518	
00	6,100	7,4	21 8,939	
Routing	Invert	Outlet D	evices	
Primary	31.58	12.0" R	ound Culvert L= 34	0' RCP, rounded edge headwall, Ke= 0.100
•		Inlet / O	utlet Invert= 31.58' / 2	5.32' S= 0.1841 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf
Device 1	32.50	7.0" Ver	t. Orifice/Grate C=	0.600
	31.9 on ot) 60 00 00 00 Routing Primary	31.50' 8,50	31.50' 8,939 cf Communication Surf.Area Inc.Storet) (sq-ft) (cubic-fe) (sq-ft) (cubic-fe) (sq-ft) (sq-ft) (cubic-fe) (sq-ft) (sq-ft) (cubic-fe) (sq-ft) (sq-ft	31.50' 8,939 cf Custom Stage Data (Pron Surf.Area Inc.Store Cum.Store (sq-ft) (cubic-feet) (cubic-feet)  31.50' 8,939 cf Custom Stage Data (Pron Stage Data (Pron Store Cum.Store Cum.Store (sq-ft) (cubic-feet) (cub

Primary OutFlow Max=0.07 cfs @ 13.72 hrs HW=32.65' TW=25.05' (Dynamic Tailwater)

<sup>-1=</sup>Culvert (Passes 0.07 cfs of 3.88 cfs potential flow)

**<sup>2=</sup>Orifice/Grate** (Orifice Controls 0.07 cfs @ 1.30 fps)

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# Summary for Pond 23P: Strmtr 2

Inflow Area = 12,687 sf, 40.99% Impervious, Inflow Depth > 0.41" for 2-Year event

Inflow = 0.04 cfs @ 12.70 hrs, Volume= 436 cf

Outflow = 0.04 cfs @ 12.70 hrs, Volume= 436 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.04 cfs @ 12.70 hrs, Volume= 436 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.24' @ 12.70 hrs

Flood Elev= 31.00'

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 38.16'
 12.0" Round Culvert L= 222.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 38.16' / 24.80' S= 0.0602 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.04 cfs @ 12.70 hrs HW=38.24' TW=21.93' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.04 cfs @ 1.22 fps)

### Summary for Pond 24P: RG #1

Inflow Area = 220,170 sf, 12.92% Impervious, Inflow Depth > 0.13" for 2-Year event

Inflow = 0.11 cfs @ 12.61 hrs, Volume= 2,341 cf

Outflow = 0.11 cfs @ 12.62 hrs, Volume= 2,319 cf, Atten= 0%, Lag= 0.1 min

Primary = 0.11 cfs @ 12.62 hrs, Volume= 2,319 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 35.09' @ 12.62 hrs Surf.Area= 396 sf Storage= 24 cf

Flood Elev= 36.50' Surf.Area= 10 sf Storage= 336 cf

Plug-Flow detention time= 6.9 min calculated for 2,318 cf (99% of inflow)

Center-of-Mass det. time= 3.2 min (1,060.6 - 1,057.4)

Volume	Inv	∕ert Avail.Sto	orage Storage	e Description
#1	35.	00' 3	36 cf Custom	n Stage Data (Prismatic) Listed below (Recalc)
Elevation		Surf.Area	Inc.Store	Cum.Store (cubic-feet)
(fee	et)	(sq-ft)	(cubic-feet)	(Cubic-leet)
35.0	00	131	0	0
35.0	08	394	21	21
35.5	50	500	188	209
36.0	00	10	128	336
Device	Routing	Invert	Outlet Devices	S
#1	Primary	35.08'	65.0' long x 1	1.0' breadth Broad-Crested Rectangular Weir
	3		` ,	0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00
			Coer. (English	n) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.11 cfs @ 12.62 hrs HW=35.09' TW=31.95' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 0.11 cfs @ 0.23 fps)

### Summary for Pond 25P: Strmtr 1

Inflow Area = 69,766 sf, 46.99% Impervious, Inflow Depth > 0.97" for 2-Year event

Inflow = 0.80 cfs @ 12.35 hrs, Volume= 5,649 cf

Outflow = 0.80 cfs @ 12.35 hrs, Volume= 5,649 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.80 cfs @ 12.35 hrs, Volume= 5,649 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 27.18' @ 12.35 hrs

Flood Elev= 31.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	26.78'	<b>12.0" Round Culvert</b> L= 51.0' RCP, groove end projecting, Ke= 0.200
			Inlet / Outlet Invert= 26.78' / 24.81' S= 0.0386 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

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**Primary OutFlow** Max=0.80 cfs @ 12.35 hrs HW=27.18' TW=24.46' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.80 cfs @ 2.70 fps)

### Summary for Pond 26P: CB 2

Inflow Area = 22,968 sf, 25.66% Impervious, Inflow Depth > 0.28" for 2-Year event

Inflow = 0.09 cfs @ 12.26 hrs, Volume= 541 cf

Outflow = 0.09 cfs @ 12.26 hrs, Volume= 541 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.09 cfs @ 12.26 hrs, Volume= 541 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 36.36' @ 12.26 hrs

Flood Elev= 40.05'

Device Routing Invert Outlet Devices

#1 Primary 36.22' **10.0" Round Culvert** L= 150.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 36.22' / 27.72' S= 0.0567 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

**Primary OutFlow** Max=0.09 cfs @ 12.26 hrs HW=36.36' TW=27.96' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.09 cfs @ 1.57 fps)

### Summary for Pond 27P: DI 1

Inflow Area = 31,138 sf, 34.55% Impervious, Inflow Depth > 0.80" for 2-Year event

Inflow = 0.47 cfs @ 12.15 hrs, Volume= 2,088 cf

Outflow = 0.47 cfs @ 12.15 hrs, Volume= 2,088 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.47 cfs @ 12.15 hrs, Volume= 2,088 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 28.04' @ 12.15 hrs

Flood Elev= 33.85'

Device Routing Invert Outlet Devices

#1 Primary 27.72' **10.0" Round Culvert** L= 70.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 27.72' / 26.36' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.47 cfs @ 12.15 hrs HW=28.04' TW=26.68' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.47 cfs @ 2.41 fps)

#### Summary for Pond 28P: DI 2

Inflow Area = 4,009 sf, 28.16% Impervious, Inflow Depth > 0.53" for 2-Year event

Inflow = 0.04 cfs @ 12.14 hrs, Volume= 178 cf

Outflow = 0.04 cfs @ 12.14 hrs, Volume= 178 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.04 cfs @ 12.14 hrs, Volume= 178 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 33.93' @ 12.14 hrs

Flood Elev= 35.96'

Device Routing Invert Outlet Devices

#1 Primary 33.84' **10.0" Round Culvert** L= 66.0' RCP, groove end projecting, Ke= 0.200

 $\label{eq:local_state} Inlet \, / \, Outlet \, Invert= \, 33.84' \, / \, 33.00' \quad S= \, 0.0127 \, ' / \quad Cc= \, 0.900 \quad n= \, 0.010, \ \, Flow \, Area= \, 0.55 \, \, sf \, \, Area= \, 0.000 \, \, Area= \, 0.000$ 

Primary OutFlow Max=0.04 cfs @ 12.14 hrs HW=33.93' TW=33.09' (Dynamic Tailwater)

**1=Culvert** (Inlet Controls 0.04 cfs @ 1.30 fps)

### Summary for Pond 29P: CB 1

Inflow Area = 9,924 sf, 46.59% Impervious, Inflow Depth > 0.61" for 2-Year event

Inflow = 0.09 cfs @ 12.25 hrs, Volume= 507 cf

Outflow = 0.09 cfs @ 12.25 hrs, Volume= 507 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.09 cfs @ 12.25 hrs, Volume= 507 cf

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Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 53.89' @ 12.25 hrs

Flood Elev= 57.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	53.75'	<b>10.0" Round Culvert</b> L= 46.0' RCP, groove end projecting, Ke= 0.200
	-		Inlet / Outlet Invert= 53.75' / 42.60' S= 0.2424 '/' Cc= 0.900 n= 0.010. Flow Area= 0.55 sf

**Primary OutFlow** Max=0.09 cfs @ 12.25 hrs HW=53.89' TW=39.81' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.09 cfs @ 1.57 fps)

### Summary for Pond 30P: CB 3

Inflow Area = 5,166 sf, 69.53% Impervious, Inflow Depth > 1.36" for 2-Year event

Inflow = 0.18 cfs @ 12.13 hrs, Volume= 586 cf

Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min

Primary = 0.00 cfs @ 0.00 hrs, Volume = 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 37.14' @ 24.00 hrs Surf.Area= 802 sf Storage= 586 cf

Flood Elev= 43.50' Surf.Area= 802 sf Storage= 1,789 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	36.00'	701 cf	20.83'W x 38.50'L x 3.54'H Field A
			2,841 cf Overall - 1,088 cf Embedded = 1,753 cf x 40.0% Voids
#2A	36.50'	1,088 cf	Cultec R-330XLHD x 20 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

1,789 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	39.04'	<b>8.0" Round Culvert</b> L= 268.0' RCP, groove end projecting, Ke= 0.200
	-		Inlet / Outlet Invert= 39.04' / 26.50' S= 0.0468 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf
#2	Device 1	43.04'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=26.78' (Dynamic Tailwater)

1=Culvert (Controls 0.00 cfs)

**2=Orifice/Grate** (Controls 0.00 cfs)

#### Summary for Pond 31P: RG #3

Inflow Area = 22,968 sf, 25.66% Impervious, Inflow Depth > 0.29" for 2-Year event

Inflow = 0.09 cfs @ 12.25 hrs, Volume= 562 cf

Outflow = 0.09 cfs @ 12.26 hrs, Volume= 541 cf, Atten= 0%, Lag= 0.3 min

Primary = 0.09 cfs @ 12.26 hrs, Volume= 541 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.81' @ 12.26 hrs Surf.Area= 395 sf Storage= 24 cf

Flood Elev= 43.50' Surf.Area= 500 sf Storage= 244 cf

Plug-Flow detention time= 27.7 min calculated for 540 cf (96% of inflow)

Center-of-Mass det. time= 9.6 min ( 967.8 - 958.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	39.72'	244 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.72	131	0	0
39.80	394	21	21
40.30	500	224	244

Device Routing Invert Outlet Devices

#1 Primary 39.80' 65.0' long x 1.0' breadth Broad-Crested Rectangular Weir

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.09 cfs @ 12.26 hrs HW=39.81' TW=36.36' (Dynamic Tailwater) 1=Broad-Crested Rectangular Weir (Weir Controls 0.09 cfs @ 0.22 fps)

#### Summary for Pond 32P: PrkCis 1

Inflow Area = 1,192 sf,100.00% Impervious, Inflow Depth > 2.91" for 2-Year event

Inflow = 0.08 cfs @ 12.13 hrs, Volume= 289 cf

Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.86' @ 24.00 hrs Surf.Area= 863 sf Storage= 289 cf

Flood Elev= 42.00' Surf.Area= 863 sf Storage= 1,733 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	38.20'	689 cf	19.17'W x 45.00'L x 3.21'H Field A
			2,767 cf Overall - 1,044 cf Embedded = 1,723 cf x 40.0% Voids
#2A	38.70'	1,044 cf	Cultec R-280HD x 24 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	39.20'	<b>4.0" Round Culvert</b> L= 100.0' RCP, mitered to conform to fill, Ke= 0.700
	-		Inlet / Outlet Invert= 39.20' / 30.00' S= 0.0920 '/' Cc= 0.900 n= 0.010. Flow Area= 0.09 sf

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=38.20' TW=21.50' (Dynamic Tailwater) **1=Culvert** (Controls 0.00 cfs)

### Summary for Pond 33P: PrkCst 2

Inflow Area = 2,856 sf,100.00% Impervious, Inflow Depth > 2.91" for 2-Year event

Inflow = 0.19 cfs @ 12.13 hrs, Volume= 693 cf

Outflow = 0.01 cfs @ 14.39 hrs, Volume= 213 cf, Atten= 95%, Lag= 135.9 min

Primary = 0.01 cfs @ 14.39 hrs, Volume = 213 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 37.48' @ 14.39 hrs Surf.Area= 728 sf Storage= 501 cf

Flood Elev= 41.00' Surf.Area= 728 sf Storage= 1,459 cf

Plug-Flow detention time= 526.3 min calculated for 213 cf (31% of inflow)

Center-of-Mass det. time= 293.0 min (1,052.9 - 759.9)

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Volume	Invert	Avail.Storage	Storage Description
#1A	36.40'	585 cf	19.17'W x 38.00'L x 3.21'H Field A
			2,337 cf Overall - 874 cf Embedded = 1,462 cf x 40.0% Voids
#2A	36.90'	874 cf	Cultec R-280HD x 20 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		4 450 -4	Tatal Assallation Otamana

1,459 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	<b>2.0" Round Culvert</b> L= 50.0' RCP, mitered to conform to fill, Ke= 0.700
	-		Inlet / Outlet Invert= 37.40' / 34.66' S= 0.0548 '/' Cc= 0.900 n= 0.010. Flow Area= 0.02 sf

**Primary OutFlow** Max=0.01 cfs @ 14.39 hrs HW=37.48' TW=21.77' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.01 cfs @ 0.85 fps)

#### Summary for Pond 34P: CC Cisterns

Inflow Area = 8,964 sf,100.00% Impervious, Inflow Depth > 2.91" for 2-Year event

Inflow = 0.58 cfs @ 12.13 hrs, Volume= 2,177 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 305 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 305 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 42.87' @ 24.00 hrs Surf.Area= 1,362 sf Storage= 1,871 cf

Plug-Flow detention time= 660.4 min calculated for 305 cf (14% of inflow)

Center-of-Mass det. time= 283.2 min (1,043.1 - 759.9)

Volume	ln۱	∕ert Ava	il.Storage	Storage	e Description	
#1	41.	50'	5,448 cf	Custon	n Stage Data (Pris	rismatic) Listed below (Recalc) x 6
Elevation	on	Surf.Area	Inc	.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
41.5	50	227		0	0	
45.5	50	227		908	908	
Device	Routing	ln	vert Outle	et Device	S	
#1	Primary	41	50' <b>0.2</b> "	Vert. Ori	fice/Grate X 6 rd	rows with 1.0" cc spacing C= 0.600

**Primary OutFlow** Max=0.01 cfs @ 24.00 hrs HW=42.87' TW=21.69' (Dynamic Tailwater) **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 5.17 fps)

#### Summary for Pond 35P: DMH 2

Inflow Area = 4,009 sf, 28.16% Impervious, Inflow Depth > 0.53" for 2-Year event

Inflow = 0.04 cfs @ 12.14 hrs, Volume= 178 cf

Outflow = 0.04 cfs @ 12.14 hrs, Volume= 178 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.04 cfs @ 12.14 hrs, Volume= 178 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 33.09' @ 12.14 hrs

Flood Elev= 35.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	<b>12.0"</b> Round Culvert L= 26.0' RCP, groove end projecting, Ke= 0.200
			Inlet / Outlet Inverte 33.00' / 24.90' Se 0.3115 '/' Cc= 0.900 n= 0.010 Flow Area = 0.79 sf

**Primary OutFlow** Max=0.04 cfs @ 12.14 hrs HW=33.09' TW=26.67' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.04 cfs @ 1.27 fps)

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### Summary for Pond 36P: DMH 3

Inflow Area = 35,147 sf, 33.82% Impervious, Inflow Depth > 0.77" for 2-Year event

Inflow = 0.51 cfs @ 12.15 hrs, Volume= 2,266 cf

Outflow = 0.51 cfs @ 12.15 hrs, Volume= 2,266 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.51 cfs @ 12.15 hrs, Volume= 2,266 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 26.68' @ 12.15 hrs

Flood Elev= 34.00'

Device Routing Invert Outlet Devices

#1 Primary 26.36' **12.0" Round Culvert** L= 73.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 26.36' / 24.90' S= 0.0200 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.51 cfs @ 12.15 hrs HW=26.68' TW=25.22' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.51 cfs @ 2.39 fps)

### Summary for Pond 37P: DMH 4

Inflow Area = 259,207 sf, 15.59% Impervious, Inflow Depth > 0.20" for 2-Year event

Inflow = 0.51 cfs @ 12.15 hrs, Volume= 4,284 cf

Outflow = 0.51 cfs @ 12.15 hrs, Volume= 4,284 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.51 cfs @ 12.15 hrs, Volume= 4,284 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 25.22' @ 12.15 hrs

Flood Elev= 34.50'

Device Routing Invert Outlet Devices

#1 Primary 24.90' **12.0" Round Culvert** L= 37.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 24.90' / 24.00' S= 0.0243 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.51 cfs @ 12.15 hrs HW=25.22' TW=24.45' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.51 cfs @ 2.39 fps)

#### Summary for Pond 38P: DMH 5

Inflow Area = 328,973 sf, 22.24% Impervious, Inflow Depth > 0.36" for 2-Year event

Inflow = 1.02 cfs @ 12.30 hrs, Volume= 9,932 cf

Outflow = 1.02 cfs @ 12.30 hrs, Volume= 9,932 cf, Atten= 0%, Lag= 0.0 min

Primary = 1.02 cfs @ 12.30 hrs, Volume= 9,932 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 24.46' @ 12.30 hrs

Flood Elev= 33.00'

Device Routing Invert Outlet Devices

#1 Primary 24.00' **12.0" Round Culvert** L= 59.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 24.00' / 23.00' S= 0.0169 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.02 cfs @ 12.30 hrs HW=24.46' TW=22.08' (Dynamic Tailwater)

1=Culvert (Inlet Controls 1.02 cfs @ 2.89 fps)

# Summary for Pond 39P: PrkCis 3

Inflow Area = 4,157 sf,100.00% Impervious, Inflow Depth > 2.91" for 2-Year event

Inflow = 0.27 cfs @ 12.13 hrs, Volume= 1,009 cf

Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 35.74' @ 24.00 hrs Surf.Area= 1,226 sf Storage= 1,009 cf

Flood Elev= 39.00' Surf.Area= 1,226 sf Storage= 2,485 cf

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Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	967 cf	23.58'W x 52.00'L x 3.21'H Field A
			3,934 cf Overall - 1,518 cf Embedded = 2,417 cf x 40.0% Voids
#2A	35.00'	1,518 cf	Cultec R-280HD x 35 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 5 rows

2,485 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	<b>6.0" Round Culvert</b> L= 50.0' RCP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 37.40' / 32.46' S= 0.0988 '/' Cc= 0.900 n= 0.010, Flow Area= 0.20 sf
#2	Primary	37.80'	80.0' long x 10.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' TW=21.50' (Dynamic Tailwater)

1=Culvert (Controls 0.00 cfs)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

# Summary for Pond 40P: PrkCis 4

Inflow Area =	4,079 sf,100.00% Impervio	us, Inflow Depth > 2.91"	for 2-Year event

Inflow = 0.27 cfs @ 12.13 hrs, Volume= 990 cf

Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 32.03' @ 24.00 hrs Surf.Area= 1,094 sf Storage= 990 cf Flood Elev= 40.00' Surf.Area= 1,094 sf Storage= 2,453 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	30.67'	947 cf	20.83'W x 52.50'L x 3.54'H Field A
			3,874 cf Overall - 1,505 cf Embedded = 2,369 cf x 40.0% Voids
#2A	31.17'	1,505 cf	Cultec R-330XLHD x 28 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
`		0.450 (	T ( 1 A 3 1 1 C)

2,453 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	32.75'	<b>4.0" Round Culvert</b> L= 60.0' RCP, mitered to conform to fill, Ke= 0.700
	•		Inlet / Outlet Invert= 32.75' / 32.26' S= 0.0082 '/' Cc= 0.900 n= 0.010. Flow Area= 0.09 sf

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=30.67' TW=21.50' (Dynamic Tailwater)  $^{-1}$ =Culvert (Controls 0.00 cfs)

### Summary for Pond 41P: CB 5

Inflow Area = 3,890 sf, 1.80% Impervious, Inflow Depth > 0.14" for 2-Year event

Inflow = 0.00 cfs @ 13.04 hrs, Volume = 45 cf

Outflow = 0.00 cfs @ 13.04 hrs, Volume= 45 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.00 cfs @ 13.04 hrs, Volume= 45 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

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Peak Elev= 28.96' @ 13.04 hrs Flood Elev= 31.00'

Device Routing Invert Outlet Devices

#1 Primary 28.94' **10.0" Round Culvert** L= 38.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 28.94' / 25.90' S= 0.0800 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.00 cfs @ 13.04 hrs HW=28.96' TW=25.02' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.00 cfs @ 0.56 fps)

# Summary for Pond 43P: CE Cisterns

Inflow Area = 5,923 sf,100.00% Impervious, Inflow Depth > 2.91" for 2-Year event

Inflow = 0.39 cfs @ 12.13 hrs, Volume= 1,438 cf

Outflow = 0.00 cfs @ 24.00 hrs, Volume= 216 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.00 cfs @ 24.00 hrs, Volume= 216 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs /  $3\,$ 

Peak Elev= 44.35' @ 24.00 hrs Surf.Area= 908 sf Storage= 1,222 cf

Plug-Flow detention time= 631.8 min calculated for 216 cf (15% of inflow)

Center-of-Mass det. time= 266.9 min (1,026.7 - 759.9)

Volume	Inv	ert Avail	.Storage	Storage	Description	
#1	43.0	00'	3,632 cf	Custom	Stage Data (Pr	rismatic) Listed below (Recalc) x 4
Elevation	า	Surf.Area	Inc	Store	Cum.Store	
(feet)	)	(sq-ft)	(cubio	c-feet)	(cubic-feet)	
43.00	)	227		0	0	
47.00	)	227		908	908	
Device I	Routing	Inv	ert Outle	t Devices		
11.4	D	40.4	00' 00"	Inst Orifi	aniCuata V 4	

#1 Primary 43.00' **0.2" Vert. Orifice/Grate** X 4 rows with 1.0" cc spacing C= 0.600

Primary OutFlow Max=0.00 cfs @ 24.00 hrs HW=44.35' TW=21.69' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.00 cfs @ 5.30 fps)

### Summary for Pond 44P: SR Cisterns

Inflow Area = 7,823 sf,100.00% Impervious, Inflow Depth > 2.91" for 2-Year event

Inflow = 0.51 cfs @ 12.13 hrs, Volume = 1,899 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 271 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 271 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 47.43' @ 24.00 hrs Surf.Area= 1,135 sf Storage= 1,629 cf

Plug-Flow detention time= 649.0 min calculated for 271 cf (14% of inflow)

Center-of-Mass det. time= 274.6 min (1,034.5 - 759.9)

Volume	Inv	ert Ava	il.Storage	Storage I	Description	
#1	46.	00'	5,675 cf	Custom	Stage Data (Pr	ismatic) Listed below (Recalc) x 5
Elevation	on	Surf.Area	Inc	.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
46.0	00	227		0	0	
51.0	00	227		1,135	1,135	
Device	Routing	In	vert Outle	et Devices		
#1	Primary	46	.00' <b>0.2"</b>	Vert. Orific	ce/Grate X5 r	ows with 1.0" cc spacing C= 0.600

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=47.43' TW=21.69' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.01 cfs @ 5.40 fps)

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# Summary for Pond 45P: HACisterns

Inflow Area = 10,118 sf,100.00% Impervious, Inflow Depth > 2.91" for 2-Year event

Inflow = 0.66 cfs @ 12.13 hrs, Volume= 2,457 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 331 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 331 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 45.56' @ 24.00 hrs Surf.Area= 1,362 sf Storage= 2,125 cf

Plug-Flow detention time= 663.9 min calculated for 331 cf (13% of inflow)

Center-of-Mass det. time= 279.9 min (1,039.7 - 759.9)

Volume	ln۱	ert Av	ail.Storage	Storage	e Description					
#1	44.	00'	6,810 cf		Custom Stage Data (Prismatic) Listed below (Recalc) x 6					
Elevation (fee		Surf.Area (sq-ft)		c.Store ic-feet)	Cum.Store (cubic-feet)					
44.0	00	227		0	0					
49.0	00	227		1,135	1,135					
Device	Routing	Ir	nvert Out	et Device	S					
#1	Primary	44	4.00' <b>0.2"</b>	Vert. Ori	fice/Grate X 6	rows with 1.0" cc spacing C= 0.600				

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=45.56' TW=21.69' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.01 cfs @ 5.57 fps)

### Summary for Pond 46P: CB 4

Inflow Area = 400,830 sf, 31.77% Impervious, Inflow Depth > 0.40" for 2-Year event

Inflow = 1.41 cfs @ 12.15 hrs, Volume= 13,344 cf

Outflow = 1.22 cfs @ 12.27 hrs, Volume= 13,246 cf, Atten= 14%, Lag= 6.9 min

Primary = 1.22 cfs @ 12.27 hrs, Volume= 13,246 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 22.08' @ 12.27 hrs Surf.Area= 1,297 sf Storage= 348 cf

Plug-Flow detention time= 8.8 min calculated for 13,241 cf (99% of inflow)

Center-of-Mass det. time= 5.1 min ( 927.2 - 922.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	27.80'	23,576 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2A	21.50'	259 cf	21.79'W x 59.50'L x 6.00'H Field A
			7,780 cf Overall - 7,131 cf Embedded = 648 cf $\times$ 40.0% Voids
#3A	22.00'	5,694 cf	StormTrap SingleTrap 5-0 x 3 Inside #2
			Inside= 101.7"W x 60.0"H => 38.33 sf x 15.40'L = 590.2 cf
			Outside= $101.7$ "W x $66.0$ "H => $46.64$ sf x $15.40$ 'L = $718.0$ cf
			8.48' x 46.19' Core + 6.66' Border = 21.79' x 59.50' System

29,529 cf Total Available Storage

#### Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.80	4	0	0
28.00	1,704	171	171
30.00	4,071	5,775	5,946
32.00	13,559	17,630	23,576

Device	Routing	Invert	Outlet Devices
#1	Primary	21.50'	<b>12.0" Round Culvert</b> L= 141.0' RCP, sq.cut end projecting, Ke= 0.500
			Inlet / Outlet Invert= 21.50' / 19.40' S= 0.0149 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.22 cfs @ 12.27 hrs HW=22.08' TW=0.00' (Dynamic Tailwater)

1=Culvert (Inlet Controls 1.22 cfs @ 2.59 fps)

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### Summary for Pond 47P: HW

Inflow Area = 385,242 sf, 8.99% Impervious, Inflow Depth > 0.89" for 2-Year event

3.65 cfs @ 12.14 hrs, Volume= Inflow 28.535 cf

Outflow 3.57 cfs @ 12.15 hrs, Volume= 28,531 cf, Atten= 2%, Lag= 0.9 min =

3.57 cfs @ 12.15 hrs, Volume= Primary 28,531 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 24.39' @ 12.15 hrs Surf.Area= 140 sf Storage= 104 cf

Plug-Flow detention time= 0.3 min calculated for 28,531 cf (100% of inflow)

Center-of-Mass det. time= 0.2 min (868.9 - 868.7)

Volume	ln	vert A	vail.Stor	rage S	torage D	escription					
#1	23	23.00' 75,612 cf		2 cf <b>C</b>	Custom Stage Data (Prismatic) Listed below (Recalc)						
Elevation	on	Surf.Area	a	Inc.St	ore	Cum.Store					
(fee	et)	(sq-ft	)	(cubic-feet)		(cubic-feet)					
23.0	00	10	)		0	0					
26.0	00	290		4	450	450					
28.0	00	2,812		3,1	102	3,552					
32.0	00	33,218	3	72,0	060	75,612					
Device	Routing		Invert	Outlet D	Devices						
#1	Primary	2	23.00'	12.0" R	Round Co	ulvert L= 141.	0' RCP,	sq.cut en	d projecting,	Ke= 0.500	
	,			Inlet / O	utlet Inve	ert= 23.00' / 19	.40' S=	0.0255 '/'	Cc= 0.900	n= 0.013.	Flow Area= 0.79 sf

Primary OutFlow Max=3.56 cfs @ 12.15 hrs HW=24.39' TW=0.00' (Dynamic Tailwater)

-1=Culvert (Inlet Controls 3.56 cfs @ 4.54 fps)

### Summary for Pond 48P: YW Cistern

2,136 sf,100.00% Impervious, Inflow Depth > 2.91" for 2-Year event Inflow Area =

0.14 cfs @ 12.13 hrs, Volume= Inflow = 519 cf

0.01 cfs @ 14.87 hrs, Volume= 0.01 cfs @ 14.87 hrs, Volume= Outflow 287 cf, Atten= 96%, Lag= 164.5 min =

Primary 287 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 53.77' @ 14.87 hrs Surf.Area= 392 sf Storage= 303 cf

Plug-Flow detention time= 361.1 min calculated for 287 cf (55% of inflow)

Center-of-Mass det. time= 214.4 min (974.3 - 759.9)

Volume	Inv	ert Ava	il.Storage	Storage	Description	n				
#1	53.	00'	1,176 cf	Custom	Stage Data	a (Prismatio	Listed belo	w (Recalc)		
Elevation	on	Surf.Area	Inc	:Store	Cum.S	tore				
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-f	feet)				
53.0	00	392		0		0				
56.0	00	392		1,176	1,	176				
Device	Routing	In	vert Outle	et Devices	;					
#1	Primary	53	.00' <b>0.5"</b>	Vert. Orif	ice/Grate	C= 0.600				

Primary OutFlow Max=0.01 cfs @ 14.87 hrs HW=53.77' TW=21.75' (Dynamic Tailwater) 1=Orifice/Grate (Orifice Controls 0.01 cfs @ 4.18 fps)

### Summary for Link 1L: Total Exist

405,107 sf, 8.55% Impervious, Inflow Depth > 0.85" for 2-Year event Inflow Area =

3.57 cfs @ 12.15 hrs, Volume= Inflow 28,531 cf

Primary 3.57 cfs @ 12.15 hrs, Volume= 28,531 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow. Time Span= 0.00-24.00 hrs. dt= 0.01 hrs

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### **Summary for Link 20L: Total POST**

405,107 sf, 31.55% Impervious, Inflow Depth > 0.39" for 2-Year event 1.22 cfs @ 12.27 hrs, Volume= 13,250 cf 1.22 cfs @ 12.27 hrs, Volume= 13,250 cf, Atten= 0%, Lag= 0.0 rd Inflow Area =

Inflow =

Primary = 13,250 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

# Summary for Subcatchment 1S: dep 1 DA

Runoff = 3.45 cfs @ 12.53 hrs, Volume= 26,287 cf, Depth> 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	P	Area (sf)	CN	Description	1							
*		8,110	98	roof & pvm	of & pvmnt							
		50,133	94	Fallow, bar	e soil, HSG	G D						
		16,361	84	50-75% Gr	-75% Grass cover, Fair, HSG D							
*		4,460	98	pre-exist w	arehouse, I	HSG D						
		79,064	93	Weighted A	Average							
		66,494		84.10% Pe	ervious Area							
		12,570		15.90% lm	pervious A	rea						
	_											
	Tc		Slope	•	Capacity	Description						
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
	38.1	50	0.0400	0.02		Sheet Flow, cemetery						
						Grass: Short n= 0.150 P2= 0.04"						
	0.5	96	0.2300	3.36		Shallow Concentrated Flow, grass						
						Short Grass Pasture Kv= 7.0 fps						
	0.7	260	0.1400	6.02		Shallow Concentrated Flow, bare						
_						Unpaved Kv= 16.1 fps						
	39.3	406	Total									

# Summary for Subcatchment 2S: dep 2 DA

Runoff = 1.78 cfs @ 12.23 hrs, Volume= 8,051 cf, Depth> 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

			011	<b>.</b>								
_		rea (sf)	CN	Description								
*		4,525	98	roof & pvm	oof & pvmnt							
		13,599	68	<50% Gras	s cover, Po	oor, HSG A						
		8,272	77	Fallow, bar	e soil, HSG	S A						
		2,342	91	Fallow, bar	e soil, HSG	S C						
*		2,147	98	pre-exist ho	ouse, HSG	A						
*		3,353	98	pre-exist w	arehouse, l	HSG C						
	34,238 81 Weighted Average											
		24,213		70.72% Pe	rvious Area	a						
		10,025		29.28% lm	pervious A	rea						
		- ,										
	Tc	Length	Slope	Velocity	Capacity	Description						
	(min)	(feet)	(ft/ft)	•	(cfs)	'						
_	14.1	25	0.1200	0.03	` '	Sheet Flow, cemetery						
						Grass: Short n= 0.150 P2= 0.04"						
	0.5	97	0.2200	3.28		Shallow Concentrated Flow, grass						
		-				Short Grass Pasture Kv= 7.0 fps						
	0.6	216	0.1300	5.80		Shallow Concentrated Flow, bare soil						
						Unpaved Kv= 16.1 fps						
_	15.2	338	Total									

# Summary for Subcatchment 3S: cent dep DA

Runoff = 0.27 cfs @ 12.71 hrs, Volume = 5,344 cf, Depth > 0.34"

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	Α	rea (sf)	CN	Description	1							
*		2,218	98	barn	parn							
		18,317	89	<50% Gras	ss cover, P	oor, HSG D						
	1	16,882	39	>75% Gras	ss cover, G	lood, HSG A						
		48,880		Woods, Fa								
*		2,286	97	Dirt roads,	HSG D							
	1	88,583	44	Weighted A	Average							
	1	86,365		98.82% Pe	ervious Area	a						
		2,218		1.18% Imp	ervious Are	ea						
	Tc	Length	Slope	Velocity	Capacity	Description						
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
	24.6	50	0.1200	0.03		Sheet Flow, grass						
						Grass: Short n= 0.150 P2= 0.04"						
	0.7	125	0.1600	2.80		Shallow Concentrated Flow, cemetery						
						Short Grass Pasture Kv= 7.0 fps						
	0.4	77	0.0400	3.22		Shallow Concentrated Flow, bare						
_						Unpaved Kv= 16.1 fps						
	25.7	252	Total									

# Summary for Subcatchment 4S: rte one

Runoff = 0.00 cfs @ 24.00 hrs, Volume= 24 cf, Depth> 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Area (sf)	CN	Description	1	
	4,389			,	ood, HSG A
	15,476	30	Woods, Go	ood, HSG <i>F</i>	4
	19,865	32	Weighted A	Average	
	19,865		100.00% F	Pervious Are	ea
Tc (min)	Length (feet)	Slope (ft/ft)	•	Capacity (cfs)	Description
12.7	20	0.1000	0.03		Sheet Flow, cemetery
0.7	96	0.2300	2.40		Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, woods
0.2	49	0.4500	3.35		Woodland Kv= 5.0 fps  Shallow Concentrated Flow, woods  Woodland Kv= 5.0 fps
13.6	165	Total			

# Summary for Subcatchment 5S: dep 3 DA

Runoff = 1.74 cfs @ 12.13 hrs, Volume= 5,640 cf, Depth> 2.14"

	Area (sf)	CN	Description
*	1,388	98	roof & pvmnt
	28,408	74	>75% Grass cover, Good, HSG C
	1,781	36	Woods, Fair, HSG A
	31,577	73	Weighted Average
	30,189		95.60% Pervious Area
	1,388		4.40% Impervious Area

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	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	0.2	25	0.1600	2.00		Shallow Concentrated Flow, woods
	0.4	43	0.1400	1.87		Woodland Kv= 5.0 fps Shallow Concentrated Flow, woods
	2.1	245	0.0800	1.98		Woodland Kv= 5.0 fps Shallow Concentrated Flow, grass
	۷.۱	243	0.0600	1.90		Short Grass Pasture Kv= 7.0 fps
	3.3					Direct Entry, 6 min minimum
Ī	6.0	313	Total			

# Summary for Subcatchment 6S: cb 1889 DA

Runoff = 4.28 cfs @ 12.13 hrs, Volume= 14,252 cf, Depth> 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

,	Area (sf)	CN	Description		
*	8,445	98	roof & pvm		
	14,077	86	<50% Gra	ss cover, Po	oor, HSG C
	4,389	39	>75% Gras	ss cover, G	ood, HSG A
	5,092	77	Woods, Po	or, HSG C	
*	3,284	97	Dirt roads,	,	
	16,493	94	,	e soil, HSG	: n
					<u> </u>
	51,780	86	Weighted		
	43,335			ervious Area	
	8,445		16.31% lm	pervious A	rea
Tc	Length	Slope	<ul><li>Velocity</li></ul>	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
0.2	25	0.0800	1.98		Shallow Concentrated Flow, cemetery
0		0.0000			Short Grass Pasture Kv= 7.0 fps
0.7	107	0.1200	2.42		Shallow Concentrated Flow, cemetery
0.7	107	0.1200	2.42		Short Grass Pasture Kv= 7.0 fps
0.0	407	0.0400	0.70		·
0.6	107	0.3100	2.78		Shallow Concentrated Flow, woods
					Woodland Kv= 5.0 fps
0.7	200	0.0950	4.96		Shallow Concentrated Flow, bare
					Unpaved Kv= 16.1 fps
3.8					Direct Entry, add for 6 min. minimum
6.0	439	Total			

# Summary for Subcatchment 20S: Cistern DA

Runoff = 0.27 cfs @ 12.81 hrs, Volume= 4,613 cf, Depth> 0.42"

	Area (sf)	CN	Description
*	78,503	39	cemertery
	10,899	30	Woods, Good, HSG A
*	3,034	98	exist roofs
*	12,226	98	impervious HSG D
	25,167	39	>75% Grass cover, Good, HSG A
	2,182	80	>75% Grass cover, Good, HSG D
	132,011	46	Weighted Average
	116,751		88.44% Pervious Area
	15,260		11.56% Impervious Area

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	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	38.1	50	0.0400	0.02		Sheet Flow, cemetery
	0.5	100	0.2600	3.57		Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, cemetery
	2.4	303	0.0900	2.10		Short Grass Pasture Kv= 7.0 fps  Shallow Concentrated Flow, lawn & swale  Short Grass Pasture Kv= 7.0 fps
-	41 O	153	Total			Onor Oraco ractaro Tri- Fro Ipo

# Summary for Subcatchment 21S: CB 5

Runoff = 0.05 cfs @ 12.15 hrs, Volume= 218 cf, Depth> 0.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Α	rea (sf)	CN	Description								
*		70	98	impervious	pervious HSG A							
		60	74	>75% Gras	75% Grass cover, Good, HSG C							
*		1,274	50	Planking D	anking D							
*		2,486	50	Pervious D								
		3,890	51	Weighted A	eighted Average							
		3,820		98.20% Pe	rvious Area	ì						
		70		1.80% lmp	ervious Are	a						
	т.	l = == ==4h=	Class	- \/alaaitr	Canacitu	December						
	Tc	Length	Slope	•	Capacity	Description						
_	(min)	(feet)	(ft/ft	t) (ft/sec)	(cfs)							
	6.0					Direct Entry,	, direct					

# Summary for Subcatchment 22S: Strmtr 1 South

Runoff = 0.49 cfs @ 12.59 hrs, Volume= 4,113 cf, Depth> 1.18"

_	A	Area (sf)	CN	Description	1								
*		15,487	39	Cemetery									
		5,314	30		oods, Good, HSG A								
*		2,400	98	impervious	HSG A								
		3,003	39	>75% Gra	ss cover, G	ood, HSG A							
		3,519	74	>75% Gras	ss cover, G	ood, HSG C							
		1,985	80			ood, HSG D							
*		8,451	98	impervious	HSG C								
*		1,736	98	impervious	HSG D								
		41,895	60	Weighted	Average								
		29,308		69.96% Pe	ervious Area	a							
		12,587		30.04% Im	pervious A	rea							
	Tc	Length	Slope	Velocity	Capacity	Description							
_	(min)	(feet)	(ft/ft	(ft/sec)	(cfs)								
	38.1	50	0.0400	0.02		Sheet Flow, cemetery							
						Grass: Short n= 0.150 P2= 0.04"							
	1.2	138	0.0700	1.85		Shallow Concentrated Flow, cemetery							
						Short Grass Pasture Kv= 7.0 fps							
	0.2	46	0.4800	3.46		Shallow Concentrated Flow, woods							
						Woodland Kv= 5.0 fps							
	0.4	76	0.2100	3.21		Shallow Concentrated Flow, swale							
						Short Grass Pasture Kv= 7.0 fps							
	1.0	226	0.0360	3.85		Shallow Concentrated Flow, pvd							
_						Paved Kv= 20.3 fps							
	40.9	536	Total										

### Summary for Subcatchment 23S: Strmtr2

Runoff = 0.16 cfs @ 12.58 hrs, Volume= 1,315 cf, Depth> 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Α	rea (sf)	CN	Description	1								
*		2,231	39	Cemetery									
		2,408	30	Woods, G	ods, Good, HSG A								
*		5,201	98	impervious	HSG A								
		2,847	39	>75% Gras	ss cover, G	ood, HSG A							
		12,687	61	Weighted	Average								
		7,486		59.01% Pe	ervious Area	a a constant of the constant o							
		5,201		40.99% Im	pervious A	rea							
	Tc	Length	Slope	Velocity	Capacity	Description							
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)								
	38.1	50	0.0400	0.02		Sheet Flow, cemetery							
						Grass: Short n= 0.150 P2= 0.04"							
	0.5	78	0.1300	2.52		Shallow Concentrated Flow, cemetery							
						Short Grass Pasture Kv= 7.0 fps							
	0.1	26	0.4600	3.39		Shallow Concentrated Flow, woods							
						Woodland Kv= 5.0 fps							
	0.2	59	0.4000	4.43		Shallow Concentrated Flow, swale							
						Short Grass Pasture Kv= 7.0 fps							
	0.4	67	0.0220	3.01		Shallow Concentrated Flow, paved							
_						Paved Kv= 20.3 fps							
	39.3	280	Total										

### Summary for Subcatchment 24S: CentDep

Runoff = 0.92 cfs @ 12.43 hrs, Volume= 6,724 cf, Depth> 0.94"

	Δ	rea (sf)	CN	Description	١	
*		40,139	39	Cemetery		
		6,033	30	Woods, Go	ood, HSG	A
*		1,199	98	impervious	HSG A	
*		75	98	impervious	HSG C	
		5,671	39	>75% Gras	ss cover, G	lood, HSG A
		21,301	80	>75% Gras	ss cover, G	lood, HSG D
*		9,481	98	impervious	HSG D	
*		1,143	50	planking H	SG D	
*		691	50	planking H	SG A	
		85,733	56	Weighted A	Average	
		74,978		87.46% Pe	ervious Are	a
		10,755		12.54% lm	pervious A	rea
		Length	Slope	•		Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	24.6	50	0.1200	0.03		Sheet Flow, grass
						Grass: Short n= 0.150 P2= 0.04"
	0.7	125	0.1600	2.80		Shallow Concentrated Flow, woods
						Short Grass Pasture Kv= 7.0 fps
	0.4	62	0.1600	2.80		Shallow Concentrated Flow, swale
						Short Grass Pasture Kv= 7.0 fps
	0.9	184	0.0270	3.34		Shallow Concentrated Flow, paved
_						Paved Kv= 20.3 fps
	26.6	421	Total			

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#### Summary for Subcatchment 25S: Strmtr1 North

7,377 cf, Depth> 3.90" Runoff 1.27 cfs @ 12.33 hrs, Volume=

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	A	rea (sf)	CN	Description	1	
*		10,501	98	impervious	HSG A	
*		6,100	98	impervious	HSG C	
		3,082	74	>75% Gras	ss cover, G	Good, HSG C
		3,022	80	>75% Gras	ss cover, G	Good, HSG D
		22,705	92	Weighted A	Average	
		6,104		26.88% Pe		<del></del>
		16,601		73.12% lm	pervious A	Area
	Tc	Length	Slope	•	Capacity	, '
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	22.6	26	0.0400	0.02		Sheet Flow, grass
						Grass: Short n= 0.150 P2= 0.04"
	1.1	265	0.0400	4.06		Shallow Concentrated Flow, paved
_						Paved Kv= 20.3 fps
	23.7	291	Total			

# Summary for Subcatchment 26S: RG 3

0.05 cfs @ 12.16 hrs, Volume= 469 cf, Depth> 0.43" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

_	Ar	ea (sf)	CN	Description							
,	•	1,269	98	impervious	pervious HSG A						
		9,945	39	>75% Gras	5% Grass cover, Good, HSG A						
,	•	1,830	50	planking H	SG A						
	1	13,044	46	Weighted A	Average						
	1	11,775		90.27% Pe	rvious Area	ì					
		1,269		9.73% Imp	ervious Are	a					
	_		01		<b>.</b>	5					
		Length	Slope	,	Capacity	Description					
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)						
	6.0					Direct Entry,	direct entry				

Direct Entry, direct entry

### Summary for Subcatchment 27S: GH West

Runoff 0.27 cfs @ 12.13 hrs, Volume= 899 cf, Depth> 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Area (sf)	CN	Description	1				
*	390	98	impervious	HSG D				
	3,304	80	>75% Gras	ss cover, G	ood, HSG D			
	3,694	82	Weighted /	Average				
	3,304		89.44% Pe	ervious Area	a			
	390		10.56% lm	pervious A	rea			
(m	Tc Length	Slope (ft/ft	,	Capacity (cfs)	Description			
	6.0				Direct Entry,	, direct entry		

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### Summary for Subcatchment 28S: GH East

Runoff = 0.15 cfs @ 12.14 hrs, Volume= 490 cf, Depth> 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Α	rea (sf)	CN	Description	1						
*		1,129	98	impervious	pervious HSG D						
*		2,880	50	planking H	SG D						
		4,009	64	Weighted /	Average						
		2,880		71.84% Pe	ervious Area	ea					
		1,129		28.16% lm	pervious A	Area					
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	·					
	6.0					Direct Entry, direct entry					

# Summary for Subcatchment 29S: CB 1

Runoff = 0.28 cfs @ 12.24 hrs, Volume= 1,325 cf, Depth> 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Α	rea (sf)	CN	Description	1					
*		3,522	98	impervious	HSG A					
*		1,102	98	exist roof H	ISG A					
*		261	39	cemetery F	emetery HSG A					
		5,039	39	>75% Gras	ss cover, G	ood, HSG A				
		9,924	66	Weighted A	Average					
		5,300		53.41% Pe	ervious Area	a				
		4,624		46.59% lm	pervious A	rea				
					•					
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·				
	14.1	25	0.1200	0.03		Sheet Flow, cemetery				
						Grass: Short n= 0.150 P2= 0.04"				
	0.5	97	0.2000	3.13		Shallow Concentrated Flow, grrass				
						Short Grass Pasture Kv= 7.0 fps				
	0.3	75	0.0500	4.54		Shallow Concentrated Flow, pvd				
						Paved Kv= 20.3 fps				
	14.9	197	Total							

### Summary for Subcatchment 30S: CB 3

Runoff = 0.36 cfs @ 12.13 hrs, Volume= 1,179 cf, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Area (sf)	CN	Description			
*	3,592	98	impervious HSG A			
	1,574	39	>75% Grass cover, Good, HSG A			
	5,166 80 Weighted Average					
	1,574		30.47% Pervious Area			
	3,592		69.53% Impervious Area			
- (mi	Γc Length n) (feet)	Slop (ft/f				

Direct Entry, direct

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### Summary for Subcatchment 31S: Rte 1

0.00 cfs @ 12.65 hrs, Volume= 95 cf, Depth> 0.27" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	P	Area (sf)	CN	Description	1						
*	:	709	39	Cemetery I	HSG A						
		1,784	30	Woods, Go	ood, HSG A	A					
*	•	493	98	impervious HSG A							
		1,291	39	>75% Gras	ss cover, G	Good, HSG A					
		4,277	42	Weighted A	Average						
		3,784		88.47% Pe	ervious Area	a					
		493		11.53% Im	pervious A	ırea					
	Tc	Length	Slope	,	Capacity	Description					
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	12.7	20	0.1000	0.03		Sheet Flow, cemetery					
						Grass: Short n= 0.150 P2= 0.04"					
	0.7	96	0.2300	2.40		Shallow Concentrated Flow, woods					
						Woodland Kv= 5.0 fps					
	0.2	49	0.4500	3.35		Shallow Concentrated Flow, wds					
_						Woodland Kv= 5.0 fps					
	13.6	165	Total								

# Summary for Subcatchment 32S: GH

0.45 cfs @ 12.13 hrs, Volume= 1,711 cf, Depth> 4.59" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Д	rea (sf)	CN	Description	1					
*		4,476	98	roof HSG I	)					
		4,476 100.00% Impervious Area								
	Tc	- 3		Velocity		Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	6.0					Direct Entry,	direct entry			

### Summary for Subcatchment 33S: 12-14 CC

Runoff 0.84 cfs @ 12.13 hrs, Volume= 2,722 cf, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Area (sf)	CN	Description						
*	1,709	98	mpervious HSG D						
	4,934	74	>75% Grass cover, Good, HSG C						
	5,279 80 >75% Grass cover, Good, HSG D								
	11,922 80 Weighted Average								
	10,213		85.67% Pervious Area						
	1,709		14.33% Impervious Area						
	Tc Length (min) (feet)	Slop (ft/f							
	6.0		Direct Entry, Direct						

6.0

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### Summary for Subcatchment 34S: Barn

Runoff 0.24 cfs @ 12.13 hrs, Volume= 927 cf, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Area (sf)	CN	Description	า		
*	2,426	98	roof HSG I	)		
	2,426		100.00% lı	mpervious /	Area	
	Tc Length (min) (feet)	Slop (ft/f		Capacity (cfs)	Description	

# Direct Entry, minimum

### Summary for Subcatchment 40S: YW

Runoff 0.21 cfs @ 12.13 hrs, Volume= 817 cf, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

_	Δ	rea (sf)	CN	Description	า	
*		2,136	98	roof, HSG	Α	
_		2,136		100.00% lı	mpervious /	Area
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	·
	6.0					Direct Entry, Direct

# Summary for Subcatchment 41S: SR

Runoff 0.79 cfs @ 12.13 hrs, Volume= 2,991 cf, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Α	rea (sf)	CN	Description	1		
*		7,823	98	roof HSG	4		
_		7,823		100.00% lı	mpervious /	Area	
	Tc	- 3				Description	
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)		
	6.0					Direct Entry,	, Direct

### Summary for Subcatchment 42S: CE

Runoff 0.59 cfs @ 12.13 hrs, Volume= 2,264 cf, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Δ	rea (sf)	CN	Description	)		
*		2,744	98	roof HSG (	)		
*		3,179	98	roof HSG [	)		
		5,923	98	Weighted A	Average		
		5,923		100.00% lr	mpervious A	s Area	
	Тс	Length	Slope	e Velocity	Capacity	/ Description	
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	·	
	6.0					Direct Entry, Direct	

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#### Summary for Subcatchment 43S: CC

Runoff = 0.90 cfs @ 12.13 hrs, Volume= 3,427 cf, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Α	rea (sf)	CN	Description	1	
*		4,684	98	roof HSG (	)	
*		4,280	98	roof HSG [	)	
		8,964	98	Weighted A	Average	
		8,964		100.00% lr	npervious A	Area
	Tc	Length	Slope	,	Capacity	· · · · · · · · · · · · · · · · · · ·
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	
	6.0					Direct Entry, Direct

# Summary for Subcatchment 44S: HA+CH

Runoff = 1.02 cfs @ 12.13 hrs, Volume= 3,868 cf, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

_	Д	rea (sf)	CN	Description	1		
-	*	1,803	98	roof HSG A	A		
	*	8,315	98	roof HSG [	)		
		10,118	98	Weighted A	Average		
		10,118		100.00% lr	mpervious /	√rea	
	Tc	Length	Slope	e Velocity	Capacity	Description	
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)		
	6.0					Direct Entry, Direct	

### Summary for Subcatchment 46S: Bay 1

Runoff = 0.12 cfs @ 12.13 hrs, Volume= 456 cf, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	A	rea (sf)	CN	Description	1					
*		1,192	98	porous pav	prous pavement					
		1,192		100.00% Impervious Area						
	Тс	Length	Slope	Velocity	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	6.0					Direct Entry, min				

# Summary for Subcatchment 49S: Bay 2

Runoff = 0.29 cfs @ 12.13 hrs, Volume= 1,092 cf, Depth> 4.59"

	Area (sf)	CN	Description
*	1,192	98	porous pavement
*	1,664	98	pavement HSG C
	2,856	98	Weighted Average
	2,856		100.00% Impervious Area

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

6.0 Direct Entry, min

### Summary for Subcatchment 50S: Bay 3

Runoff 0.42 cfs @ 12.13 hrs, Volume= 1,589 cf, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Д	rea (sf)	CN	Description	1						
7	•	2,545	98	porous pav	prous pavement HSG C						
4	f	1,612	98	pavement l	pavement HSG C						
		4,157	98	Weighted A	Average						
		4,157		100.00% lr	mpervious A	Area					
	Tc	Length	Slope	e Velocity	Capacity	Description					
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)						
_	6.0					Direct Entry, min					

Direct Entry, min

### Summary for Subcatchment 51S: Bay 4

Runoff 0.41 cfs @ 12.13 hrs, Volume= 1,559 cf, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 10-Year Rainfall=4.83"

	Д	rea (sf)	CN	Description	escription						
*		1,530	98	porous pav	rous pavement HSG C						
*		2,549	98	pavement l	vement HSG C						
		4,079	98	Weighted A	eighted Average						
		4,079		100.00% lr	npervious A	Area					
	Tc	Length	Slope	e Velocity	Capacity	Description					
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)						
_	6.0					Direct Entry, min					

### Summary for Pond 1P: Dep 1

Inflow Area = 79,064 sf, 15.90% Impervious, Inflow Depth > 3.99" for 10-Year event 3.45 cfs @ 12.53 hrs, Volume= Inflow 26,287 cf Outflow 3.41 cfs @ 12.55 hrs, Volume= 26,287 cf, Atten= 1%, Lag= 1.5 min Primary 3.41 cfs @ 12.55 hrs, Volume= 26,287 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 30.10' @ 12.56 hrs Surf.Area= 4,346 sf Storage= 2,686 cf

10,039

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 16.2 min (829.2 - 813.0)

11,600

32.00

Volume	Invert	Avail.Storage	Storage	Description	
#1	28.00'	18,511 cf	Custom	Stage Data (Pris	matic) Listed below (Recalc)
Elevation	Surf.A	rea Inc	.Store	Cum.Store	
(feet)	(so	q-ft) (cubi	c-feet)	(cubic-feet)	
28.00		163	0	0	
29.00	2	253	208	208	
30.00	3,8	899	2,076	2,284	
31.00	8,4	477	6,188	8,472	

18,511

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Device	Routing	Invert	Outlet Devices
#1	Primary	30.00'	39.0' long x 10.0' breadth Broad-Crested Rectangular Weir
	-		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Primary	26.50'	2.0" Round Culvert L= 41.0' RCP, sq.cut end projecting, Ke= 0.500
	-		Inlet / Outlet Invert= 26.50' / 25.40' S= 0.0268 '/' Cc= 0.900 n= 0.010, Flow Area= 0.02 sf
#3	Primary	27.70'	<b>4.0"</b> Round Culvert L= 41.0' RCP, sq.cut end projecting, Ke= 0.500
	-		Inlet / Outlet Invert= 27.70' / 25.40' S= 0.0561 '/' Cc= 0.900 n= 0.010, Flow Area= 0.09 sf

Primary OutFlow Max=3.41 cfs @ 12.55 hrs HW=30.10' TW=28.65' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 2.96 cfs @ 0.78 fps)

2=Culvert (Outlet Controls 0.07 cfs @ 3.09 fps)
3=Culvert (Outlet Controls 0.39 cfs @ 4.41 fps)

#### Summary for Pond 2P: dep 2

Inflow Area = 34,238 sf, 29.28% Impervious, Inflow Depth > 2.82" for 10-Year event

Inflow = 1.78 cfs @ 12.23 hrs, Volume= 8,051 cf

Outflow = 1.78 cfs @ 12.24 hrs, Volume= 6,291 cf, Atten= 0%, Lag= 0.5 min

Primary = 1.78 cfs @ 12.24 hrs, Volume= 6,291 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 35.54' @ 12.24 hrs Surf.Area= 2,220 sf Storage= 1,833 cf

Plug-Flow detention time= 147.1 min calculated for 6,291 cf (78% of inflow)

Center-of-Mass det. time= 52.8 min (900.3 - 847.5)

Volume	Inv	<i>r</i> ert Avail.St	orage Storag	ge Description		
#1	34.	00' 3,	058 cf <b>Custo</b>	om Stage Data (Prismatic) Listed below (Recalc)		
Elevation		Surf.Area	Inc.Store	Cum.Store		
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)		
34.0	00	576	0	0		
35.0	00	1,235	906	906		
36.0	00	3,069	2,152	3,058		
Device	Routing	Invert	Outlet Device	ees		
#1 Primary 35.50'		Head (feet)	100.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64			
			Coei. (Eligiis	511) 2.49 2.30 2.70 2.09 2.00 2.09 2.07 2.04		

**Primary OutFlow** Max=1.78 cfs @ 12.24 hrs HW=35.54' TW=28.85' (Dynamic Tailwater) **1=Broad-Crested Rectangular Weir** (Weir Controls 1.78 cfs @ 0.48 fps)

### Summary for Pond 3P: cent dep

Inflow Area = 188,583 sf, 1.18% Impervious, Inflow Depth > 0.34" for 10-Year event

Inflow = 0.27 cfs @ 12.71 hrs, Volume= 5,344 cf

Outflow = 0.27 cfs @ 12.74 hrs, Volume= 5,333 cf, Atten= 0%, Lag= 1.7 min

Primary = 0.27 cfs @ 12.74 hrs, Volume= 5,333 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 32.10' @ 12.74 hrs Surf.Area= 163 sf Storage= 28 cf

Plug-Flow detention time= 1.9 min calculated for 5,333 cf (100% of inflow)

Center-of-Mass det. time= 1.1 min (1,025.1 - 1,024.0)

Volume	Invert	Avail.Storage	Storage Description
#1	31.83'	28,303 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Elevation (feet)		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
31.		40	0	0	_
33.		566	355	355	
34.	00	2,635	1,601	1,955	j
35.	00	6,530	4,583	6,538	}
36.	00	37,000	21,765	28,303	}
Device	Routing	Invert	Outlet Devices		
#1	Primary	35.30'	45.0' long x 10.0	)' breadth Bro	oad-Crested Rectangular Weir
	•		Head (feet) 0.20	0.40 0.60	0.80 1.00 1.20 1.40 1.60
			Coef. (English)	2.49 2.56 2.7	2.70 2.69 2.68 2.69 2.67 2.64
#2	Primary	31.83'	12.0" Round Cu	livert L= 201	1.0' RCP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Inve	ert= 31.83' / 25	25.00' S= 0.0340 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.27 cfs @ 12.74 hrs HW=32.10' TW=28.61' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

-2=Culvert (Inlet Controls 0.27 cfs @ 1.57 fps)

### Summary for Pond 4P: cb 1889

Inflow Area = 353,665 sf, 9.40% Impervious, Inflow Depth > 1.77" for 10-Year event

Inflow = 5.91 cfs @ 12.14 hrs, Volume= 52,163 cf

Outflow = 4.70 cfs @ 12.63 hrs, Volume= 52,157 cf, Atten= 20%, Lag= 29.8 min

Primary = 4.70 cfs @ 12.63 hrs, Volume= 52,157 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 28.89' @ 12.21 hrs Surf.Area= 572 sf Storage= 605 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 0.5 min (856.3 - 855.7)

Volume	In	vert Ava	ail.Storage	Storag	e Description	
#1	25.	.00'	42,875 cf	Custor	m Stage Data (Prismatic) Listed below (Recalc)	
				<b>.</b>		
Elevation	on	Surf.Area	Inc	.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
25.0	00	30		0	0	
28.0	00	157		281	281	
29.0	00	623		390	671	
30.0	00	5,783		3,203	3,874	
32.0	00	33,218	3	9,001	42,875	
Device	Routing	Ir	vert Outle	et Device	es	
#1	Primary	24	.90' <b>12.0</b> '	' Round	d Culvert L= 55.0' RCP, sq.cut end projecting, Ke= 0.500	
	·				Invert= 24.90' / 23.60' S= 0.0236 '/' Cc= 0.900 n= 0.013, F	low Area= 0.79 sf

**Primary OutFlow** Max=4.70 cfs @ 12.63 hrs HW=28.77' TW=26.98' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 4.70 cfs @ 5.99 fps)

### Summary for Pond 20P: Cistern

Inflow Area = 134,437 sf, 13.16% Impervious, Inflow Depth > 0.49" for 10-Year event

Inflow = 0.29 cfs @ 12.81 hrs, Volume= 5,541 cf

Outflow = 0.29 cfs @ 12.81 hrs, Volume= 4,920 cf, Atten= 0%, Lag= 0.1 min

Primary = 0.29 cfs @ 12.81 hrs, Volume= 4,920 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.92' @ 12.81 hrs Surf.Area= 79 sf Storage= 622 cf

Plug-Flow detention time= 94.1 min calculated for 4,920 cf (89% of inflow)

Center-of-Mass det. time= 43.6 min (1,013.1 - 969.5)

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Volume	Invert	Avail.Stora	age Storage Description
#1	32.00'	628	B cf 10.00'D x 8.00'H Vertical Cone/Cylinder
Device	Routing	Invert	Outlet Devices
#1	Primary	39.90'	<b>1.0"</b> x <b>6.5"</b> Horiz. Orifice/Grate X <b>11.00</b> columns X 3 rows C= 0.600
			Limited to weir flow at low heads
#2	Primary		100.0' long x 15.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.29 cfs @ 12.81 hrs HW=39.92' TW=35.11' (Dynamic Tailwater)

-1=Orifice/Grate (Weir Controls 0.29 cfs @ 0.42 fps)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 21P: cb 6087

353,665 sf, 9.40% Impervious, Inflow Depth > 1.77" for 10-Year event Inflow Area =

Inflow 4.70 cfs @ 12.63 hrs, Volume= 52.157 cf =

4.70 cfs @ 12.63 hrs, Volume= Outflow = 52,157 cf, Atten= 0%, Lag= 0.0 min

4.70 cfs @ 12.63 hrs. Volume= 52.157 cf Primary

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 27.29' @ 12.20 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	23.60'	<b>12.0"</b> Round Culvert L= 52.0' RCP, sq.cut end projecting, Ke= 0.500
	-		Inlet / Outlet Invert= 23.60' / 23.00' S= 0.0115 '/' Cc= 0.900 n= 0.013. Flow Area= 0.79 sf

Primary OutFlow Max=4.70 cfs @ 12.63 hrs HW=26.98' TW=25.23' (Dynamic Tailwater) 1=Culvert (Outlet Controls 4.70 cfs @ 5.99 fps)

### Summary for Pond 22P: HW 1

220,170 sf, 12.92% Impervious, Inflow Depth > 0.63" for 10-Year event Inflow Area =

1.10 cfs @ 12.45 hrs, Volume= 0.90 cfs @ 12.70 hrs, Volume= 0.90 cfs @ 12.70 hrs, Volume= Inflow 11,619 cf

Outflow = 11,226 cf, Atten= 18%, Lag= 14.8 min

Primary 11,226 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 33.28' @ 12.70 hrs Surf.Area= 806 sf Storage= 751 cf

Flood Elev= 34.50' Surf.Area= 2,516 sf Storage= 2,477 cf

Plug-Flow detention time= 27.1 min calculated for 11,221 cf (97% of inflow)

Center-of-Mass det. time= 11.6 min (985.1 - 973.5)

Inv	ert Avail.S	torage S	Storage Descri	ption	
31.	50' 8	,939 cf <b>C</b>	Custom Stage	Data (Pris	matic) Listed below (Recalc)
			_		
on	Surf.Area	Inc.S	tore Cu	m.Store	
et)	(sq-ft)	(cubic-f	eet) (cu	bic-feet)	
50	131		0	0	
00	607		554	554	
00	1,321		964	1,518	
00	6,100	7,	421	8,939	
Routing	Inver	t Outlet [	Devices		
Primary	31.58	' 12.0" F	Round Culvert	L= 34.0'	RCP, rounded edge headwall, Ke= 0.100
_		Inlet / C	Outlet Invert= 3	31.58' / 25.	32' S= 0.1841 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf
Device 1	32.50	' 7.0" Ve	rt. Orifice/Gra	te C= 0.	600
	31 on et) 50 00 00 Routing Primary	31.50' 8, on Surf.Area et) (sq-ft) 50 131 00 607 00 1,321 00 6,100  Routing Inver Primary 31.58	31.50' 8,939 cf Con Surf.Area Inc.Set) (sq-ft) (cubic-f (	31.50' 8,939 cf Custom Stage  on Surf.Area Inc.Store Cu et) (sq-ft) (cubic-feet) (cu 50 131 0 00 607 554 00 1,321 964 00 6,100 7,421  Routing Invert Outlet Devices  Primary 31.58' 12.0" Round Culvert Inlet / Outlet Invert= 3	31.50' 8,939 cf Custom Stage Data (Prison Surf.Area Inc.Store Cum.Store et) (sq-ft) (cubic-feet) (cubic-feet)  50 131 0 0 0  50 607 554 554  50 1,321 964 1,518  50 6,100 7,421 8,939  Routing Invert Outlet Devices  Primary 31.58' 12.0" Round Culvert L= 34.0' Inlet / Outlet Invert= 31.58' / 25.

Primary OutFlow Max=0.90 cfs @ 12.70 hrs HW=33.28' TW=25.39' (Dynamic Tailwater)

<sup>-1=</sup>Culvert (Passes 0.90 cfs of 5.65 cfs potential flow)

**<sup>2=</sup>Orifice/Grate** (Orifice Controls 0.90 cfs @ 3.36 fps)

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# Summary for Pond 23P: Strmtr 2

Inflow Area = 12,687 sf, 40.99% Impervious, Inflow Depth > 1.24" for 10-Year event

Inflow = 0.16 cfs @ 12.58 hrs, Volume= 1,315 cf

Outflow = 0.16 cfs @ 12.58 hrs, Volume= 1,315 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.16 cfs @ 12.58 hrs, Volume= 1,315 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.33' @ 12.58 hrs

Flood Elev= 31.00'

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 38.16'
 12.0" Round Culvert L= 222.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 38.16' / 24.80' S= 0.0602 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.16 cfs @ 12.58 hrs HW=38.33' TW=22.56' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.16 cfs @ 1.77 fps)

### Summary for Pond 24P: RG #1

Inflow Area = 220,170 sf, 12.92% Impervious, Inflow Depth > 0.63" for 10-Year event

Inflow = 1.11 cfs @ 12.44 hrs, Volume= 11,644 cf

Outflow = 1.10 cfs @ 12.45 hrs, Volume= 11,619 cf, Atten= 1%, Lag= 0.5 min

Primary = 1.10 cfs @ 12.45 hrs, Volume= 11,619 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 35.11' @ 12.45 hrs Surf.Area= 403 sf Storage= 35 cf

Flood Elev= 36.50' Surf.Area= 10 sf Storage= 336 cf

Plug-Flow detention time= 1.6 min calculated for 11,619 cf (100% of inflow)

Center-of-Mass det. time= 0.6 min (973.5 - 972.9)

Volume	lnv	ert Avail.St	orage Stora	age Description
#1	35.	00'	336 cf Custo	om Stage Data (Prismatic) Listed below (Recalc)
Elevation (fee		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	
35.0	00	131	0	0
35.0	80	394	21	21
35.5	50	500	188	209
36.0	00	10	128	336
Device	Routing	Invert	Outlet Device	ices
#1	Primary	35.08'	65.0' long	x 1.0' breadth Broad-Crested Rectangular Weir
	·		` ,	) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 lish) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=1.09 cfs @ 12.45 hrs HW=35.11' TW=33.09' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 1.09 cfs @ 0.50 fps)

### Summary for Pond 25P: Strmtr 1

Inflow Area = 69,766 sf, 46.99% Impervious, Inflow Depth > 1.98" for 10-Year event

Inflow = 1.58 cfs @ 12.36 hrs, Volume= 11,490 cf

Outflow = 1.58 cfs @ 12.36 hrs, Volume= 11,490 cf, Atten= 0%, Lag= 0.0 min

Primary = 1.58 cfs @ 12.36 hrs, Volume= 11,490 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 27.37' @ 12.36 hrs

Flood Elev= 31.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	26.78'	<b>12.0" Round Culvert</b> L= 51.0' RCP, groove end projecting, Ke= 0.200
			Inlet / Outlet Invert= 26.78' / 24.81' S= 0.0386 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

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**Primary OutFlow** Max=1.58 cfs @ 12.36 hrs HW=27.37' TW=24.78' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 1.58 cfs @ 3.27 fps)

### Summary for Pond 26P: CB 2

Inflow Area = 22,968 sf, 25.66% Impervious, Inflow Depth > 0.93" for 10-Year event

Inflow = 0.33 cfs @ 12.24 hrs, Volume= 1,772 cf

Outflow = 0.33 cfs @ 12.24 hrs, Volume= 1,772 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.33 cfs @ 12.24 hrs, Volume= 1,772 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 36.49' @ 12.24 hrs

Flood Elev= 40.05'

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 36.22'
 10.0" Round Culvert L= 150.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 36.22' / 27.72' S= 0.0567 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.33 cfs @ 12.24 hrs HW=36.48' TW=28.11' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.33 cfs @ 2.19 fps)

### Summary for Pond 27P: DI 1

Inflow Area = 31,138 sf, 34.55% Impervious, Inflow Depth > 1.69" for 10-Year event

Inflow = 0.96 cfs @ 12.14 hrs, Volume= 4,383 cf

Outflow = 0.96 cfs @ 12.14 hrs, Volume= 4,383 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.96 cfs @ 12.14 hrs, Volume= 4,383 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 28.20' @ 12.14 hrs

Flood Elev= 33.85'

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 27.72'
 10.0" Round Culvert L= 70.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 27.72' / 26.36' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.96 cfs @ 12.14 hrs HW=28.20' TW=26.84' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.96 cfs @ 2.95 fps)

#### Summary for Pond 28P: DI 2

Inflow Area = 4,009 sf, 28.16% Impervious, Inflow Depth > 1.47" for 10-Year event

Inflow = 0.15 cfs @ 12.14 hrs, Volume= 490 cf

Outflow = 0.15 cfs @ 12.14 hrs, Volume= 490 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.15 cfs @ 12.14 hrs, Volume= 490 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 34.01' @ 12.14 hrs

Flood Elev= 35.96'

Device Routing Invert Outlet Devices

#1 Primary 33.84' 10.0" Round Culvert L= 66.0' RCP, groove end projecting, Ke= 0.200
Inlet / Outlet Invert= 33.84' / 33.00' S= 0.0127 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.15 cfs @ 12.14 hrs HW=34.01' TW=33.16' (Dynamic Tailwater)

**1=Culvert** (Inlet Controls 0.15 cfs @ 1.77 fps)

### Summary for Pond 29P: CB 1

Inflow Area = 9,924 sf, 46.59% Impervious, Inflow Depth > 1.60" for 10-Year event Inflow = 0.28 cfs @ 12.24 hrs, Volume= 1,325 cf

Outflow = 0.28 cfs @ 12.24 hrs, Volume= 1,325 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.28 cfs @ 12.24 hrs, Volume= 1,325 cf

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Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 54.00' @ 12.24 hrs

Flood Elev= 57.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	53.75'	<b>10.0"</b> Round Culvert L= 46.0' RCP, groove end projecting, Ke= 0.200
	-		Inlet / Outlet Invert= 53.75' / 42.60' S= 0.2424 '/ Cc= 0.900 n= 0.010. Flow Area= 0.55 sf

Primary OutFlow Max=0.28 cfs @ 12.24 hrs HW=54.00' TW=39.82' (Dynamic Tailwater) 1=Culvert (Inlet Controls 0.28 cfs @ 2.11 fps)

### Summary for Pond 30P: CB 3

5,166 sf, 69.53% Impervious, Inflow Depth > 2.74" for 10-Year event Inflow Area =

Inflow 0.36 cfs @ 12.13 hrs, Volume= 1,179 cf =

Outflow 0.00 cfs @ 0.00 hrs. Volume= 0 cf, Atten= 100%, Lag= 0.0 min =

Primary 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.09' @ 24.00 hrs Surf.Area= 802 sf Storage= 1,179 cf

Flood Elev= 43.50' Surf.Area= 802 sf Storage= 1,789 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	36.00'	701 cf	20.83'W x 38.50'L x 3.54'H Field A
			2,841 cf Overall - 1,088 cf Embedded = 1,753 cf x 40.0% Voids
#2A	36.50'	1,088 cf	Cultec R-330XLHD x 20 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

1,789 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	39.04'	<b>8.0" Round Culvert</b> L= 268.0' RCP, groove end projecting, Ke= 0.200
	-		Inlet / Outlet Invert= 39.04' / 26.50' S= 0.0468'/ Cc= 0.900 n= 0.010, Flow Area= 0.35 sf
#2	Device 1	43.04'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=26.78' (Dynamic Tailwater)

-1=Culvert (Controls 0.00 cfs)

**2=Orifice/Grate** (Controls 0.00 cfs)

#### Summary for Pond 31P: RG #3

22,968 sf, 25.66% Impervious, Inflow Depth > 0.94" for 10-Year event Inflow Area =

Inflow 0.33 cfs @ 12.23 hrs, Volume= 1.794 cf =

Outflow 0.33 cfs @ 12.24 hrs, Volume= 1,772 cf, Atten= 0%, Lag= 0.2 min =

0.33 cfs @ 12.24 hrs, Volume= Primary 1,772 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.82' @ 12.24 hrs Surf.Area= 397 sf Storage= 27 cf

Flood Elev= 43.50' Surf.Area= 500 sf Storage= 244 cf

Plug-Flow detention time= 9.7 min calculated for 1,772 cf (99% of inflow)

Center-of-Mass det. time= 3.5 min (925.9 - 922.4)

Volume	Invert	Avail.Storage	Storage Description
#1	39.72'	244 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.72	131	0	0
39.80	394	21	21
40.30	500	224	244

Routing Invert Outlet Devices Device

65.0' long x 1.0' breadth Broad-Crested Rectangular Weir #1 Primary 39.80'

> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.33 cfs @ 12.24 hrs HW=39.82' TW=36.48' (Dynamic Tailwater) 1=Broad-Crested Rectangular Weir (Weir Controls 0.33 cfs @ 0.33 fps)

# Summary for Pond 32P: PrkCis 1

1,192 sf,100.00% Impervious, Inflow Depth > 4.59" for 10-Year event Inflow Area =

Inflow 0.12 cfs @ 12.13 hrs, Volume= 456 cf =

0.00 hrs, Volume= Outflow 0.00 cfs @ 0 cf, Atten= 100%, Lag= 0.0 min =

0.00 cfs @ 0.00 hrs. Volume= Primary 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.09' @ 24.00 hrs Surf.Area= 863 sf Storage= 456 cf

Flood Elev= 42.00' Surf.Area= 863 sf Storage= 1,733 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	38.20'	689 cf	19.17'W x 45.00'L x 3.21'H Field A
			2,767 cf Overall - 1,044 cf Embedded = 1,723 cf x 40.0% Voids
#2A	38.70'	1,044 cf	Cultec R-280HD x 24 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	39.20'	<b>4.0" Round Culvert</b> L= 100.0' RCP, mitered to conform to fill, Ke= 0.700
	·		Inlet / Outlet Invert= 39.20' / 30.00' S= 0.0920 '/' Cc= 0.900 n= 0.010, Flow Area= 0.09 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=38.20' TW=21.50' (Dynamic Tailwater) -1=Culvert (Controls 0.00 cfs)

### Summary for Pond 33P: PrkCst 2

Inflow Area = 2,856 sf,100.00% Impervious, Inflow Depth > 4.59" for 10-Year event

0.29 cfs @ 12.13 hrs, Volume= 1,092 cf Inflow

Outflow 0.04 cfs @ 12.58 hrs, Volume= 605 cf, Atten= 85%, Lag= 26.8 min

0.04 cfs @ 12.58 hrs, Volume= Primary = 605 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 37.71' @ 12.58 hrs Surf.Area= 728 sf Storage= 637 cf

Flood Elev= 41.00' Surf.Area= 728 sf Storage= 1,459 cf

Plug-Flow detention time= 332.9 min calculated for 605 cf (55% of inflow)

Center-of-Mass det. time= 182.7 min (933.0 - 750.3)

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Volume	Invert	Avail.Storage	Storage Description
#1A	36.40'	585 cf	19.17'W x 38.00'L x 3.21'H Field A
			2,337 cf Overall - 874 cf Embedded = 1,462 cf x 40.0% Voids
#2A	36.90'	874 cf	Cultec R-280HD x 20 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		4 4=0 (	T 4 1 A 19 1 L O4

1,459 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	<b>2.0" Round Culvert</b> L= 50.0' RCP, mitered to conform to fill, Ke= 0.700
	•		Inlet / Outlet Invert= 37.40' / 34.66' S= 0.0548 '/' Cc= 0.900 n= 0.010. Flow Area= 0.02 sf

**Primary OutFlow** Max=0.04 cfs @ 12.58 hrs HW=37.71' TW=22.57' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.04 cfs @ 2.04 fps)

### Summary for Pond 34P: CC Cisterns

Inflow Area = 8,964 sf,100.00% Impervious, Inflow Depth > 4.59" for 10-Year event

Inflow = 0.90 cfs @ 12.13 hrs, Volume= 3,427 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 419 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 419 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 43.71' @ 24.00 hrs Surf.Area= 1,362 sf Storage= 3,008 cf

Plug-Flow detention time= 696.4 min calculated for 418 cf (12% of inflow)

Center-of-Mass det. time= 271.2 min (1,021.5 - 750.3)

Volume	ln۱	∕ert Ava	il.Storage	Storage	e Description	
#1	41.	50'	5,448 cf	Custon	n Stage Data (Pris	rismatic) Listed below (Recalc) x 6
Elevation	on	Surf.Area	Inc	.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
41.5	50	227		0	0	
45.5	50	227		908	908	
Device	Routing	ln	vert Outle	et Device	S	
#1	Primary	41	50' <b>0.2</b> "	Vert. Ori	fice/Grate X 6 rd	rows with 1.0" cc spacing C= 0.600

**Primary OutFlow** Max=0.01 cfs @ 24.00 hrs HW=43.71' TW=21.78' (Dynamic Tailwater) **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 6.79 fps)

#### Summary for Pond 35P: DMH 2

Inflow Area = 4,009 sf, 28.16% Impervious, Inflow Depth > 1.47" for 10-Year event

Inflow = 0.15 cfs @ 12.14 hrs, Volume= 490 cf

Outflow = 0.15 cfs @ 12.14 hrs, Volume= 490 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.15 cfs @ 12.14 hrs, Volume= 490 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 33.16' @ 12.14 hrs

Flood Elev= 35.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	<b>12.0"</b> Round Culvert L= 26.0' RCP, groove end projecting, Ke= 0.200
			Inlet / Outlet Inverte 33.00' / 24.90' Se 0.3115 '/' Cc= 0.900 n= 0.010 Flow Area = 0.79 sf

**Primary OutFlow** Max=0.15 cfs @ 12.14 hrs HW=33.16' TW=26.84' (Dynamic Tailwater) **1-Culvert** (Inlet Controls 0.15 cfs @ 1.72 fps)

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### Summary for Pond 36P: DMH 3

Inflow Area = 35,147 sf, 33.82% Impervious, Inflow Depth > 1.66" for 10-Year event

Inflow = 1.11 cfs @ 12.14 hrs, Volume= 4,873 cf

Outflow = 1.11 cfs @ 12.14 hrs, Volume= 4,873 cf, Atten= 0%, Lag= 0.0 min

Primary = 1.11 cfs @ 12.14 hrs, Volume= 4,873 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 26.84' @ 12.14 hrs

Flood Elev= 34.00'

Device Routing Invert Outlet Devices

#1 Primary 26.36' **12.0" Round Culvert** L= 73.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 26.36' / 24.90' S= 0.0200 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.11 cfs @ 12.14 hrs HW=26.84' TW=25.39' (Dynamic Tailwater)

1=Culvert (Inlet Controls 1.11 cfs @ 2.95 fps)

### Summary for Pond 37P: DMH 4

Inflow Area = 259,207 sf, 15.59% Impervious, Inflow Depth > 0.76" for 10-Year event

Inflow = 1.16 cfs @ 12.56 hrs, Volume= 16,317 cf

Outflow = 1.16 cfs @ 12.56 hrs, Volume= 16,317 cf, Atten= 0%, Lag= 0.0 min

Primary = 1.16 cfs @ 12.56 hrs, Volume= 16,317 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 25.40' @ 12.54 hrs

Flood Elev= 34.50'

Device Routing Invert Outlet Devices

#1 Primary 24.90' **12.0" Round Culvert** L= 37.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 24.90' / 24.00' S= 0.0243 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.16 cfs @ 12.56 hrs HW=25.40' TW=24.77' (Dynamic Tailwater)

1=Culvert (Outlet Controls 1.16 cfs @ 4.37 fps)

#### Summary for Pond 38P: DMH 5

Inflow Area = 328,973 sf, 22.24% Impervious, Inflow Depth > 1.01" for 10-Year event

Inflow = 2.57 cfs @ 12.42 hrs, Volume= 27,807 cf

Outflow = 2.57 cfs @ 12.42 hrs, Volume= 27,807 cf, Atten= 0%, Lag= 0.0 min

Primary = 2.57 cfs @ 12.42 hrs, Volume= 27,807 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 24.80' @ 12.42 hrs

Flood Elev= 33.00'

Device Routing Invert Outlet Devices

#1 Primary 24.00' **12.0" Round Culvert** L= 59.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 24.00' / 23.00' S= 0.0169 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=2.57 cfs @ 12.42 hrs HW=24.80' TW=22.53' (Dynamic Tailwater)

1=Culvert (Inlet Controls 2.57 cfs @ 3.81 fps)

# Summary for Pond 39P: PrkCis 3

Inflow Area = 4,157 sf,100.00% Impervious, Inflow Depth > 4.59" for 10-Year event

Inflow = 0.42 cfs @ 12.13 hrs. Volume= 1.589 cf

Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 36.34' @ 24.00 hrs Surf.Area= 1,226 sf Storage= 1,589 cf

Flood Elev= 39.00' Surf.Area= 1,226 sf Storage= 2,485 cf

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Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	967 cf	23.58'W x 52.00'L x 3.21'H Field A
			3,934 cf Overall - 1,518 cf Embedded = 2,417 cf x 40.0% Voids
#2A	35.00'	1,518 cf	Cultec R-280HD x 35 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 5 rows

2,485 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	<b>6.0" Round Culvert</b> L= 50.0' RCP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 37.40' / 32.46' S= 0.0988 '/' Cc= 0.900 n= 0.010, Flow Area= 0.20 sf
#2	Primary	37.80'	80.0' long x 10.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' TW=21.50' (Dynamic Tailwater)

1=Culvert (Controls 0.00 cfs)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

# Summary for Pond 40P: PrkCis 4

Inflow Area	=	4,079 sf,	100.00% Impervious,	Inflow Depth > 4.	59" for 10-Year event
Inflow	=	0.41 cfs @	12.13 hrs, Volume=	1,559 cf	
Outflow	=	0.00 cfs @	0.00 hrs, Volume=	0 cf,	Atten= 100%, Lag= 0.0 min
Primary	=	0.00 cfs @	0.00 hrs, Volume=	0 cf	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 32.69' @ 24.00 hrs Surf.Area= 1,094 sf Storage= 1,559 cf Flood Elev= 40.00' Surf.Area= 1,094 sf Storage= 2,453 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	30.67'	947 cf	20.83'W x 52.50'L x 3.54'H Field A
			3,874 cf Overall - 1,505 cf Embedded = 2,369 cf x 40.0% Voids
#2A	31.17'	1,505 cf	Cultec R-330XLHD x 28 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		0.450 -4	Total Available Ctavage

2,453 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	32.75'	<b>4.0" Round Culvert</b> L= 60.0' RCP, mitered to conform to fill, Ke= 0.700
	•		Inlet / Outlet Invert= 32.75' / 32.26' S= 0.0082 '/' Cc= 0.900 n= 0.010. Flow Area= 0.09 sf

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=30.67' TW=21.50' (Dynamic Tailwater) **1=Culvert** (Controls 0.00 cfs)

### Summary for Pond 41P: CB 5

Inflow Area	a =	3,890 sf,	1.80% Impervious,	Inflow Depth >	0.67"	for 10-Year event
Inflow	=	0.05 cfs @	12.15 hrs, Volume=	218 (	cf	
Outflow	=	0.05 cfs @	12.15 hrs, Volume=	218 (	of, Atte	en= 0%, Lag= 0.0 min
Primary	=	0.05 cfs @	12.15 hrs, Volume=	218 (	cf	_

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

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Peak Elev= 29.04' @ 12.15 hrs Flood Elev= 31.00'

Device Routing Invert Outlet Devices

#1 Primary 28.94' **10.0" Round Culvert** L= 38.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 28.94' / 25.90' S= 0.0800 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.05 cfs @ 12.15 hrs HW=29.04' TW=25.39' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.05 cfs @ 1.32 fps)

#### Summary for Pond 43P: CE Cisterns

Inflow Area = 5,923 sf,100.00% Impervious, Inflow Depth > 4.59" for 10-Year event

Inflow = 0.59 cfs @ 12.13 hrs, Volume= 2,264 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 292 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 292 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 45.17' @ 24.00 hrs Surf.Area= 908 sf Storage= 1,972 cf

Plug-Flow detention time= 670.2 min calculated for 292 cf (13% of inflow)

Center-of-Mass det. time= 254.3 min (1,004.6 - 750.3)

Volume	ln۱	ert Av	ail.Storage	Storage	Description	
#1	43.	00'	3,632 cf	Custom	Stage Data (P	rismatic) Listed below (Recalc) x 4
Elevation (fee		Surf.Area (sq-ft)		c.Store ic-feet)	Cum.Store	
43.0	,	227	(db)	0	(Cabic-icet)	
47.0		227		908	908	
Device	Routing	lr	nvert Outl	et Devices	<b>i</b>	
#1	Primary	43	3.00' <b>0.2"</b>	Vert. Orif	ice/Grate X4	rows with 1.0" cc spacing C= 0.600

**Primary OutFlow** Max=0.01 cfs @ 24.00 hrs HW=45.17' TW=21.78' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.01 cfs @ 6.87 fps)

# Summary for Pond 44P: SR Cisterns

Inflow Area = 7,823 sf,100.00% Impervious, Inflow Depth > 4.59" for 10-Year event

Inflow = 0.79 cfs @ 12.13 hrs, Volume= 2,991 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 368 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 368 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 48.31' @ 24.00 hrs Surf.Area= 1,135 sf Storage= 2,622 cf

Plug-Flow detention time= 685.9 min calculated for 368 cf (12% of inflow)

Center-of-Mass det. time= 261.9 min (1,012.2 - 750.3)

Volume	Inv	ert Ava	il.Storage	Storage	e Description	
#1	46.0	00'	5,675 cf	Custon	n Stage Data (Pr	ismatic) Listed below (Recalc) x 5
Elevation	on	Surf.Area	Inc	.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
46.0	00	227		0	0	
51.0	00	227		1,135	1,135	
Device	Routing	In	vert Outle	et Device	s	
#1	Primary	46	.00' <b>0.2"</b>	Vert. Ori	fice/Grate X5	rows with 1.0" cc spacing C= 0.600

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=48.31' TW=21.78' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.01 cfs @ 7.03 fps)

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#### **Summary for Pond 45P: HACisterns**

Inflow Area = 10,118 sf,100.00% Impervious, Inflow Depth > 4.59" for 10-Year event

Inflow = 1.02 cfs @ 12.13 hrs, Volume= 3,868 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 452 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 452 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 46.51' @ 24.00 hrs Surf.Area= 1,362 sf Storage= 3,416 cf

Plug-Flow detention time= 699.9 min calculated for 452 cf (12% of inflow)

Center-of-Mass det. time= 267.2 min (1,017.5 - 750.3)

Volume	Inv	ert Ava	il.Storage	Storage	Description	
#1	44.	00'	6,810 cf	Custom	Stage Data (Pr	ismatic) Listed below (Recalc) x 6
Elevation	on	Surf.Area	Inc	.Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
44.0	00	227		0	0	
49.0	00	227		1,135	1,135	
Device	Routing	In	vert Outle	et Devices	<b>i</b>	
#1	Primary	44	.00' <b>0.2"</b>	Vert. Orifi	ice/Grate X 6	rows with 1.0" cc spacing C= 0.600

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=46.51' TW=21.78' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.01 cfs @ 7.28 fps)

### Summary for Pond 46P: CB 4

Inflow Area = 400,830 sf, 31.77% Impervious, Inflow Depth > 1.03" for 10-Year event

Inflow = 2.96 cfs @ 12.41 hrs, Volume= 34,367 cf

Outflow = 2.85 cfs @ 12.54 hrs, Volume= 34,222 cf, Atten= 4%, Lag= 7.7 min

Primary = 2.85 cfs @ 12.54 hrs, Volume= 34,222 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 22.57' @ 12.54 hrs Surf.Area= 1,297 sf Storage= 908 cf

Plug-Flow detention time= 6.2 min calculated for 34,208 cf (100% of inflow)

Center-of-Mass det. time= 4.0 min (911.9 - 907.9)

Volume	Invert	Avail.Storage	Storage Description
#1	27.80'	23,576 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2A	21.50'	259 cf	21.79'W x 59.50'L x 6.00'H Field A
			7,780 cf Overall - 7,131 cf Embedded = 648 cf $\times$ 40.0% Voids
#3A	22.00'	5,694 cf	StormTrap SingleTrap 5-0 x 3 Inside #2
			Inside= 101.7"W x 60.0"H => 38.33 sf x 15.40'L = 590.2 cf
			Outside= $101.7$ "W x $66.0$ "H => $46.64$ sf x $15.40$ 'L = $718.0$ cf
			8.48' x 46.19' Core + 6.66' Border = 21.79' x 59.50' System

29,529 cf Total Available Storage

### Storage Group A created with Chamber Wizard

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
27.80	4	0	0
28.00	1,704	171	171
30.00	4,071	5,775	5,946
32.00	13,559	17,630	23,576

Device	Routing	Invert	Outlet Devices
#1	Primary	21.50'	<b>12.0"</b> Round Culvert L= 141.0' RCP, sq.cut end projecting, Ke= 0.500
			Inlet / Outlet Invert - 21 50' / 19 40' S - 0 0149 '/' Cc - 0 900 n - 0 013 Flow Area - 0 79 sf

Primary OutFlow Max=2.85 cfs @ 12.54 hrs HW=22.57' TW=0.00' (Dynamic Tailwater) —1=Culvert (Inlet Controls 2.85 cfs @ 3.63 fps)

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### Summary for Pond 47P: HW

Inflow Area = 385,242 sf, 8.99% Impervious, Inflow Depth > 1.80" for 10-Year event

Inflow = 6.01 cfs @ 12.15 hrs, Volume= 57,797 cf

Outflow = 5.65 cfs @ 12.19 hrs, Volume= 57,789 cf, Atten= 6%, Lag= 2.8 min

57,789 cf 5.65 cfs @ 12.19 hrs, Volume= Primary =

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 25.73' @ 12.19 hrs Surf.Area= 265 sf Storage= 376 cf

Plug-Flow detention time= 0.5 min calculated for 57,789 cf (100% of inflow)

Center-of-Mass det. time= 0.4 min (857.8 - 857.4)

Volume	ln	vert A	vail.Stor	rage S	torage D	escription					
#1	23	.00'	75,61	12 cf Custom S		tage Data (Pris	matic) Li	sted belov	v (Recalc)		
Elevation	on	n Surf.Area		Inc.Store		Cum.Store					
(fee	et)	t) (sq-ft)		(cubic-feet)		(cubic-feet)					
23.0	00	10	)		0	0					
26.0	00	290	)	4	450	450					
28.0	00	2,812	2	3,1	102	3,552					
32.0	00	33,218	3	72,0	060	75,612					
Device	Routing		Invert	Outlet D	Devices						
#1	Primary	2	23.00'	12.0" R	Round Co	ulvert L= 141.	0' RCP,	sq.cut en	d projecting,	Ke= 0.500	
	,			Inlet / O	utlet Inve	ert= 23.00' / 19	.40' S=	0.0255 '/'	Cc= 0.900	n= 0.013.	Flow Area= 0.79 sf

Primary OutFlow Max=5.65 cfs @ 12.19 hrs HW=25.73' TW=0.00' (Dynamic Tailwater)

-1=Culvert (Inlet Controls 5.65 cfs @ 7.19 fps)

### Summary for Pond 48P: YW Cistern

Inflow Area = 2,136 sf,100.00% Impervious, Inflow Depth > 4.59" for 10-Year event

0.21 cfs @ 12.13 hrs, Volume= Inflow = 817 cf

0.01 cfs @ 15.61 hrs, Volume= 0.01 cfs @ 15.61 hrs, Volume= Outflow 388 cf, Atten= 97%, Lag= 208.8 min =

Primary 388 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 54.28' @ 15.61 hrs Surf.Area= 392 sf Storage= 503 cf

Plug-Flow detention time= 383.3 min calculated for 387 cf (47% of inflow)

Center-of-Mass det. time= 211.6 min (961.9 - 750.3)

Volume	Inv	ert Ava	il.Storage	Storage	e Description	
#1	53.	00'	1,176 cf	Custon	n Stage Data (Pr	rismatic) Listed below (Recalc)
Elevation	on	Surf.Area	Inc	.Store	Cum.Store	
(fee	et)	(sq-ft)	(sq-ft) (cub		(cubic-feet)	
53.0	00	392		0	0	
56.0	00	392		1,176	1,176	
Device	Routing	In	vert Outl	et Device	S	
#1	Primary	53	.00' <b>0.5</b> "	Vert. Ori	fice/Grate C=	0.600

Primary OutFlow Max=0.01 cfs @ 15.61 hrs HW=54.28' TW=21.89' (Dynamic Tailwater) 1=Orifice/Grate (Orifice Controls 0.01 cfs @ 5.41 fps)

### Summary for Link 1L: Total Exist

405,107 sf, 8.55% Impervious, Inflow Depth > 1.71" for 10-Year event Inflow Area =

5.65 cfs @ 12.19 hrs, Volume= 57,814 cf Inflow

Primary 5.65 cfs @ 12.19 hrs, Volume= 57,814 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow. Time Span= 0.00-24.00 hrs. dt= 0.01 hrs

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### **Summary for Link 20L: Total POST**

405,107 sf, 31.55% Impervious, Inflow Depth > 1.02" for 10-Year event 2.86 cfs @ 12.54 hrs, Volume= 34,317 cf 2.86 cfs @ 12.54 hrs, Volume= 34,317 cf, Atten= 0%, Lag= 0.0 m Inflow Area =

Inflow =

Primary = 34,317 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

### Summary for Subcatchment 1S: dep 1 DA

Runoff = 4.22 cfs @ 12.53 hrs, Volume= 32,518 cf, Depth> 4.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	A	rea (sf)	CN	Description	1							
*		8,110	98	roof & pvm	oof & pvmnt							
		50,133	94	Fallow, bar	Fallow, bare soil, HSG D							
		16,361	84	50-75% G	rass cover,	Fair, HSG D						
*		4,460	98	pre-exist w	arehouse, l	HSG D						
		79,064	93	Weighted	Average							
		66,494		84.10% Pe	ervious Area	a						
		12,570		15.90% lm	pervious A	rea						
	Tc	Length	Slope	,	Capacity	Description						
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
	38.1	50	0.0400	0.02		Sheet Flow, cemetery						
						Grass: Short n= 0.150 P2= 0.04"						
	0.5	96	0.2300	3.36		Shallow Concentrated Flow, grass						
						Short Grass Pasture Kv= 7.0 fps						
	0.7	260	0.1400	6.02		Shallow Concentrated Flow, bare						
_						Unpaved Kv= 16.1 fps						
	39.3	406	Total									

### Summary for Subcatchment 2S: dep 2 DA

Runoff = 2.31 cfs @ 12.23 hrs, Volume= 10,513 cf, Depth> 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Д	rea (sf)	CN	Description	1						
*		4,525	98	oof & pvmnt							
		13,599	68	<50% Gras	50% Grass cover, Poor, HSG A						
		8,272	77	Fallow, bar	e soil, HSC	S A Company of the Co					
		2,342	91	Fallow, bar	e soil, HSG	S C					
*		2,147	98	pre-exist ho	ouse, HSG	A					
*		3,353	98	pre-exist w	arehouse, l	HSG C					
		34,238	81	Weighted A	Average						
		24,213		70.72% Pervious Area							
		10,025		29.28% lm	pervious A	rea					
	Tc	Length	Slope	Velocity	Capacity	Description					
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	14.1	25	0.1200	0.03		Sheet Flow, cemetery					
						Grass: Short n= 0.150 P2= 0.04"					
	0.5	97	0.2200	3.28		Shallow Concentrated Flow, grass					
						Short Grass Pasture Kv= 7.0 fps					
	0.6	216	0.1300	5.80		Shallow Concentrated Flow, bare soil					
_						Unpaved Kv= 16.1 fps					
	15.2	338	Total								

### Summary for Subcatchment 3S: cent dep DA

Runoff = 0.92 cfs @ 12.48 hrs, Volume= 10,228 cf, Depth> 0.65"

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	Α	rea (sf)	CN	Description	1					
*		2,218	98	barn						
		18,317	89	<50% Gra	50% Grass cover, Poor, HSG D					
	1	16,882	39	>75% Gra	ss cover, G	Good, HSG A				
		48,880	36	Woods, Fa	air, HSG A					
*		2,286	97	Dirt roads,	HSG D					
_	1	88,583	44	Weighted	Average					
	1	86,365		98.82% Pe	ervious Area	a				
		2,218		1.18% lmp	ervious Are	ea				
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	24.6	50	0.1200	0.03		Sheet Flow, grass				
						Grass: Short n= 0.150 P2= 0.04"				
	0.7	125	0.1600	2.80		Shallow Concentrated Flow, cemetery				
						Short Grass Pasture Kv= 7.0 fps				
	0.4	77	0.0400	3.22		Shallow Concentrated Flow, bare				
_						Unpaved Kv= 16.1 fps				
	25.7	252	Total							

## Summary for Subcatchment 4S: rte one

Runoff 0.01 cfs @ 21.65 hrs, Volume= 171 cf, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Area (sf)	CN	Description	1	
	4,389	39	>75% Gras	ss cover, G	lood, HSG A
	15,476	30	Woods, Go	ood, HSG <i>A</i>	Α
	19,865	32	Weighted A	Average	
	19,865		100.00% F	Pervious Are	ea
Tc (min)	Length (feet)	Slope (ft/ft)	,	Capacity (cfs)	Description
12.7	20	0.1000	0.03		Sheet Flow, cemetery
0.7	96	0.2300	2.40		Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, woods
0.2	49	0.4500	3.35		Woodland Kv= 5.0 fps  Shallow Concentrated Flow, woods  Woodland Kv= 5.0 fps
13.6	165	Total			

### Summary for Subcatchment 5S: dep 3 DA

7,677 cf, Depth> 2.92" Runoff 2.37 cfs @ 12.13 hrs, Volume=

	Area (sf)	CN	Description
*	1,388	98	roof & pvmnt
	28,408	74	>75% Grass cover, Good, HSG C
	1,781	36	Woods, Fair, HSG A
	31,577	73	Weighted Average
	30,189		95.60% Pervious Area
	1,388		4.40% Impervious Area

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	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	0.2	25	0.1600	2.00		Shallow Concentrated Flow, woods
	0.4	43	0.1400	1.87		Woodland Kv= 5.0 fps Shallow Concentrated Flow, woods
	2.1	245	0.0800	1.98		Woodland Kv= 5.0 fps Shallow Concentrated Flow, grass
	2.1	243	0.0000	1.30		Short Grass Pasture Kv= 7.0 fps
	3.3					Direct Entry, 6 min minimum
_	6.0	313	Total			

### Summary for Subcatchment 6S: cb 1889 DA

Runoff = 5.39 cfs @ 12.13 hrs, Volume= 18,178 cf, Depth> 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Δ	rea (sf)	CN	Description	1						
*		8.445	98	roof & pvmnt							
		14,077			<50% Grass cover, Poor, HSG C						
		4,389	39	>75% Gras	-75% Grass cover, Good, HSG A						
		5,092	77	Woods, Po	Woods, Poor, HSG C						
*		3,284	97	Dirt roads,	HSG D						
		16,493	94	Fallow, bar	e soil, HSG	G D					
		51,780	86	Weighted	Average						
		43,335			ervious Area						
		8,445		16.31% lm	pervious A	rea					
	_										
	Tc	Length	Slope	,	Capacity	Description					
	(min)	(feet)	(ft/ft)	( )	(cfs)						
	0.2	25	0.0800	1.98		Shallow Concentrated Flow, cemetery					
	a =	407	0.4000	0.40		Short Grass Pasture Kv= 7.0 fps					
	0.7	107	0.1200	2.42		Shallow Concentrated Flow, cemetery					
	0.0	407	0.0400	0.70		Short Grass Pasture Kv= 7.0 fps					
	0.6	107	0.3100	2.78		Shallow Concentrated Flow, woods					
	0.7	200	0.0950	4.96		Woodland Kv= 5.0 fps  Shallow Concentrated Flow, bare					
	0.7	200	0.0930	4.90		Unpaved Kv= 16.1 fps					
	3.8					Direct Entry, add for 6 min. minimum					
_	6.0	439	Total								
	0.0	.00	· Otal								

### Summary for Subcatchment 20S: Cistern DA

Runoff = 0.71 cfs @ 12.71 hrs, Volume= 8,398 cf, Depth> 0.76"

	Area (sf)	CN	Description
*	78,503	39	cemertery
	10,899	30	Woods, Good, HSG A
*	3,034	98	exist roofs
*	12,226	98	impervious HSG D
	25,167	39	>75% Grass cover, Good, HSG A
	2,182	80	>75% Grass cover, Good, HSG D
	132,011	46	Weighted Average
	116,751		88.44% Pervious Area
	15,260		11.56% Impervious Area

Area (sf)

CN Description

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	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	(111111)	(IEEI)	(11/11)	(10360)	(613)	
	38.1	50	0.0400	0.02		Sheet Flow, cemetery
	0.5	100	0.2600	3.57		Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, cemetery
	2.4	303	0.0900	2.10		Short Grass Pasture Kv= 7.0 fps Shallow Concentrated Flow, lawn & swale
						Short Grass Pasture Kv= 7.0 fps
_	41.0	453	Total	•		

### Summary for Subcatchment 21S: CB 5

Runoff = 0.09 cfs @ 12.14 hrs, Volume= 360 cf, Depth> 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Area (sf)	CN	Description		
*	70	98	impervious HSG	A	
	60	74	>75% Grass cove	er, Good, HSG C	
*	1,274	50	Planking D		
*	2,486	50	Pervious D		
	3,890	51	Weighted Averag	е	
	3,820		98.20% Pervious	Area	
	70		1.80% Impervious	s Area	
	T- 1	. 01	- V-Iit. O	-it. December	
	Tc Length		, ,	, ,	
	(min) (feet	(ft/1	t) (ft/sec) (	cfs)	
	6.0			Direct Entry	v, direct

### Summary for Subcatchment 22S: Strmtr 1 South

Runoff = 0.78 cfs @ 12.59 hrs, Volume= 6,139 cf, Depth> 1.76"

		1104 (01)	<u> </u>	Doddinption		
*		15,487	39	Cemetery		
		5,314	30	Woods, G	ood, HSG	A
*		2,400	98	impervious	HSG A	
		3,003	39	>75% Gra	ss cover, G	Good, HSG A
		3,519	74	>75% Gra	ss cover, G	Good, HSG C
		1,985	80			Good, HSG D
*		8,451	98	impervious	HSG C	
*		1,736	98	impervious	HSG D	
		41,895	60	Weighted	Average	
		29,308			ervious Are	
		12,587		30.04% lm	pervious A	rea
		Length	Slope	,		Description
	(min)	(feet)	(ft/ft		(cfs)	
	38.1	50	0.0400	0.02		Sheet Flow, cemetery
						Grass: Short n= 0.150 P2= 0.04"
	1.2	138	0.0700	1.85		Shallow Concentrated Flow, cemetery
						Short Grass Pasture Kv= 7.0 fps
	0.2	46	0.4800	3.46		Shallow Concentrated Flow, woods
	0.4	70	0.0400			Woodland Kv= 5.0 fps
	0.4	76	0.2100	3.21		Shallow Concentrated Flow, swale
	4.0	000	0.0000	0.05		Short Grass Pasture Kv= 7.0 fps
	1.0	226	0.0360	3.85		Shallow Concentrated Flow, pvd
_	40.0	<b>500</b>	<b>T</b>			Paved Kv= 20.3 fps
	40.9	536	Total			

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### Summary for Subcatchment 23S: Strmtr2

Runoff = 0.25 cfs @ 12.57 hrs, Volume= 1,945 cf, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Α	rea (sf)	CN	Description	1	
*		2,231	39	Cemetery		
		2,408	30	Woods, Go	ood, HSG A	4
*		5,201	98	impervious	HSG A	
		2,847	39	>75% Gras	ss cover, G	ood, HSG A
		12,687	61	Weighted A	Average	
		7,486		59.01% Pe	ervious Area	a a constant of the constant o
		5,201		40.99% Im	pervious A	rea
	Tc	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	38.1	50	0.0400	0.02		Sheet Flow, cemetery
						Grass: Short n= 0.150 P2= 0.04"
	0.5	78	0.1300	2.52		Shallow Concentrated Flow, cemetery
						Short Grass Pasture Kv= 7.0 fps
	0.1	26	0.4600	3.39		Shallow Concentrated Flow, woods
						Woodland Kv= 5.0 fps
	0.2	59	0.4000	4.43		Shallow Concentrated Flow, swale
						Short Grass Pasture Kv= 7.0 fps
	0.4	67	0.0220	3.01		Shallow Concentrated Flow, paved
_						Paved Kv= 20.3 fps
	39.3	280	Total			

### Summary for Subcatchment 24S: CentDep

Runoff = 1.58 cfs @ 12.41 hrs, Volume= 10,431 cf, Depth> 1.46"

	A	Area (sf)	CN	Description	1	
*		40,139	39	Cemetery		
		6,033	30	Woods, Go	ood, HSG	A
*		1,199	98	impervious	HSG A	
*		75	98	impervious	HSG C	
		5,671	39	>75% Gras	ss cover, G	Good, HSG A
		21,301	80	>75% Gras	ss cover, G	Good, HSG D
*		9,481		impervious		
*		1,143	50	planking H	SG D	
*		691	50	planking H	SG A	
		85,733	56	Weighted A	Average	
		74,978		87.46% Pe	ervious Are	ea each and a contract of the
		10,755		12.54% lm	pervious A	Area
	Tc	0	Slope	,	Capacity	•
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	24.6	50	0.1200	0.03		Sheet Flow, grass
						Grass: Short n= 0.150 P2= 0.04"
	0.7	125	0.1600	2.80		Shallow Concentrated Flow, woods
						Short Grass Pasture Kv= 7.0 fps
	0.4	62	0.1600	2.80		Shallow Concentrated Flow, swale
						Short Grass Pasture Kv= 7.0 fps
	0.9	184	0.0270	3.34		Shallow Concentrated Flow, paved
_						Paved Kv= 20.3 fps
	26.6	421	Total			

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#### Summary for Subcatchment 25S: Strmtr1 North

9,164 cf, Depth> 4.84" Runoff 1.55 cfs @ 12.33 hrs, Volume=

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	A	rea (sf)	CN	Description	1	
*		10,501	98	impervious	HSG A	
*		6,100	98	impervious	HSG C	
		3,082	74	>75% Gras	ss cover, G	Good, HSG C
		3,022	80	>75% Gras	ss cover, G	Good, HSG D
		22,705	92	Weighted A	Average	
		6,104		26.88% Pe		<del></del>
		16,601		73.12% lm	pervious A	Area
	Tc	Length	Slope	•	Capacity	, '
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	22.6	26	0.0400	0.02		Sheet Flow, grass
						Grass: Short n= 0.150 P2= 0.04"
	1.1	265	0.0400	4.06		Shallow Concentrated Flow, paved
_						Paved Kv= 20.3 fps
	23.7	291	Total			

### Summary for Subcatchment 26S: RG 3

850 cf, Depth> 0.78" Runoff 0.18 cfs @ 12.15 hrs, Volume=

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

_	Ar	ea (sf)	CN	Description					
,	•	1,269	98	impervious	HSG A				
		9,945	39	>75% Gras	s cover, G	ood, HSG A			
,	•	1,830	50	planking H	SG A				
	1	13,044	46	Weighted A	Average				
	1	11,775		90.27% Pe	rvious Area	ì			
		1,269		9.73% Imp	ervious Are	a			
	_		01		<b>.</b>	5			
		Length	Slope	,	Capacity	Description			
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)				
	6.0					Direct Entry,	direct entry		

Direct Entry, direct entry

### Summary for Subcatchment 27S: GH West

Runoff 0.35 cfs @ 12.13 hrs, Volume= 1,169 cf, Depth> 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Area (sf)	CN	Description	1					
*	390	98	impervious	HSG D					
	3,304	80	>75% Gras	ss cover, G	ood, HSG D				
	3,694	82	Weighted A	Average					
	3,304		89.44% Pe	ervious Area	a				
	390		10.56% lm	pervious A	rea				
(m	Tc Length	Slope (ft/ft	,	Capacity (cfs)	Description				
	6.0				Direct Entry,	direct entry			

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### Summary for Subcatchment 28S: GH East

707 cf, Depth> 2.12" Runoff 0.22 cfs @ 12.13 hrs, Volume=

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Α	rea (sf)	CN	Description	1	
*		1,129	98	impervious	HSG D	
*		2,880	50	planking H	SG D	
		4,009	64	Weighted A	Average	
		2,880		71.84% Pe	ervious Area	a
		1,129		28.16% lm	pervious A	rea
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description
	6.0					Direct Entry, direct entry

## Summary for Subcatchment 29S: CB 1

0.41 cfs @ 12.24 hrs, Volume= 1,885 cf, Depth> 2.28" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Α	rea (sf)	CN	Description	1	
*		3,522	98	impervious	HSG A	
*		1,102	98	exist roof H	ISG A	
*		261	39	cemetery F	ISG A	
		5,039	39	>75% Gras	ss cover, G	ood, HSG A
		9,924	66	Weighted A	Average	
		5,300		53.41% Pe	ervious Area	a
		4,624		46.59% lm	pervious A	rea
					•	
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·
	14.1	25	0.1200	0.03		Sheet Flow, cemetery
						Grass: Short n= 0.150 P2= 0.04"
	0.5	97	0.2000	3.13		Shallow Concentrated Flow, grrass
						Short Grass Pasture Kv= 7.0 fps
	0.3	75	0.0500	4.54		Shallow Concentrated Flow, pvd
						Paved Kv= 20.3 fps
	14.9	197	Total			

### Summary for Subcatchment 30S: CB 3

0.47 cfs @ 12.13 hrs, Volume= 1,547 cf, Depth> 3.59" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

_	Д	rea (sf)	CN	Description						
,	ŧ	3,592	98	impervious	HSG A					
_		1,574	39	>75% Gras	s cover, G	ood, HSG A				
		5,166	80	Weighted A	Average					
		1,574		30.47% Pe	rvious Area	ì				
		3,592		69.53% lm	pervious A	rea				
	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description				
	6.0					Direct Entry,	direct			

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### Summary for Subcatchment 31S: Rte 1

0.02 cfs @ 12.30 hrs, Volume= 193 cf, Depth> 0.54" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Δ	rea (sf)	CN	Description	1	
7	+	709	39	Cemetery I	HSG A	
		1,784	30	Woods, Go	ood, HSG A	A
4	+	493	98	impervious	HSG A	
_		1,291	39	>75% Gras	ss cover, G	ood, HSG A
		4,277	42	Weighted A	Average	
		3,784		88.47% Pe	ervious Area	a
		493		11.53% lm	pervious A	rea
	Tc	Length	Slope		Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	12.7	20	0.1000	0.03		Sheet Flow, cemetery
						Grass: Short n= 0.150 P2= 0.04"
	0.7	96	0.2300	2.40		Shallow Concentrated Flow, woods
						Woodland Kv= 5.0 fps
	0.2	49	0.4500	3.35		Shallow Concentrated Flow, wds
_						Woodland Kv= 5.0 fps
	13.6	165	Total			

### Summary for Subcatchment 32S: GH

0.54 cfs @ 12.13 hrs, Volume= 2,072 cf, Depth> 5.55" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

_	Α	Area (sf)	CN	Description	า		
*		4,476	98	roof HSG	D		
		4,476		100.00% l	mpervious <i>i</i>	Area	
	Tc	Length	Slope	,	Capacity	Description	
_	(min)	(feet)	(ft/ft	(ft/sec)	(cfs)		
	6.0					Direct Entry,	y, direct entry

### Summary for Subcatchment 33S: 12-14 CC

Runoff 1.09 cfs @ 12.13 hrs, Volume= 3,571 cf, Depth> 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Area (sf)	CN	Description								
*	1,709	98	pervious HSG D								
	4,934	74	>75% Grass cover, Good, HSG C								
	5,279	80	>75% Grass cover, Good, HSG D								
	11,922	80	Weighted Average								
	10,213		85.67% Pervious Area								
	1,709		14.33% Impervious Area								
	Tc Length (min) (feet)	Slop (ft/f									
	6.0		Direct Entry, Direct								

6.0

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### Summary for Subcatchment 34S: Barn

Runoff 0.29 cfs @ 12.13 hrs, Volume= 1,123 cf, Depth> 5.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Area	a (sf)	CN	Description	1		
*	2	,426	98	roof HSG I	)		
	2	,426		100.00% lı	mpervious /	Area	
		ength (feet)	Slope (ft/ft	,	Capacity (cfs)	Description	

Direct Entry, minimum

### Summary for Subcatchment 40S: YW

Runoff 0.26 cfs @ 12.13 hrs, Volume= 989 cf, Depth> 5.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

_	Α	rea (sf)	CN	Description	1						
*		2,136	98	roof, HSG	Α						
		2,136		100.00% li	00.00% Impervious Area						
	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description					
_	6.0	( /		( )	(/	Direct Entry, Di	irect				

# Summary for Subcatchment 41S: SR

Runoff 0.95 cfs @ 12.13 hrs, Volume= 3,621 cf, Depth> 5.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Α	rea (sf)	CN	Description	1					
*		7,823	98	roof HSG	4					
_		7,823		100.00% Impervious Area						
	Tc	- 3				Description				
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)					
	6.0					Direct Entry,	, Direct			

### Summary for Subcatchment 42S: CE

Runoff 0.72 cfs @ 12.13 hrs, Volume= 2,742 cf, Depth> 5.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Α	rea (sf)	CN	Description	1	
*		2,744	98	roof HSG (	2	
*		3,179	98	roof HSG [	)	
		5,923	98	Weighted A	Average	
		5,923		100.00% lr		Area
	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	•
_	6.0		,	· · · · · · · · · · · · · · · · · · ·	` '	Direct Entry, Direct

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#### Summary for Subcatchment 43S: CC

Runoff = 1.08 cfs @ 12.13 hrs, Volume= 4,149 cf, Depth> 5.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Α	rea (sf)	CN	Description	1	
*		4,684	98	roof HSG (	)	
*		4,280	98	roof HSG [	)	
		8,964	98	Weighted A	Average	
		8,964		100.00% lr	npervious A	Area
	Tc	Length	Slope	,	Capacity	Description
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	
	6.0					Direct Entry, Direct

### Summary for Subcatchment 44S: HA+CH

Runoff = 1.22 cfs @ 12.13 hrs, Volume= 4,684 cf, Depth> 5.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

_	Area (	(sf)	CN	Description						
*	1,8	03	98	roof HSG A	4					
*	8,3	15	98	roof HSG [	)					
_	10,1	18	98	Weighted /	Average					
	10,1	18		100.00% lr		Area				
	Tc Len	gth	Slope	Velocity	Capacity	Description				
	(min) (fe	eet)	(ft/ft)	(ft/sec)	(cfs)	-				
_	6.0			•	•	Direct Entry,	Direct			

### Summary for Subcatchment 46S: Bay 1

Runoff = 0.14 cfs @ 12.13 hrs, Volume= 552 cf, Depth> 5.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Α	rea (sf)	CN	Description	1							
*		1,192	98	porous pav	ous pavement							
		1,192		100.00% lı	00.00% Impervious Area							
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description						
	6.0					Direct Entry, min						

### Summary for Subcatchment 49S: Bay 2

Runoff = 0.35 cfs @ 12.13 hrs, Volume= 1,322 cf, Depth> 5.55"

	Area (sf)	CN	Description
*	1,192	98	porous pavement
*	1,664	98	pavement HSG C
	2,856	98	Weighted Average
	2,856		100.00% Impervious Area

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T (min		Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description	
6.0	)		, ,		Direct Entry,	, min

### Summary for Subcatchment 50S: Bay 3

Runoff 0.50 cfs @ 12.13 hrs, Volume= 1,924 cf, Depth> 5.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

_	Д	rea (sf)	CN	Description	1								
-	*	2,545	98	porous pav	rous pavement HSG C								
	*	1,612	98	pavement I	evement HSG C								
		4,157	98	Weighted A	Average								
		4,157		100.00% lr	100.00% Impervious Area								
	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	·							
•	6.0	, ,	,	,	, ,	Direct Entry, min							

Direct Entry, min

### Summary for Subcatchment 51S: Bay 4

Runoff 0.49 cfs @ 12.13 hrs, Volume= 1,888 cf, Depth> 5.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 25-Year Rainfall=5.80"

	Д	rea (sf)	CN	Description	1							
*		1,530	98	porous pav	ement HS0	GC						
*		2,549	98	pavement l	vement HSG C							
		4,079	98	Weighted A	Average							
		4,079		100.00% lr	npervious A	Area						
	Tc	Length	Slope	e Velocity	Capacity	Description						
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)							
_	6.0					Direct Entry, min						

### Summary for Pond 1P: Dep 1

Inflow Area = 79,064 sf, 15.90% Impervious, Inflow Depth > 4.94" for 25-Year event 4.22 cfs @ 12.53 hrs, Volume= Inflow 32,518 cf 4.19 cfs @ 12.54 hrs, Volume= Outflow 32,517 cf, Atten= 1%, Lag= 1.0 min Primary 4.19 cfs @ 12.54 hrs, Volume= 32,517 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 30.12' @ 12.55 hrs Surf.Area= 4,447 sf Storage= 2,784 cf

2,076

6,188

10,039

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 15.8 min (822.1 - 806.3)

3,899

8,477

11,600

30.00

31.00

32.00

Volume	Invert	Avail.Storage	Storage	Description	
#1	28.00'	18,511 cf	Custom	Stage Data (Pris	smatic) Listed below (Recalc)
Elevation	Surf.A	rea Inc	:Store	Cum.Store	
(feet)			c-feet)	(cubic-feet)	
28.00	1	63	0	0	
20.00	2	53	208	208	

2,284

8,472

18,511

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Device	Routing	Invert	Outlet Devices
#1	Primary	30.00'	39.0' long x 10.0' breadth Broad-Crested Rectangular Weir
	_		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Primary	26.50'	2.0" Round Culvert L= 41.0' RCP, sq.cut end projecting, Ke= 0.500
	•		Inlet / Outlet Invert= 26.50' / 25.40' S= 0.0268 '/ Cc= 0.900 n= 0.010, Flow Area= 0.02 sf
#3	Primary	27.70'	<b>4.0"</b> Round Culvert L= 41.0' RCP, sq.cut end projecting, Ke= 0.500
	•		Inlet / Outlet Invert= 27.70' / 25.40' S= 0.0561 '/' Cc= 0.900 n= 0.010, Flow Area= 0.09 sf

Primary OutFlow Max=4.19 cfs @ 12.54 hrs HW=30.12' TW=29.93' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 4.02 cfs @ 0.86 fps)

**─2=Culvert** (Outlet Controls 0.02 cfs @ 1.12 fps) **─3=Culvert** (Outlet Controls 0.14 cfs @ 1.60 fps)

#### Summary for Pond 2P: dep 2

Inflow Area = 34,238 sf, 29.28% Impervious, Inflow Depth > 3.68" for 25-Year event

Inflow = 2.31 cfs @ 12.23 hrs, Volume= 10,513 cf

Outflow = 2.31 cfs @ 12.24 hrs, Volume= 8,752 cf, Atten= 0%, Lag= 0.4 min

Primary = 2.31 cfs @ 12.24 hrs, Volume= 8,752 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 35.54' @ 12.24 hrs Surf.Area= 2,233 sf Storage= 1,849 cf

Plug-Flow detention time= 122.5 min calculated for 8,752 cf (83% of inflow)

Center-of-Mass det. time= 44.1 min (881.9 - 837.7)

Volume	ln۱	<i>r</i> ert Avail.St	orage Storage	ge Description
#1	34.	00' 3,0	058 cf Custon	m Stage Data (Prismatic) Listed below (Recalc)
Elevation (fee		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.0 35.0	00	576 1.235	0 906	0 906
36.0		3,069	2,152	3,058
Device	Routing	Invert	Outlet Device	es
#1	Primary	35.50'	Head (feet)	x 10.0' breadth Broad-Crested Rectangular Weir 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 sh) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.31 cfs @ 12.24 hrs HW=35.54' TW=29.48' (Dynamic Tailwater) 1=Broad-Crested Rectangular Weir (Weir Controls 2.31 cfs @ 0.52 fps)

### Summary for Pond 3P: cent dep

Inflow Area = 188,583 sf, 1.18% Impervious, Inflow Depth > 0.65" for 25-Year event Inflow = 0.92 cfs @ 12.48 hrs, Volume= 10,228 cf

Outflow = 0.91 cfs @ 12.51 hrs, Volume= 10,213 cf, Atten= 1%, Lag= 1.6 min

Primary = 0.91 cfs @ 12.51 hrs, Volume= 10,213 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 32.36' @ 12.51 hrs Surf.Area= 276 sf Storage= 83 cf

Plug-Flow detention time= 1.7 min calculated for 10,213 cf (100% of inflow)

Center-of-Mass det. time= 1.0 min ( 985.8 - 984.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	31.83'	28,303 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
31.83	40	0	0
33.00	566	355	355
34.00	2,635	1,601	1,955
35.00	6,530	4,583	6,538
36.00	37,000	21,765	28,303
D : D ::		. 0	

Device	Routing	Invert	Outlet Devices
#1	Primary	35.30'	45.0' long x 10.0' breadth Broad-Crested Rectangular Weir
	-		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Primary	31.83'	<b>12.0"</b> Round Culvert L= 201.0' RCP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 31.83' / 25.00' S= 0.0340 '/' Cc= 0.900 n= 0.010. Flow Area= 0.79 sf

Primary OutFlow Max=0.91 cfs @ 12.51 hrs HW=32.36' TW=29.88' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

-2=Culvert (Inlet Controls 0.91 cfs @ 2.18 fps)

### Summary for Pond 4P: cb 1889

Inflow Area = 353,665 sf, 9.40% Impervious, Inflow Depth > 2.36" for 25-Year event

Inflow = 7.35 cfs @ 12.14 hrs, Volume= 69,660 cf

Outflow = 5.23 cfs @ 12.80 hrs, Volume= 69,652 cf, Atten= 29%, Lag= 40.0 min

Primary = 5.23 cfs @ 12.80 hrs, Volume= 69,652 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 30.05' @ 12.77 hrs Surf.Area= 6,490 sf Storage= 4,190 cf

Plug-Flow detention time= 3.3 min calculated for 69,652 cf (100% of inflow)

Center-of-Mass det. time= 3.3 min (854.5 - 851.2)

Volume	In	vert A	/ail.Storage	Storage	ge Description
#1	25	.00'	42,875 cf	Custon	m Stage Data (Prismatic) Listed below (Recalc)
Elevation (fee		Surf.Area (sq-ft		c.Store pic-feet)	Cum.Store (cubic-feet)
25.0	00	30		0	0
28.	00	157	•	281	281
29.0	00	623	1	390	671
30.0	00	5,783		3,203	3,874
32.	00	33,218	1	39,001	42,875
Device	Routing	]	nvert Out	tlet Device	es
#1	Primary	, 2			d Culvert L= 55.0' RCP, sq.cut end projecting, Ke= 0.500
			Inle	t / Outlet I	Invert= 24.90' / 23.60' S= 0.0236 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

**Primary OutFlow** Max=5.23 cfs @ 12.80 hrs HW=30.05' TW=27.82' (Dynamic Tailwater) **1-Culvert** (Outlet Controls 5.23 cfs @ 6.66 fps)

### Summary for Pond 20P: Cistern

Inflow Area = 134,437 sf, 13.16% Impervious, Inflow Depth > 0.85" for 25-Year event

Inflow = 0.75 cfs @ 12.71 hrs, Volume= 9,521 cf

Outflow = 0.75 cfs @ 12.71 hrs, Volume= 8,900 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.75 cfs @ 12.71 hrs, Volume= 8,900 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.93' @ 12.71 hrs Surf.Area= 79 sf Storage= 623 cf

Plug-Flow detention time= 55.6 min calculated for 8,896 cf (93% of inflow)

Center-of-Mass det. time= 25.0 min (978.1 - 953.1)

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Volume	Invert	Avail.Stora	ge Storage Description
#1	32.00'	628	cf 10.00'D x 8.00'H Vertical Cone/Cylinder
Device	Routing	Invert (	Dutlet Devices
#1	Primary	39.90' 1	1.0" x 6.5" Horiz. Orifice/Grate X 11.00 columns X 3 rows C= 0.600
		_	imited to weir flow at low heads
#2	Primary		00.0' long x 15.0' breadth Broad-Crested Rectangular Weir
		H	Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
		(	Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.75 cfs @ 12.71 hrs HW=39.93' TW=35.13' (Dynamic Tailwater)

-1=Orifice/Grate (Weir Controls 0.75 cfs @ 0.58 fps)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

#### Summary for Pond 21P: cb 6087

353,665 sf, 9.40% Impervious, Inflow Depth > 2.36" for 25-Year event Inflow Area =

Inflow 5.23 cfs @ 12.80 hrs, Volume= 69.652 cf =

5.23 cfs @ 12.80 hrs, Volume= Outflow = 69,652 cf, Atten= 0%, Lag= 0.0 min

5.23 cfs @ 12.80 hrs. Volume= 69.652 cf Primary

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 27.83' @ 12.75 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	23.60'	<b>12.0"</b> Round Culvert L= 52.0' RCP, sq.cut end projecting, Ke= 0.500
	-		Inlet / Outlet Invert= 23.60' / 23.00' S= 0.0115 '/' Cc= 0.900 n= 0.013. Flow Area= 0.79 sf

Primary OutFlow Max=5.23 cfs @ 12.80 hrs HW=27.82' TW=25.66' (Dynamic Tailwater)

1=Culvert (Outlet Controls 5.23 cfs @ 6.66 fps)

### Summary for Pond 22P: HW 1

220,170 sf, 12.92% Impervious, Inflow Depth > 1.05" for 25-Year event Inflow Area =

2.09 cfs @ 12.47 hrs, Volume= 1.50 cfs @ 12.83 hrs, Volume= 1.50 cfs @ 12.83 hrs, Volume= Inflow 19.305 cf =

Outflow = 18,886 cf, Atten= 28%, Lag= 21.4 min

Primary 18,886 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 34.15' @ 12.83 hrs Surf.Area= 1,691 sf Storage= 1,751 cf

Flood Elev= 34.50' Surf.Area= 2,516 sf Storage= 2,477 cf

Plug-Flow detention time= 21.3 min calculated for 18,886 cf (98% of inflow)

Center-of-Mass det. time= 10.9 min (960.8 - 949.9)

Inv	ert Avail.S	torage S	Storage Descri	ption	
31.	50' 8	,939 cf <b>C</b>	Custom Stage	Data (Pris	matic) Listed below (Recalc)
			_		
on	Surf.Area	Inc.S	tore Cu	m.Store	
et)	(sq-ft)	(cubic-f	eet) (cu	bic-feet)	
50	131		0	0	
00	607		554	554	
00	1,321		964	1,518	
00	6,100	7,	421	8,939	
Routing	Inver	t Outlet [	Devices		
Primary	31.58	' 12.0" F	Round Culvert	L= 34.0'	RCP, rounded edge headwall, Ke= 0.100
_		Inlet / C	Outlet Invert= 3	31.58' / 25.	32' S= 0.1841 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf
Device 1	32.50	' 7.0" Ve	rt. Orifice/Gra	te C= 0.	600
	31 on et) 50 00 00 Routing Primary	31.50' 8, on Surf.Area et) (sq-ft) 50 131 00 607 00 1,321 00 6,100  Routing Inver Primary 31.58	31.50' 8,939 cf Con Surf.Area Inc.Set) (sq-ft) (cubic-f (	31.50' 8,939 cf Custom Stage  on Surf.Area Inc.Store Cu et) (sq-ft) (cubic-feet) (cu 50 131 0 00 607 554 00 1,321 964 00 6,100 7,421  Routing Invert Outlet Devices  Primary 31.58' 12.0" Round Culvert Inlet / Outlet Invert= 3	31.50' 8,939 cf Custom Stage Data (Prison Surf.Area Inc.Store Cum.Store et) (sq-ft) (cubic-feet) (cubic-feet)  50 131 0 0 0  50 607 554 554  50 1,321 964 1,518  50 6,100 7,421 8,939  Routing Invert Outlet Devices  Primary 31.58' 12.0" Round Culvert L= 34.0' Inlet / Outlet Invert= 31.58' / 25.

Primary OutFlow Max=1.50 cfs @ 12.83 hrs HW=34.15' TW=25.55' (Dynamic Tailwater)

<sup>-1=</sup>Culvert (Passes 1.50 cfs of 7.43 cfs potential flow)

**<sup>2=</sup>Orifice/Grate** (Orifice Controls 1.50 cfs @ 5.62 fps)

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### Summary for Pond 23P: Strmtr 2

Inflow Area = 12,687 sf, 40.99% Impervious, Inflow Depth > 1.84" for 25-Year event

Inflow = 0.25 cfs @ 12.57 hrs, Volume= 1,945 cf

Outflow = 0.25 cfs @ 12.57 hrs, Volume= 1,945 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.25 cfs @ 12.57 hrs, Volume= 1,945 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.38' @ 12.57 hrs

Flood Elev= 31.00'

DeviceRoutingInvertOutlet Devices#1Primary38.16'12.0" Round CulvertL= 222.0' RCP, groove end projecting, Ke= 0.200<br/>Inlet / Outlet Invert= 38.16' / 24.80' S= 0.0602 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=0.25 cfs @ 12.57 hrs HW=38.38' TW=23.20' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.25 cfs @ 1.99 fps)

### Summary for Pond 24P: RG #1

Inflow Area = 220,170 sf, 12.92% Impervious, Inflow Depth > 1.05" for 25-Year event

Inflow = 2.09 cfs @ 12.47 hrs, Volume= 19,330 cf

Outflow = 2.09 cfs @ 12.47 hrs, Volume= 19,305 cf, Atten= 0%, Lag= 0.0 min

Primary = 2.09 cfs @ 12.47 hrs, Volume= 19,305 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 35.13' @ 12.47 hrs Surf.Area= 407 sf Storage= 42 cf

Flood Elev= 36.50' Surf.Area= 10 sf Storage= 336 cf

Plug-Flow detention time= 1.1 min calculated for 19,305 cf (100% of inflow)

Center-of-Mass det. time= 0.4 min ( 949.9 - 949.5 )

Volume	lnv	ert Avail.S	torage	Storage D	escription	
#1	35.	00'	336 cf	Custom S	Stage Data (Pri	smatic) Listed below (Recalc)
Elevation (fee		Surf.Area (sq-ft)		.Store c-feet)	Cum.Store (cubic-feet)	
35.0		131	(00.00	0	0	
35.0	80	394		21	21	
35.	50	500		188	209	
36.0	00	10		128	336	
Device	Routing	Inver	t Outle	et Devices		
#1	Primary	35.08	65.0'	long x 1.0	' breadth Broa	nd-Crested Rectangular Weir
	•		Head	(feet) 0.2	0 0.40 0.60	0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00
			Coef.	. (English)	2.69 2.72 2.	75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=2.09 cfs @ 12.47 hrs HW=35.13' TW=33.79' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 2.09 cfs @ 0.62 fps)

### Summary for Pond 25P: Strmtr 1

Inflow Area = 69,766 sf, 46.99% Impervious, Inflow Depth > 2.63" for 25-Year event

Inflow = 2.09 cfs @ 12.37 hrs, Volume= 15,303 cf

Outflow = 2.09 cfs @ 12.37 hrs, Volume= 15,303 cf, Atten= 0%, Lag= 0.0 min

Primary = 2.09 cfs @ 12.37 hrs, Volume= 15,303 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 27.48' @ 12.37 hrs

Flood Elev= 31.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	26.78'	<b>12.0" Round Culvert</b> L= 51.0' RCP, groove end projecting, Ke= 0.200
			Inlet / Outlet Invert= 26.78' / 24.81' S= 0.0386 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

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**Primary OutFlow** Max=2.09 cfs @ 12.37 hrs HW=27.48' TW=25.16' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 2.09 cfs @ 3.56 fps)

### Summary for Pond 26P: CB 2

Inflow Area = 22,968 sf, 25.66% Impervious, Inflow Depth > 1.42" for 25-Year event

Inflow = 0.53 cfs @ 12.20 hrs, Volume= 2,712 cf

Outflow = 0.53 cfs @ 12.20 hrs, Volume= 2,712 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.53 cfs @ 12.20 hrs, Volume= 2,712 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 36.56' @ 12.20 hrs

Flood Elev= 40.05'

DeviceRoutingInvertOutlet Devices#1Primary36.22'10.0" Round Culvert L= 150.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 36.22' / 27.72' S= 0.0567 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.53 cfs @ 12.20 hrs HW=36.56' TW=28.23' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.53 cfs @ 2.49 fps)

### Summary for Pond 27P: DI 1

Inflow Area = 31,138 sf, 34.55% Impervious, Inflow Depth > 2.29" for 25-Year event

Inflow = 1.36 cfs @ 12.14 hrs, Volume= 5,953 cf

Outflow = 1.36 cfs @ 12.14 hrs, Volume= 5,953 cf, Atten= 0%, Lag= 0.0 min

Primary = 1.36 cfs @ 12.14 hrs, Volume= 5,953 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 28.31' @ 12.14 hrs

Flood Elev= 33.85'

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 27.72'
 10.0" Round Culvert L= 70.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 27.72' / 26.36' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=1.36 cfs @ 12.14 hrs HW=28.31' TW=26.95' (Dynamic Tailwater)

1=Culvert (Inlet Controls 1.36 cfs @ 3.27 fps)

#### Summary for Pond 28P: DI 2

Inflow Area = 4,009 sf, 28.16% Impervious, Inflow Depth > 2.12" for 25-Year event

Inflow = 0.22 cfs @ 12.13 hrs, Volume= 707 cf

Outflow = 0.22 cfs @ 12.13 hrs, Volume= 707 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.22 cfs @ 12.13 hrs, Volume= 707 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 34.05' @ 12.13 hrs

Flood Elev= 35.96'

Device Routing Invert Outlet Devices

#1 Primary 33.84' 10.0" Round Culvert L= 66.0' RCP, groove end projecting, Ke= 0.200
Inlet / Outlet Invert= 33.84' / 33.00' S= 0.0127 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.21 cfs @ 12.13 hrs HW=34.05' TW=33.20' (Dynamic Tailwater)

**1=Culvert** (Inlet Controls 0.21 cfs @ 1.96 fps)

### Summary for Pond 29P: CB 1

Inflow Area = 9,924 sf, 46.59% Impervious, Inflow Depth > 2.28" for 25-Year event Inflow = 0.41 cfs @ 12.24 hrs, Volume= 1,885 cf

Outflow = 0.41 cfs @ 12.24 hrs, Volume= 1,885 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.41 cfs @ 12.24 hrs, Volume= 1,885 cf

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Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 54.05' @ 12.24 hrs

Flood Elev= 57.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	53.75'	<b>10.0"</b> Round Culvert L= 46.0' RCP, groove end projecting, Ke= 0.200
	-		Inlet / Outlet Invert= 53.75' / 42.60' S= 0.2424 '/ Cc= 0.900 n= 0.010. Flow Area= 0.55 sf

Primary OutFlow Max=0.41 cfs @ 12.24 hrs HW=54.05' TW=39.82' (Dynamic Tailwater) 1=Culvert (Inlet Controls 0.41 cfs @ 2.33 fps)

### Summary for Pond 30P: CB 3

5,166 sf, 69.53% Impervious, Inflow Depth > 3.59" for 25-Year event Inflow Area =

Inflow 0.47 cfs @ 12.13 hrs, Volume= 1,547 cf =

Outflow 0.00 cfs @ 0.00 hrs. Volume= 0 cf, Atten= 100%, Lag= 0.0 min =

Primary 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.81' @ 24.00 hrs Surf.Area= 802 sf Storage= 1,547 cf

Flood Elev= 43.50' Surf.Area= 802 sf Storage= 1,789 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	36.00'	701 cf	20.83'W x 38.50'L x 3.54'H Field A
			2,841 cf Overall - 1,088 cf Embedded = 1,753 cf x 40.0% Voids
#2A	36.50'	1,088 cf	Cultec R-330XLHD x 20 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

1,789 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	39.04'	<b>8.0" Round Culvert</b> L= 268.0' RCP, groove end projecting, Ke= 0.200
	-		Inlet / Outlet Invert= 39.04' / 26.50' S= 0.0468 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf
#2	Device 1	43.04'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.00' TW=26.78' (Dynamic Tailwater)

-1=Culvert (Controls 0.00 cfs)

**2=Orifice/Grate** (Controls 0.00 cfs)

### Summary for Pond 31P: RG #3

22,968 sf, 25.66% Impervious, Inflow Depth > 1.43" for 25-Year event Inflow Area =

Inflow 0.53 cfs @ 12.20 hrs, Volume= 2.735 cf =

Outflow 0.53 cfs @ 12.20 hrs, Volume= 2,712 cf, Atten= 0%, Lag= 0.2 min =

0.53 cfs @ 12.20 hrs, Volume= Primary 2,712 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.82' @ 12.20 hrs Surf.Area= 398 sf Storage= 29 cf

Flood Elev= 43.50' Surf.Area= 500 sf Storage= 244 cf

Plug-Flow detention time= 6.9 min calculated for 2,712 cf (99% of inflow)

Center-of-Mass det. time= 2.6 min (910.1 - 907.5)

Volume	Invert	Avail.Storage	Storage Description
#1	39.72'	244 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
39.72	131	0	0
39.80	394	21	21
40.30	500	224	244

Device Routing Invert Outlet Devices

#1 Primary 39.80' 65.0' long x 1.0' breadth Broad-Crested Rectangular Weir

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.53 cfs @ 12.20 hrs HW=39.82' TW=36.56' (Dynamic Tailwater) 1=Broad-Crested Rectangular Weir (Weir Controls 0.53 cfs @ 0.39 fps)

#### Summary for Pond 32P: PrkCis 1

Inflow Area = 1,192 sf,100.00% Impervious, Inflow Depth > 5.55" for 25-Year event

Inflow = 0.14 cfs @ 12.13 hrs, Volume= 552 cf

Outflow = 0.00 cfs @ 24.00 hrs, Volume= 2 cf, Atten= 100%, Lag= 712.3 min

Primary = 0.00 cfs @ 24.00 hrs, Volume= 2 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.22' @ 24.00 hrs Surf.Area= 863 sf Storage= 550 cf

Flood Elev= 42.00' Surf.Area= 863 sf Storage= 1,733 cf

Plug-Flow detention time= 1,348.2 min calculated for 2 cf (0% of inflow)

Center-of-Mass det. time= 666.6 min (1,413.4 - 746.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	38.20'	689 cf	19.17'W x 45.00'L x 3.21'H Field A
			2,767 cf Overall - 1,044 cf Embedded = 1,723 cf x 40.0% Voids
#2A	38.70'	1,044 cf	Cultec R-280HD x 24 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices				
#1	Primary	39.20'	<b>4.0" Round Culvert</b> L= 100.0' RCP, mitered to conform to fill, Ke= 0.700				
	-		Inlet / Outlet Invert= 39.20' / 30.00' S= 0.0920 '/' Cc= 0.900 n= 0.010. Flow Area= 0.09 sf				

Primary OutFlow Max=0.00 cfs @ 24.00 hrs HW=39.22' TW=21.83' (Dynamic Tailwater) ←1=Culvert (Inlet Controls 0.00 cfs @ 0.40 fps)

### Summary for Pond 33P: PrkCst 2

Inflow Area = 2,856 sf,100.00% Impervious, Inflow Depth > 5.55" for 25-Year event

Inflow = 0.35 cfs @ 12.13 hrs, Volume= 1,322 cf

Outflow = 0.06 cfs @ 12.51 hrs, Volume= 832 cf, Atten= 83%, Lag= 23.2 min

Primary = 0.06 cfs @ 12.51 hrs, Volume = 832 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 37.90' @ 12.51 hrs Surf.Area= 728 sf Storage= 746 cf

Flood Elev= 41.00' Surf.Area= 728 sf Storage= 1,459 cf

Plug-Flow detention time= 306.1 min calculated for 831 cf (63% of inflow)

Center-of-Mass det. time= 171.7 min (918.6 - 746.8)

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Volume	Invert	Avail.Storage	Storage Description
#1A	36.40'	585 cf	19.17'W x 38.00'L x 3.21'H Field A
			2,337 cf Overall - 874 cf Embedded = 1,462 cf x 40.0% Voids
#2A	36.90'	874 cf	Cultec R-280HD x 20 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		4 450 -4	Tatal Assallation Otamana

1,459 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	<b>2.0" Round Culvert</b> L= 50.0' RCP, mitered to conform to fill, Ke= 0.700
	•		Inlet / Outlet Invert= 37.40' / 34.66' S= 0.0548 '/' Cc= 0.900 n= 0.010. Flow Area= 0.02 sf

**Primary OutFlow** Max=0.06 cfs @ 12.51 hrs HW=37.90' TW=23.20' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.06 cfs @ 2.75 fps)

### Summary for Pond 34P: CC Cisterns

Inflow Area = 8,964 sf,100.00% Impervious, Inflow Depth > 5.55" for 25-Year event

Inflow = 1.08 cfs @ 12.13 hrs, Volume= 4,149 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 476 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 476 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 44.20' @ 24.00 hrs Surf.Area= 1,362 sf Storage= 3,674 cf

Plug-Flow detention time= 710.0 min calculated for 476 cf (11% of inflow)

Center-of-Mass det. time= 265.0 min (1,011.9 - 746.8)

Volume	ln۱	∕ert Α\	ail.Storage	Storage	Description	
#1	41.	50'	5,448 cf	Custom	Stage Data (Pr	rismatic) Listed below (Recalc) x 6
Elevation	on	Surf.Area	. In	c.Store	Cum.Store	
(fee	et)	(sq-ft)	(cub	ic-feet)	(cubic-feet)	1
41.	50	227		0	0	· 
45.	50	227		908	908	i
Device	Routing	I	nvert Out	et Device:	S	
#1	Primary	4	1.50' <b>0.2</b> "	Vert. Orif	ice/Grate X 6	rows with 1.0" cc spacing C= 0.600

**Primary OutFlow** Max=0.01 cfs @ 24.00 hrs HW=44.20' TW=21.83' (Dynamic Tailwater) **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 7.58 fps)

#### Summary for Pond 35P: DMH 2

Inflow Area = 4,009 sf, 28.16% Impervious, Inflow Depth > 2.12" for 25-Year event

Inflow = 0.22 cfs @ 12.13 hrs, Volume= 707 cf

Outflow = 0.22 cfs @ 12.13 hrs, Volume= 707 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.22 cfs @ 12.13 hrs, Volume= 707 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 33.20' @ 12.13 hrs

Flood Elev= 35.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	<b>12.0" Round Culvert</b> L= 26.0' RCP, groove end projecting, Ke= 0.200
			Inlet / Outlet Invert = 33.00' / 24.90' S = 0.3115 '/' Cc = 0.900 n = 0.010 Flow Area = 0.79 sf

**Primary OutFlow** Max=0.21 cfs @ 12.13 hrs HW=33.20' TW=26.95' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.21 cfs @ 1.91 fps)

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### Summary for Pond 36P: DMH 3

Inflow Area = 35,147 sf, 33.82% Impervious, Inflow Depth > 2.27" for 25-Year event

Inflow = 1.57 cfs @ 12.14 hrs, Volume= 6,660 cf

Outflow = 1.57 cfs @ 12.14 hrs, Volume= 6,660 cf, Atten= 0%, Lag= 0.0 min

Primary = 1.57 cfs @ 12.14 hrs, Volume= 6,660 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 26.95' @ 12.14 hrs

Flood Elev= 34.00'

Device Routing Invert Outlet Devices

#1 Primary 26.36' **12.0" Round Culvert** L= 73.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 26.36' / 24.90' S= 0.0200 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.57 cfs @ 12.14 hrs HW=26.95' TW=25.54' (Dynamic Tailwater)

1=Culvert (Inlet Controls 1.57 cfs @ 3.27 fps)

### Summary for Pond 37P: DMH 4

Inflow Area = 259,207 sf, 15.59% Impervious, Inflow Depth > 1.20" for 25-Year event

Inflow = 1.83 cfs @ 12.55 hrs, Volume= 25,907 cf

Outflow = 1.83 cfs @ 12.55 hrs, Volume= 25,907 cf, Atten= 0%, Lag= 0.0 min

Primary = 1.83 cfs @ 12.55 hrs, Volume= 25,907 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 25.62' @ 12.36 hrs

Flood Elev= 34.50'

Device Routing Invert Outlet Devices

#1 Primary 24.90' **12.0" Round Culvert** L= 37.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 24.90' / 24.00' S= 0.0243 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=1.83 cfs @ 12.55 hrs HW=25.61' TW=25.07' (Dynamic Tailwater)

1=Culvert (Outlet Controls 1.83 cfs @ 4.32 fps)

#### Summary for Pond 38P: DMH 5

Inflow Area = 328,973 sf, 22.24% Impervious, Inflow Depth > 1.50" for 25-Year event

Inflow = 3.84 cfs @ 12.36 hrs, Volume= 41,210 cf

Outflow = 3.84 cfs @ 12.36 hrs, Volume= 41,210 cf, Atten= 0%, Lag= 0.0 min

Primary = 3.84 cfs @ 12.36 hrs, Volume= 41,210 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 25.16' @ 12.36 hrs

Flood Elev= 33.00'

Device Routing Invert Outlet Devices

#1 Primary 24.00' **12.0" Round Culvert** L= 59.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 24.00' / 23.00' S= 0.0169 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=3.84 cfs @ 12.36 hrs HW=25.16' TW=23.08' (Dynamic Tailwater)

1=Culvert (Inlet Controls 3.84 cfs @ 4.89 fps)

### Summary for Pond 39P: PrkCis 3

Inflow Area = 4,157 sf,100.00% Impervious, Inflow Depth > 5.55" for 25-Year event

Inflow = 0.50 cfs @ 12.13 hrs, Volume= 1,924 cf

Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 36.72' @ 24.00 hrs Surf.Area= 1,226 sf Storage= 1,924 cf

Flood Elev= 39.00' Surf.Area= 1,226 sf Storage= 2,485 cf

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Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	967 cf	23.58'W x 52.00'L x 3.21'H Field A
			3,934 cf Overall - 1,518 cf Embedded = 2,417 cf x 40.0% Voids
#2A	35.00'	1,518 cf	Cultec R-280HD x 35 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 5 rows

2,485 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	<b>6.0" Round Culvert</b> L= 50.0' RCP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Invert= 37.40' / 32.46' S= 0.0988 '/' Cc= 0.900 n= 0.010, Flow Area= 0.20 sf
#2	Primary	37.80'	80.0' long x 10.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' TW=21.50' (Dynamic Tailwater)

1=Culvert (Controls 0.00 cfs)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

### Summary for Pond 40P: PrkCis 4

Inflow Area = 4,079 sf,100.00% Impervious, Inflow Depth > 5.55" for 25-Year event

Inflow = 0.49 cfs @ 12.13 hrs, Volume= 1,888 cf

Outflow = 0.01 cfs @ 19.34 hrs, Volume= 233 cf, Atten= 98%, Lag= 432.8 min

Primary = 0.01 cfs @ 19.34 hrs, Volume= 233 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 32.82' @ 19.34 hrs Surf.Area= 1,094 sf Storage= 1,662 cf

Flood Elev= 40.00' Surf.Area= 1,094 sf Storage= 2,453 cf

Plug-Flow detention time= 916.9 min calculated for 233 cf (12% of inflow)

Center-of-Mass det. time= 484.4 min ( 1,231.3 - 746.8 )

Volume	Invert	Avail.Storage	Storage Description
#1A	30.67'	947 cf	20.83'W x 52.50'L x 3.54'H Field A
			3,874 cf Overall - 1,505 cf Embedded = 2,369 cf x 40.0% Voids
#2A	31.17'	1,505 cf	Cultec R-330XLHD x 28 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
`		0.450 (	T ( 1 A 3 1 1 C)

2,453 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	32.75'	<b>4.0" Round Culvert</b> L= 60.0' RCP, mitered to conform to fill, Ke= 0.700
	•		Inlet / Outlet Invert= 32.75' / 32.26' S= 0.0082 '/' Cc= 0.900 n= 0.010. Flow Area= 0.09 sf

**Primary OutFlow** Max=0.01 cfs @ 19.34 hrs HW=32.82' TW=21.87' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.01 cfs @ 0.79 fps)

### Summary for Pond 41P: CB 5

Inflow Area = 3,890 sf, 1.80% Impervious, Inflow Depth > 1.11" for 25-Year event

Inflow = 0.09 cfs @ 12.14 hrs, Volume= 360 cf

Outflow = 0.09 cfs @ 12.14 hrs, Volume= 360 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.09 cfs @ 12.14 hrs, Volume= 360 cf

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Peak Elev= 29.08' @ 12.14 hrs Flood Elev= 31.00'

Device Routing Invert Outlet Devices

**10.0"** Round Culvert L= 38.0' RCP, groove end projecting, Ke= 0.200 28.94' #1 Primary

Inlet / Outlet Invert= 28.94' / 25.90' S= 0.0800 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.09 cfs @ 12.14 hrs HW=29.08' TW=25.54' (Dvnamic Tailwater)

1=Culvert (Inlet Controls 0.09 cfs @ 1.58 fps)

### Summary for Pond 43P: CE Cisterns

5,923 sf,100.00% Impervious, Inflow Depth > 5.55" for 25-Year event Inflow Area =

0.72 cfs @ 12.13 hrs, Volume= 2,742 cf Inflow =

0.01 cfs @ 24.00 hrs, Volume= Outflow 330 cf, Atten= 99%, Lag= 712.3 min =

Primary 0.01 cfs @ 24.00 hrs. Volume= 330 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 45.66' @ 24.00 hrs Surf.Area= 908 sf Storage= 2,412 cf

Plug-Flow detention time= 685.4 min calculated for 330 cf (12% of inflow)

Center-of-Mass det. time= 248.7 min (995.5 - 746.8)

Volume	ln۱	ert Ava	ail.Storage	Storage	Description	
#1	43.	00'	3,632 cf	Custom	Stage Data (P	rismatic) Listed below (Recalc) x 4
Elevation	<b>an</b>	Surf.Area	lne	:Store	Cum.Store	
(fee	et)	(sq-ft)		c-feet)	(cubic-feet)	
43.0	00	227		0	C	
47.0	00	227		908	908	}
Device	Routing	Ir	vert Outl	et Devices	i	
#1	Primary	43	3.00' <b>0.2"</b>	Vert. Orif	ice/Grate X 4	rows with 1.0" cc spacing C= 0.600

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=45.66' TW=21.83' (Dynamic Tailwater) 1=Orifice/Grate (Orifice Controls 0.01 cfs @ 7.65 fps)

### Summary for Pond 44P: SR Cisterns

Inflow Area = 7,823 sf,100.00% Impervious, Inflow Depth > 5.55" for 25-Year event

Inflow 0.95 cfs @ 12.13 hrs, Volume= 3,621 cf

0.01 cfs @ 24.00 hrs, Volume= 417 cf, Atten= 99%, Lag= 712.3 min Outflow

0.01 cfs @ 24.00 hrs, Volume= 417 cf Primary

Routing by Dvn-Stor-Ind method. Time Span= 0.00-24.00 hrs. dt= 0.01 hrs / 3 Peak Elev= 48.82' @ 24.00 hrs Surf.Area= 1,135 sf Storage= 3,204 cf

Plug-Flow detention time= 700.1 min calculated for 417 cf (12% of inflow)

Center-of-Mass det. time= 255.9 min (1,002.7 - 746.8)

Volume	Inv	ert Ava	ail.Storage	Storage D	torage Description					
#1	46.	00'	5,675 cf	Custom S	Custom Stage Data (Prismatic) Listed below (Recalc) x 5					
Elevatio		Surf.Area		c.Store	Cum.Store					
(fee	et)	(sq-ft)	(cub	ic-feet)	(cubic-feet)					
46.0	00	227		0	0					
51.0	00	227		1,135	1,135					
Device	Routing	In	vert Out	et Devices						
#1	Primary	46	.00' <b>0.2"</b>	Vert. Orific	<b>e/Grate</b> X5 r	ows with 1.0" cc spacing C= 0.600				

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=48.82' TW=21.83' (Dynamic Tailwater)

-1=Orifice/Grate (Orifice Controls 0.01 cfs @ 7.83 fps)

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### Summary for Pond 45P: HACisterns

Inflow Area = 10,118 sf,100.00% Impervious, Inflow Depth > 5.55" for 25-Year event

Inflow = 1.22 cfs @ 12.13 hrs, Volume= 4,684 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 513 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 513 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 47.06' @ 24.00 hrs Surf.Area= 1,362 sf Storage= 4,170 cf

Plug-Flow detention time= 713.5 min calculated for 513 cf (11% of inflow)

Center-of-Mass det. time= 261.0 min (1,007.8 - 746.8)

Volume	ln۱	ert Ava	ail.Storage	Storage	Description	
#1	44.	00'	6,810 cf	Custom	Stage Data (Pr	ismatic) Listed below (Recalc) x 6
Elevation (fee		Surf.Area (sq-ft)		c.Store ic-feet)	Cum.Store (cubic-feet)	
44.( 49.(	00	227 227	(000	0	0 1.135	
Device	Routina		vert Outl	et Devices	,	
#1	Primary				<del>-</del>	rows with 1.0" cc spacing C= 0.600

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=47.06' TW=21.83' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.01 cfs @ 8.12 fps)

### Summary for Pond 46P: CB 4

Inflow Area = 400,830 sf, 31.77% Impervious, Inflow Depth > 1.50" for 25-Year event

Inflow = 4.42 cfs @ 12.35 hrs, Volume= 49,965 cf

Outflow = 4.15 cfs @ 12.54 hrs, Volume= 49,794 cf, Atten= 6%, Lag= 11.2 min

Primary = 4.15 cfs @ 12.54 hrs, Volume= 49,794 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 23.21' @ 12.54 hrs Surf.Area= 1,297 sf Storage= 1,633 cf

Plug-Flow detention time= 6.0 min calculated for 49,773 cf (100% of inflow)

Center-of-Mass det. time= 4.1 min (905.7 - 901.6)

Volume	Invert	Avail.Storage	Storage Description
#1	27.80'	23,576 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2A	21.50'	259 cf	21.79'W x 59.50'L x 6.00'H Field A
			7,780 cf Overall - 7,131 cf Embedded = 648 cf $\times$ 40.0% Voids
#3A	22.00'	5,694 cf	StormTrap SingleTrap 5-0 x 3 Inside #2
			Inside= 101.7"W x 60.0"H => 38.33 sf x 15.40'L = 590.2 cf
			Outside= $101.7$ "W x $66.0$ "H => $46.64$ sf x $15.40$ 'L = $718.0$ cf
			8.48' x 46.19' Core + 6.66' Border = 21.79' x 59.50' System

29,529 cf Total Available Storage

### Storage Group A created with Chamber Wizard

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
27.80	4	0	0
28.00	1,704	171	171
30.00	4,071	5,775	5,946
32.00	13,559	17,630	23,576

Device	Routing	Invert	Outlet Devices
#1	Primary	21.50'	<b>12.0" Round Culvert</b> L= 141.0' RCP, sq.cut end projecting, Ke= 0.500
			Inlet / Outlet Invert= 21.50' / 19.40' S= 0.0149 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

**Primary OutFlow** Max=4.15 cfs @ 12.54 hrs HW=23.21' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 4.15 cfs @ 5.29 fps)

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### Summary for Pond 47P: HW

385,242 sf, 8.99% Impervious, Inflow Depth > 2.41" for 25-Year event Inflow Area =

6.77 cfs @ 12.14 hrs, Volume= Inflow 77,329 cf

Outflow 6.24 cfs @ 12.18 hrs, Volume= 77,320 cf, Atten= 8%, Lag= 2.8 min =

6.24 cfs @ 12.18 hrs, Volume= Primary 77,320 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 26.22' @ 12.18 hrs Surf.Area= 567 sf Storage= 544 cf

Plug-Flow detention time= 0.6 min calculated for 77,287 cf (100% of inflow)

Center-of-Mass det. time= 0.5 min (855.2 - 854.7)

Volume	ln۱	ert Av	ail.Storage	Storage	Description				
#1	23.	00'	75,612 cf	Custom	Custom Stage Data (Prismatic) Listed below (Recalc)				
Elevation	on	Surf.Area	Inc	.Store	Cum.Store				
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)				
23.0	00	10		0	0				
26.0	00	290		450	450				
28.0	00	2,812		3,102	3,552				
32.0	00	33,218	7	2,060	75,612				
Device	Routing	lr	overt Outle	et Devices					
#1	Primary	23	3.00' <b>12.0</b> '	' Round C	<b>Culvert</b> L= 141.0	RCP, sq.cut ei	nd projecting,	Ke= 0.500	
	,		Inlet	/ Outlet In	vert= 23.00' / 19.4	10' S= 0.0255 '/	' Cc= 0.900	n= 0.013.	Flow Area= 0.79 sf

Primary OutFlow Max=6.24 cfs @ 12.18 hrs HW=26.22' TW=0.00' (Dynamic Tailwater)

-1=Culvert (Inlet Controls 6.24 cfs @ 7.94 fps)

### Summary for Pond 48P: YW Cistern

2,136 sf,100.00% Impervious, Inflow Depth > 5.55" for 25-Year event Inflow Area =

0.26 cfs @ 12.13 hrs, Volume= Inflow = 989 cf

0.01 cfs @ 16.16 hrs, Volume= 0.01 cfs @ 16.16 hrs, Volume= Outflow 438 cf, Atten= 97%, Lag= 241.8 min =

Primary 438 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 54.59' @ 16.16 hrs Surf.Area= 392 sf Storage= 623 cf

Plug-Flow detention time= 395.4 min calculated for 438 cf (44% of inflow)

Center-of-Mass det. time= 210.5 min (957.3 - 746.8)

Volume	Inv	ert Ava	il.Storage	Storage	Description	
#1	53.	00'	1,176 cf	Custom	Stage Data (P	rismatic) Listed below (Recalc)
Elevation	on	Surf.Area	Inc	.Store	Cum.Store	)
(fe	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	1
53.0	00	392		0	0	1
56.0	00	392		1,176	1,176	i
Device	Routing	In	vert Outle	et Devices	i	
#1	Primary	53.	.00' <b>0.5</b> "	Vert. Orif	ice/Grate C=	0.600

Primary OutFlow Max=0.01 cfs @ 16.16 hrs HW=54.59' TW=21.95' (Dynamic Tailwater) 1=Orifice/Grate (Orifice Controls 0.01 cfs @ 6.03 fps)

### Summary for Link 1L: Total Exist

405,107 sf, 8.55% Impervious, Inflow Depth > 2.30" for 25-Year event Inflow Area =

6.24 cfs @ 12.18 hrs, Volume= 77,490 cf Inflow

Primary 6.24 cfs @ 12.18 hrs, Volume= 77,490 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow. Time Span= 0.00-24.00 hrs. dt= 0.01 hrs

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### **Summary for Link 20L: Total POST**

405,107 sf, 31.55% Impervious, Inflow Depth > 1.48" for 25-Year event 4.17 cfs @ 12.54 hrs, Volume= 49,987 cf 49,987 cf, Atten= 0%, Lag= 0.0 m Inflow Area =

Inflow = 49,987 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

### Summary for Subcatchment 1S: dep 1 DA

Runoff = 5.24 cfs @ 12.53 hrs, Volume= 40,909 cf, Depth> 6.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Α	rea (sf)	CN	Description	1							
*		8,110	98	roof & pvm	oof & pvmnt							
		50,133	94	Fallow, bar	e soil, HSG	S D						
		16,361	84	50-75% Gi	ass cover,	Fair, HSG D						
*		4,460	98	pre-exist w	arehouse, I	HSG D						
		79,064	93	Weighted A	Average							
		66,494		84.10% Pe	ervious Area	a						
		12,570		15.90% lm	pervious A	rea						
	Tc	Length	Slope	•	Capacity	Description						
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)							
	38.1	50	0.0400	0.02		Sheet Flow, cemetery						
						Grass: Short n= 0.150 P2= 0.04"						
	0.5	96	0.2300	3.36		Shallow Concentrated Flow, grass						
						Short Grass Pasture Kv= 7.0 fps						
	0.7	260	0.1400	6.02		Shallow Concentrated Flow, bare						
_						Unpaved Kv= 16.1 fps						
	39.3	406	Total									

### Summary for Subcatchment 2S: dep 2 DA

Runoff = 3.03 cfs @ 12.23 hrs, Volume= 13,913 cf, Depth> 4.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

_		Area (sf)	CN	Description	1					
*		4,525	98	roof & pvm	oof & pvmnt					
		13,599	68	<50% Gras	ss cover, P	oor, HSG A				
		8,272	77	Fallow, bar	e soil, HSG	G A				
		2,342	91	Fallow, bar	e soil, HSC	G C				
*		2,147	98	pre-exist he	ouse, HSG	A				
*		3,353	98	pre-exist w	arehouse,	HSG C				
		34,238	81	Weighted A	Average					
	24,213 70.72% Pervious Area					a				
		10,025		29.28% lm	pervious A	rea				
					•					
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•				
	14.1	25	0.1200	0.03		Sheet Flow, cemetery				
		_				Grass: Short n= 0.150 P2= 0.04"				
	0.5	97	0.2200	3.28		Shallow Concentrated Flow, grass				
		_				Short Grass Pasture Kv= 7.0 fps				
	0.6	216	0.1300	5.80		Shallow Concentrated Flow, bare soil				
						Unpaved Kv= 16.1 fps				
_	15.2	338	Total			· · · · · · · · · · · · · · · · · · ·				

### Summary for Subcatchment 3S: cent dep DA

Runoff = 2.36 cfs @ 12.42 hrs, Volume= 18,576 cf, Depth> 1.18"

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	Α	rea (sf)	CN	Description	1	
*		2,218	98	barn		
		18,317	89	<50% Gra	ss cover, P	oor, HSG D
	1	16,882	39	>75% Gra	ss cover, G	Good, HSG A
		48,880	36	Woods, Fa	air, HSG A	
*		2,286	97	Dirt roads,	HSG D	
_	1	88,583	44	Weighted	Average	
	1	86,365		98.82% Pe	ervious Area	a
		2,218		1.18% lmp	ervious Are	ea
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	24.6	50	0.1200	0.03		Sheet Flow, grass
						Grass: Short n= 0.150 P2= 0.04"
	0.7	125	0.1600	2.80		Shallow Concentrated Flow, cemetery
						Short Grass Pasture Kv= 7.0 fps
	0.4	77	0.0400	3.22		Shallow Concentrated Flow, bare
_						Unpaved Kv= 16.1 fps
	25.7	252	Total			

### Summary for Subcatchment 4S: rte one

Runoff = 0.02 cfs @ 13.07 hrs, Volume= 550 cf, Depth> 0.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

Ar	rea (sf)	CN	Description	1	
4,389 39 >75% Grass cover, Good, HSG A					
	15,476	30	Woods, Go	ood, HSG A	<b>\</b>
•	19,865	32	Weighted A	Average	
•	19,865		100.00% F	Pervious Are	ea
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	20	0.1000	0.03	, ,	Sheet Flow, cemetery
0.7	96	0.2300	2.40		Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, woods
0.2	49	0.4500	3.35		Woodland Kv= 5.0 fps Shallow Concentrated Flow, woods Woodland Kv= 5.0 fps
13.6	165	Total	•		

### Summary for Subcatchment 5S: dep 3 DA

Runoff = 3.24 cfs @ 12.13 hrs, Volume= 10,562 cf, Depth> 4.01"

	Area (sf)	CN	Description					
*	1,388	98	roof & pvmnt					
	28,408	74	>75% Grass cover, Good, HSG C					
	1,781	36	Woods, Fair, HSG A					
	31,577	73	Weighted Average					
	30,189		95.60% Pervious Area					
	1,388		4.40% Impervious Area					

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	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	0.2	25	0.1600	2.00		Shallow Concentrated Flow, woods
	0.4	43	0.1400	1.87		Woodland Kv= 5.0 fps Shallow Concentrated Flow, woods
	2.1	245	0.0800	1.98		Woodland Kv= 5.0 fps Shallow Concentrated Flow, grass
	3.3					Short Grass Pasture Kv= 7.0 fps  Direct Entry, 6 min minimum
_	6.0	313	Total			

### Summary for Subcatchment 6S: cb 1889 DA

Runoff = 6.87 cfs @ 12.13 hrs, Volume= 23,531 cf, Depth> 5.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Δ	Area (sf)	CN	Description	า				
*		8,445	98	roof & pvm	pof & pvmnt				
		14,077	86	<50% Gra	ss cover, P	oor, HSG C			
		4,389	39	>75% Gra	ss cover, G	ood, HSG A			
		5,092	77	Woods, Po	oor, HSG C				
*		3,284	97	Dirt roads,	HSG D				
_		16,493	94	Fallow, bar	re soil, HSG	G D			
		51,780		Weighted					
		43,335		83.69% Pe	ervious Area	a			
		8,445		16.31% lm	pervious A	rea			
		-	Slope	,		Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	0.2	25	0.0800	1.98		Shallow Concentrated Flow, cemetery			
						Short Grass Pasture Kv= 7.0 fps			
	0.7	107	0.1200	2.42		Shallow Concentrated Flow, cemetery			
						Short Grass Pasture Kv= 7.0 fps			
	0.6	107	0.3100	2.78		Shallow Concentrated Flow, woods			
				4.00		Woodland Kv= 5.0 fps			
	0.7	200	0.0950	4.96		Shallow Concentrated Flow, bare			
	0.0					Unpaved Kv= 16.1 fps			
_	3.8					Direct Entry, add for 6 min. minimum			
	6.0	439	Total						

### Summary for Subcatchment 20S: Cistern DA

Runoff = 1.57 cfs @ 12.62 hrs, Volume= 14,716 cf, Depth> 1.34"

	Area (sf)	CN	Description
*	78,503	39	cemertery
	10,899	30	Woods, Good, HSG A
*	3,034	98	exist roofs
*	12,226	98	impervious HSG D
	25,167	39	>75% Grass cover, Good, HSG A
	2,182	80	>75% Grass cover, Good, HSG D
	132,011	46	Weighted Average
	116,751		88.44% Pervious Area
	15,260		11.56% Impervious Area

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	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
-	38.1	50	0.0400	0.02	,	Sheet Flow, cemetery
	0.5	100	0.2600	3.57		Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, cemetery
	2.4	303	0.0900	2.10		Short Grass Pasture Kv= 7.0 fps  Shallow Concentrated Flow, lawn & swale  Short Grass Pasture Kv= 7.0 fps
-	41.0	453	Total			Chort Grade : dotate : tt= rio ipe

### Summary for Subcatchment 21S: CB 5

Runoff = 0.17 cfs @ 12.14 hrs, Volume= 586 cf, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Α	rea (sf)	CN	Description						
*		70	98	npervious HSG A						
		60	74	.75% Grass cover, Good, HSG C						
*		1,274	50	lanking D						
*		2,486	50	Pervious D						
		3,890	51	Weighted Average						
		3,820		98.20% Pervious Area						
		70		1.80% Impervious Area						
	Тс	Length	Slope	e Velocity Capacity Description						
	(min)	(feet)	(ft/ft							
_		(1001)	(1011		—					
	6.0			Direct Entry, direct						

### Summary for Subcatchment 22S: Strmtr 1 South

Runoff = 1.21 cfs @ 12.59 hrs, Volume= 9,178 cf, Depth> 2.63"

_	A	Area (sf)	CN	Description	1			
*		15,487	39	Cemetery	emetery			
		5,314	30		ood, HSG A	A		
*		2,400	98	impervious	HSG A			
		3,003	39	>75% Gra	ss cover, G	ood, HSG A		
		3,519	74	>75% Gras	ss cover, G	ood, HSG C		
		1,985	80			ood, HSG D		
*		8,451	98	impervious	HSG C			
*		1,736	98	impervious	HSG D			
		41,895	60	Weighted	Average			
		29,308		69.96% Pe	ervious Area	a		
		12,587		30.04% Im	pervious A	rea		
	Tc	Length	Slope	Velocity	Capacity	Description		
_	(min)	(feet)	(ft/ft	(ft/sec)	(cfs)			
	38.1	50	0.0400	0.02		Sheet Flow, cemetery		
						Grass: Short n= 0.150 P2= 0.04"		
	1.2	138	0.0700	1.85		Shallow Concentrated Flow, cemetery		
						Short Grass Pasture Kv= 7.0 fps		
	0.2	46	0.4800	3.46		Shallow Concentrated Flow, woods		
						Woodland Kv= 5.0 fps		
	0.4	76	0.2100	3.21		Shallow Concentrated Flow, swale		
						Short Grass Pasture Kv= 7.0 fps		
	1.0	226	0.0360	3.85		Shallow Concentrated Flow, pvd		
_						Paved Kv= 20.3 fps		
	40.9	536	Total					

### Summary for Subcatchment 23S: Strmtr2

Runoff = 0.39 cfs @ 12.54 hrs, Volume= 2,886 cf, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Α	rea (sf)	CN	Description	1				
*		2,231	39	Cemetery	emetery				
		2,408	30	Woods, G	ood, HSG A	4			
*		5,201	98	impervious	HSG A				
		2,847	39	>75% Gras	ss cover, G	ood, HSG A			
		12,687	61	Weighted	Average				
		7,486		59.01% Pe	ervious Area	a a constant of the constant o			
		5,201		40.99% Im	pervious A	rea			
	Tc	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	38.1	50	0.0400	0.02		Sheet Flow, cemetery			
						Grass: Short n= 0.150 P2= 0.04"			
	0.5	78	0.1300	2.52		Shallow Concentrated Flow, cemetery			
						Short Grass Pasture Kv= 7.0 fps			
	0.1	26	0.4600	3.39		Shallow Concentrated Flow, woods			
						Woodland Kv= 5.0 fps			
	0.2	59	0.4000	4.43		Shallow Concentrated Flow, swale			
						Short Grass Pasture Kv= 7.0 fps			
	0.4	67	0.0220	3.01		Shallow Concentrated Flow, paved			
_						Paved Kv= 20.3 fps			
	39.3	280	Total						

### Summary for Subcatchment 24S: CentDep

Runoff = 2.60 cfs @ 12.39 hrs, Volume= 16,120 cf, Depth> 2.26"

	Δ	Area (sf)	CN	Description	1	
*		40,139	39	Cemetery		
		6,033	30	Woods, Go	ood, HSG	A
*		1,199	98	impervious	HSG A	
*		75	98	impervious	HSG C	
		5,671	39	>75% Gras	ss cover, G	Good, HSG A
		21,301	80	>75% Gras	ss cover, G	Good, HSG D
*		9,481	98	impervious	HSG D	
*		1,143	50	planking H	SG D	
*		691	50	planking H	SG A	
		85,733	56	Weighted A	Average	
		74,978		87.46% Pe	ervious Are	ea
		10,755		12.54% lm	pervious A	Area
	Тс	0	Slope		Capacity	·
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	24.6	50	0.1200	0.03		Sheet Flow, grass
						Grass: Short n= 0.150 P2= 0.04"
	0.7	125	0.1600	2.80		Shallow Concentrated Flow, woods
						Short Grass Pasture Kv= 7.0 fps
	0.4	62	0.1600	2.80		Shallow Concentrated Flow, swale
						Short Grass Pasture Kv= 7.0 fps
	0.9	184	0.0270	3.34		Shallow Concentrated Flow, paved
_						Paved Kv= 20.3 fps
	26.6	421	Total			

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### Summary for Subcatchment 25S: Strmtr1 North

11,574 cf, Depth> 6.12" Runoff 1.94 cfs @ 12.33 hrs, Volume=

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Area (sf)	CN	Description	1		
*	10,501	98	impervious	HSG A		
*	6,100	98	impervious	HSG C		
	3,082	74	>75% Gra	ss cover, G	ood, HSG C	
	3,022	80	>75% Gras	ss cover, G	ood, HSG D	
	22,705	92	Weighted	Average		
	6,104			ervious Area	l	
	16,601		73.12% Im	pervious A	ea	
	Tc Length	Slope	Velocity	Capacity	Description	
(m	n) (feet)	(ft/ft)	(ft/sec)	(cfs)		
22	.6 26	0.0400	0.02		Sheet Flow, gras	SS
					Grass: Short n=	= 0.150 P2= 0.04"
1	.1 265	0.0400	4.06		Shallow Concent	trated Flow, paved
					Paved Kv= 20.3	3 fps
23	.7 291	Total				

### Summary for Subcatchment 26S: RG 3

0.39 cfs @ 12.14 hrs, Volume= Runoff 1,484 cf, Depth> 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

_	Area	(sf)	CN	Description						
,	1,2	269	98	impervious	HSG A					
	9,9	945	39	>75% Gras	s cover, G	ood, HSG A				
,	1,8	830	50	planking H	SG A					
	13,0	044	46	Weighted A	Average					
	11,7	775		90.27% Pe	rvious Area	ì				
	1,2	269		9.73% Imp	ervious Are	a				
	<b>.</b>		01		<b>.</b>	5				
		ngth	Slope	,	Capacity	Description				
_	(min) (1	feet)	(ft/ft)	(ft/sec)	(cfs)					
	6.0					Direct Entry,	direct entry			

Direct Entry, direct entry

### Summary for Subcatchment 27S: GH West

Runoff 0.46 cfs @ 12.13 hrs, Volume= 1,540 cf, Depth> 5.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Α	rea (sf)	CN	Description	1				
*		390	98	impervious	HSG D				
_		3,304	80	>75% Gras	ss cover, G	ood, HSG D			
		3,694	82	Weighted A	Average				
		3,304		89.44% Pe	ervious Area	ì			
		390		10.56% lm	pervious A	ea			
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description			
	6.0					Direct Entry,	direct entry		

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### Summary for Subcatchment 28S: GH East

Runoff = 0.32 cfs @ 12.13 hrs, Volume= 1,026 cf, Depth> 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Α	rea (sf)	CN	Description	1	
*		1,129	98	impervious	HSG D	
*		2,880	50	planking H	SG D	
		4,009	64	Weighted A	Average	
		2,880		71.84% Pe	ervious Area	ea ea
		1,129		28.16% lm	pervious A	Area
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	·
	6.0					Direct Entry, direct entry

## Summary for Subcatchment 29S: CB 1

Runoff = 0.60 cfs @ 12.23 hrs, Volume= 2,700 cf, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Α	rea (sf)	CN	Description	า	
*		3,522	98	impervious	HSG A	
*		1.102		exist roof H		
*		261		cemetery F	ISG A	
		5.039		,		ood, HSG A
_		9,924	66	Weighted A	Average	,
		5,300		0	ervious Area	a de la companya de
		4,624			pervious A	
		.,				
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	•	(cfs)	'
	14.1	25	0.1200	0.03	•	Sheet Flow, cemetery
						Grass: Short n= 0.150 P2= 0.04"
	0.5	97	0.2000	3.13		Shallow Concentrated Flow, grrass
		-				Short Grass Pasture Kv= 7.0 fps
	0.3	75	0.0500	4.54		Shallow Concentrated Flow, pvd
						Paved Kv= 20.3 fps
_	14.9	197	Total			

### Summary for Subcatchment 30S: CB 3

Runoff = 0.62 cfs @ 12.13 hrs, Volume= 2,057 cf, Depth> 4.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Area (sf)	CN	Description							
*	3,592	98	pervious HSG A							
	1,574	39	>75% Grass cover, Good, HSG A							
	5,166	80	Weighted Average							
	1,574		0.47% Pervious Area							
	3,592		69.53% Impervious Area							
- (mi	Γc Length n) (feet)	Slop (ft/f								

Direct Entry, direct

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### Summary for Subcatchment 31S: Rte 1

366 cf, Depth> 1.03" Runoff 0.06 cfs @ 12.25 hrs, Volume=

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Α	rea (sf)	CN	Description	1	
,	*	709	39	Cemetery I	HSG A	
		1,784	30	Woods, Go	ood, HSG A	4
,	k	493	98	impervious	HSG A	
_		1,291	39	>75% Gras	ss cover, G	ood, HSG A
		4,277	42	Weighted A	Average	
		3,784		88.47% Pe	ervious Area	a
		493		11.53% lm	pervious A	rea
	Tc	Length	Slope	<ul><li>Velocity</li></ul>	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	12.7	20	0.1000	0.03		Sheet Flow, cemetery
						Grass: Short n= 0.150 P2= 0.04"
	0.7	96	0.2300	2.40		Shallow Concentrated Flow, woods
						Woodland Kv= 5.0 fps
	0.2	49	0.4500	3.35		Shallow Concentrated Flow, wds
_						Woodland Kv= 5.0 fps
	13.6	165	Total			

### Summary for Subcatchment 32S: GH

0.66 cfs @ 12.13 hrs, Volume= 2,556 cf, Depth> 6.85" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

_	Α	Area (sf)	CN	Description	า		
*		4,476	98	roof HSG	D		
		4,476		100.00% l	mpervious <i>i</i>	Area	
	Tc	Length	Slope	,	Capacity	Description	
_	(min)	(feet)	(ft/ft	(ft/sec)	(cfs)		
	6.0					Direct Entry,	y, direct entry

### Summary for Subcatchment 33S: 12-14 CC

Runoff 1.43 cfs @ 12.13 hrs, Volume= 4,747 cf, Depth> 4.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Area (sf)	CN	Description							
*	1,709	98	npervious HSG D							
	4,934	74	>75% Grass cover, Good, HSG C							
	5,279	80	>75% Grass cover, Good, HSG D							
	11,922	80	Weighted Average							
	10,213		85.67% Pervious Area							
	1,709		14.33% Impervious Area							
	Tc Length (min) (feet)	Slop (ft/f								
	6.0		Direct Entry, Direct							

6.0

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### Summary for Subcatchment 34S: Barn

Runoff = 0.36 cfs @ 12.13 hrs, Volume= 1,385 cf, Depth> 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Α	rea (sf)	CN	Description	)		
*		2,426	98	roof HSG I	)		
		2,426		100.00% lı	mpervious /	Area	
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description	

Direct Entry, minimum

### **Summary for Subcatchment 40S: YW**

Runoff = 0.32 cfs @ 12.13 hrs, Volume= 1,220 cf, Depth> 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

_	Δ	rea (sf)	CN	Description	า	
*		2,136	98	roof, HSG	Α	
Ī		2,136		100.00% lı	mpervious /	Area
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	·
	6.0					Direct Entry, Direct

### Summary for Subcatchment 41S: SR

Runoff = 1.16 cfs @ 12.13 hrs, Volume= 4,467 cf, Depth> 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Α	rea (sf)	CN	Description	)		
*		7,823	98	roof HSG	4		
		7,823		100.00% lı	mpervious /	Area	
	Тс	. 3				Description	
_	(min)	(feet)	(ft/ft	(ft/sec)	(cfs)		
	6.0					Direct Entry,	, Direct

### Summary for Subcatchment 42S: CE

Runoff = 0.88 cfs @ 12.13 hrs, Volume= 3,382 cf, Depth> 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Д	rea (sf)	CN	Description	1		
*		2,744	98	roof HSG (	2		
*		3,179	98	roof HSG I	)		
		5,923 5,923	98	Weighted A	Average mpervious <i>I</i>	\rea	
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description	

Direct Entry, Direct

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#### Summary for Subcatchment 43S: CC

Runoff = 1.33 cfs @ 12.13 hrs, Volume= 5,118 cf, Depth> 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Α	rea (sf)	CN	Description	1	
*		4,684	98	roof HSG (	)	
*		4,280	98	roof HSG [	)	
		8,964	98	Weighted A	Average	
		8,964		100.00% lr	npervious A	Area
	Tc	Length	Slope	,	Capacity	Description
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	
	6.0					Direct Entry, Direct

#### Summary for Subcatchment 44S: HA+CH

Runoff = 1.50 cfs @ 12.13 hrs, Volume= 5,777 cf, Depth> 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Area (sf)	CN	Description	1				
7	1,803	98	roof HSG	4				
,	8,315	98	roof HSG I	)				
	10,118	98	Weighted	Average				
	10,118		100.00% lı		Area			
	Tc Length	Slop	e Velocity	Capacity	Description			
	(min) (feet)	(ft/f	t) (ft/sec)	(cfs)	•			
_	6.0				Direct Entry, Dire	ct	<u> </u>	

#### Summary for Subcatchment 46S: Bay 1

Runoff = 0.18 cfs @ 12.13 hrs, Volume= 681 cf, Depth> 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	P	Area (sf)	CN	Description	า						
*		1,192	98	porous pa	ous pavement						
		1,192		100.00% l	mpervious /	rea					
	Тс	Length	Slope	Velocity	Capacity	Description					
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	6.0					Direct Entry, min					

# Summary for Subcatchment 49S: Bay 2

Runoff = 0.42 cfs @ 12.13 hrs, Volume= 1,631 cf, Depth> 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,192	98	porous pavement
*	1,664	98	pavement HSG C
	2,856	98	Weighted Average
	2,856		100.00% Impervious Area

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

#### Summary for Subcatchment 50S: Bay 3

Runoff 0.62 cfs @ 12.13 hrs, Volume= 2,374 cf, Depth> 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

_	Д	rea (sf)	CN	Description	1	
*		2,545	98	porous pay	ement HS0	SG C
*		1,612	98	pavement I	HSG C	
		4,157	98	Weighted A	Average	
		4,157		100.00% lr	npervious A	Area
	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	·
-	6.0	(ICCI)	(1011	(10300)	(013)	Direct Entry, min
	0.0					Direct Litti y, Tilli

#### Summary for Subcatchment 51S: Bay 4

Runoff 0.60 cfs @ 12.13 hrs, Volume= 2,329 cf, Depth> 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 50-Year Rainfall=7.10"

	Д	rea (sf)	CN	Description	1	
*		1,530	98	porous pav	ement HS0	GC
*		2,549	98	pavement l	HSG C	
		4,079	98	Weighted A	Average	
		4,079		100.00% lr	npervious A	Area
	Tc	Length	Slope	e Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	
_	6.0					Direct Entry, min

#### Summary for Pond 1P: Dep 1

Inflow Area = 79,064 sf, 15.90% Impervious, Inflow Depth > 6.21" for 50-Year event 5.24 cfs @ 12.53 hrs, Volume= Inflow 40,909 cf 3.84 cfs @ 12.62 hrs, Volume=

40,909 cf, Atten= 27%, Lag= 5.3 min Outflow

Primary 3.84 cfs @ 12.62 hrs, Volume= 40,909 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 30.60' @ 12.94 hrs Surf.Area= 6,646 sf Storage= 5,448 cf

2,076

6,188

10,039

Plug-Flow detention time= (not calculated: outflow precedes inflow) Center-of-Mass det. time= 20.4 min (819.9 - 799.5)

3,899

8,477

11,600

30.00

31.00

32.00

Volume	Invert	Avail.Storage	Storage	ge Description	_
#1	28.00'	18,511 cf	Custon	m Stage Data (Prismatic) Listed below (Recalc)	_
Elevation	Surf.A		.Store	Cum.Store	
(feet)	(sc	q-ft) (cubi	c-feet)	(cubic-feet)	
28.00	1	163	0	0	
29.00	2	253	208	208	

2,284

8,472 18,511

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Device	Routing	Invert	Outlet Devices
#1	Primary	30.00'	39.0' long x 10.0' breadth Broad-Crested Rectangular Weir
	-		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Primary	26.50'	2.0" Round Culvert L= 41.0' RCP, sq.cut end projecting, Ke= 0.500
	-		Inlet / Outlet Invert= 26.50' / 25.40' S= 0.0268 '/' Cc= 0.900 n= 0.010, Flow Area= 0.02 sf
#3	Primary	27.70'	<b>4.0"</b> Round Culvert L= 41.0' RCP, sq.cut end projecting, Ke= 0.500
	-		Inlet / Outlet Invert= 27.70' / 25.40' S= 0.0561 '/' Cc= 0.900 n= 0.010, Flow Area= 0.09 sf

Primary OutFlow Max=0.00 cfs @ 12.62 hrs HW=30.51' TW=30.51' (Dynamic Tailwater)

-1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

—2=Culvert (Controls 0.00 cfs) —3=Culvert (Controls 0.00 cfs)

#### Summary for Pond 2P: dep 2

Inflow Area = 34,238 sf, 29.28% Impervious, Inflow Depth > 4.88" for 50-Year event

Inflow = 3.03 cfs @ 12.23 hrs, Volume= 13,913 cf

Outflow = 3.03 cfs @ 12.24 hrs, Volume= 12,151 cf, Atten= 0%, Lag= 0.4 min

Primary = 3.03 cfs @ 12.24 hrs, Volume= 12,151 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 35.55' @ 12.24 hrs Surf.Area= 2,249 sf Storage= 1,869 cf

Plug-Flow detention time= 101.7 min calculated for 12,146 cf (87% of inflow)

Center-of-Mass det. time= 38.2 min ( 865.7 - 827.5 )

Volume	Inv	<u>ert Avail.S</u>	torage	Storage De	escription				
#1	34.0	00' 3,	,058 cf	Custom St	age Data (Pri	ismatic) Listed below (Recalc)			
Elevation (fee		Surf.Area (sq-ft)	Inc.S (cubic-	Store ·feet)	Cum.Store (cubic-feet)				
34.0 35.0 36.0	00	576 1,235 3,069	2	0 906 ,152	906 3,058				
Device	Routing	Inver	t Outlet	Devices					
		35.50	Head (	100.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64					

**Primary OutFlow** Max=3.03 cfs @ 12.24 hrs HW=35.55' TW=30.00' (Dynamic Tailwater) **1=Broad-Crested Rectangular Weir** (Weir Controls 3.03 cfs @ 0.57 fps)

#### Summary for Pond 3P: cent dep

Inflow Area = 188,583 sf, 1.18% Impervious, Inflow Depth > 1.18" for 50-Year event Inflow = 2.36 cfs @ 12.42 hrs, Volume= 18,576 cf

Outflow = 2.30 cfs @ 12.47 hrs, Volume= 18,555 cf, Atten= 2%, Lag= 3.0 min

Primary = 2.30 cfs @ 12.47 hrs, Volume= 18,555 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 32.80' @ 12.47 hrs Surf.Area= 475 sf Storage= 249 cf

Plug-Flow detention time= 1.6 min calculated for 18,555 cf (100% of inflow)

Center-of-Mass det. time= 1.1 min (955.5 - 954.4)

Volume	Invert	Avail.Storage	Storage Description
#1	31.83'	28,303 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

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Elevati	ion et)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
31.		40	0	0				
33.00		566	355	355				
34.00		2,635	1,601	1,955				
35.00		6,530	4,583	6,538				
36.00		37,000	21,765	28,303				
Device	Routing	Invert	Outlet Devices					
#1	Primary	35.30'	45.0' long x 10.0	)' breadth Bro	ad-Crested Rec	tangular Weir		
	•		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60					
	#2 Primary 31.83'		Coef. (English)					
#2						ed to conform to fi		
			Inlet / Outlet Inve	ert= 31.83' / 25	S.00' S = 0.0340	0 '/' Cc= 0.900	n= 0.010, Flow Area= 0.79	∂ sf

Primary OutFlow Max=2.30 cfs @ 12.47 hrs HW=32.80' TW=30.38' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

-2=Culvert (Inlet Controls 2.30 cfs @ 2.95 fps)

# Summary for Pond 4P: cb 1889

Inflow Area = 353,665 sf, 9.40% Impervious, Inflow Depth > 3.23" for 50-Year event

Inflow = 10.42 cfs @ 12.17 hrs, Volume= 95,145 cf

Outflow = 5.44 cfs @ 13.12 hrs, Volume= 95,135 cf, Atten= 48%, Lag= 57.1 min

Primary = 5.44 cfs @ 13.12 hrs, Volume= 95,135 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 30.60' @ 12.94 hrs Surf.Area= 14,011 sf Storage= 9,810 cf

Plug-Flow detention time= 9.5 min calculated for 95,095 cf (100% of inflow)

Center-of-Mass det. time= 9.5 min (857.6 - 848.2)

Volume	In	vert A	/ail.Storage	Storage	ge Description
#1	25	.00'	42,875 cf	Custon	m Stage Data (Prismatic) Listed below (Recalc)
Elevation (fee		Surf.Area (sq-ft		c.Store pic-feet)	Cum.Store (cubic-feet)
25.0	00	30		0	0
28.	00	157	•	281	281
29.0	00	623	1	390	671
30.0	00	5,783	1	3,203	3,874
32.	00	33,218	1	39,001	42,875
Device	Routing	J	nvert Ou	tlet Device	es
#1	Primary	, 2	4.90' <b>12.</b> 0	0" Round	d Culvert L= 55.0' RCP, sq.cut end projecting, Ke= 0.500
	-		Inle	t / Outlet I	Invert= 24.90' / 23.60' S= 0.0236 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

**Primary OutFlow** Max=5.44 cfs @ 13.12 hrs HW=30.58' TW=28.17' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 5.44 cfs @ 6.93 fps)

#### **Summary for Pond 20P: Cistern**

Inflow Area = 134,437 sf, 13.16% Impervious, Inflow Depth > 1.44" for 50-Year event Inflow = 1.62 cfs @ 12.62 hrs, Volume= 16,101 cf

Outflow = 1.62 cfs @ 12.62 hrs, Volume= 15,480 cf, Atten= 0%, Lag= 0.0 min

Primary = 1.62 cfs @ 12.62 hrs, Volume= 15,480 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 39.95' @ 12.62 hrs Surf.Area= 79 sf Storage= 625 cf

Plug-Flow detention time= 34.0 min calculated for 15,480 cf (96% of inflow)

Center-of-Mass det. time= 15.2 min (951.5 - 936.2)

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Volume	Invert	Avail.Storage Storage Description	
#1	32.00'	628 cf 10.00'D x 8.00'H Vert	cal Cone/Cylinder
Device	Routing	Invert Outlet Devices	
#1	Primary	39.90' 1.0" x 6.5" Horiz. Orifice/G	rate X 11.00 columns X 3 rows C= 0.600
		Limited to weir flow at low h	
#2	Primary		Broad-Crested Rectangular Weir
		Head (feet) 0.20 0.40 0.6	0 0.80 1.00 1.20 1.40 1.60
		Coef. (English) 2.68 2.70	2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.62 cfs @ 12.62 hrs HW=39.95' TW=35.15' (Dynamic Tailwater)

-1=Orifice/Grate (Weir Controls 1.60 cfs @ 0.75 fps)

-2=Broad-Crested Rectangular Weir (Weir Controls 0.02 cfs @ 0.12 fps)

#### Summary for Pond 21P: cb 6087

353,665 sf, 9.40% Impervious, Inflow Depth > 3.23" for 50-Year event Inflow Area =

Inflow = 5.44 cfs @ 13.12 hrs, Volume= 95,135 cf

5.44 cfs @ 13.12 hrs, Volume= Outflow = 95,135 cf, Atten= 0%, Lag= 0.0 min

5.44 cfs @ 13.12 hrs. Volume= 95.135 cf Primary

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 28.31' @ 12.29 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	23.60'	<b>12.0"</b> Round Culvert L= 52.0' RCP, sq.cut end projecting, Ke= 0.500
			Inlet / Outlet Invert= 23.60' / 23.00' S= 0.0115 '/' Cc= 0.900 n= 0.013 Flow Area= 0.79 sf

Primary OutFlow Max=5.44 cfs @ 13.12 hrs HW=28.17' TW=25.84' (Dynamic Tailwater)

1=Culvert (Outlet Controls 5.44 cfs @ 6.93 fps)

#### Summary for Pond 22P: HW 1

220,170 sf, 12.92% Impervious, Inflow Depth > 1.72" for 50-Year event Inflow Area =

3.86 cfs @ 12.45 hrs, Volume= 1.99 cfs @ 13.05 hrs, Volume= 1.99 cfs @ 13.05 hrs, Volume= Inflow = 31,573 cf

Outflow = 31,121 cf, Atten= 48%, Lag= 35.8 min

Primary = 31,121 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 35.18' @ 13.05 hrs Surf.Area= 4,142 sf Storage= 4,743 cf

Flood Elev= 34.50' Surf.Area= 2,516 sf Storage= 2,477 cf

Plug-Flow detention time= 25.1 min calculated for 31,121 cf (99% of inflow)

Center-of-Mass det. time= 17.9 min (947.6 - 929.7)

Volume	ln۱	ert Avail.St	orage Storage	Description	
#1	31.	50' 8,	939 cf Custom	Stage Data (Prismatic) Listed below (Recalc)	
Elevation (fee		Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
31.	50	131	0	0	
33.0	00	607	554	554	
34.0	00	1,321	964	1,518	
36.0	00	6,100	7,421	8,939	
Device	Routing	Invert	Outlet Devices		
#1	Primary	31.58'		<b>Culvert</b> L= 34.0' RCP, rounded edge headwall, Ke= 0.100 vert= 31.58' / 25.32' S= 0.1841 '/' Cc= 0.900 n= 0.010,	
#2	Device 1	32.50'		<b>ce/Grate</b> C= 0.600	

Primary OutFlow Max=1.99 cfs @ 13.05 hrs HW=35.18' TW=25.69' (Dynamic Tailwater)

<sup>-1=</sup>Culvert (Passes 1.99 cfs of 9.08 cfs potential flow)

**<sup>2=</sup>Orifice/Grate** (Orifice Controls 1.99 cfs @ 7.44 fps)

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# Summary for Pond 23P: Strmtr 2

Inflow Area = 12,687 sf, 40.99% Impervious, Inflow Depth > 2.73" for 50-Year event

Inflow = 0.39 cfs @ 12.54 hrs, Volume= 2,886 cf

Outflow = 0.39 cfs @ 12.54 hrs, Volume= 2,886 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.39 cfs @ 12.54 hrs, Volume= 2,886 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.43' @ 12.54 hrs

Flood Elev= 31.00'

DeviceRoutingInvertOutlet Devices#1Primary38.16'12.0" Round CulvertL= 222.0' RCP, groove end projecting, Ke= 0.200<br/>Inlet / Outlet Invert= 38.16' / 24.80'S= 0.0602 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.39 cfs @ 12.54 hrs HW=38.43' TW=24.56' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.39 cfs @ 2.23 fps)

#### Summary for Pond 24P: RG #1

Inflow Area = 220,170 sf, 12.92% Impervious, Inflow Depth > 1.72" for 50-Year event

Inflow = 3.85 cfs @ 12.45 hrs, Volume= 31,599 cf

Outflow = 3.86 cfs @ 12.45 hrs, Volume= 31,573 cf, Atten= 0%, Lag= 0.0 min

Primary = 3.86 cfs @ 12.45 hrs, Volume= 31,573 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 35.18' @ 13.04 hrs Surf.Area= 420 sf Storage= 64 cf

Flood Elev= 36.50' Surf.Area= 10 sf Storage= 336 cf

Plug-Flow detention time= 0.8 min calculated for 31,573 cf (100% of inflow)

Center-of-Mass det. time= 0.3 min ( 929.7 - 929.3 )

Volume	Inv	ert Avail.St	orage Stora	ge Description
#1	35.	00'	336 cf Custo	om Stage Data (Prismatic) Listed below (Recalc)
Elevatio		Surf.Area	Inc.Store	Cum.Store
(fee	et)	(sq-ft)	(cubic-feet)	(cubic-feet)
35.0	00	131	0	0
35.0	08	394	21	21
35.5	50	500	188	209
36.0	00	10	128	336
Device	Routing	Invert	Outlet Device	ces
#1	Primary	35.08'	65.0' long x	x 1.0' breadth Broad-Crested Rectangular Weir
	,		Head (feet)	0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00
			Coef. (Engli	ish) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=3.85 cfs @ 12.45 hrs HW=35.16' TW=34.52' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 3.85 cfs @ 0.75 fps)

#### Summary for Pond 25P: Strmtr 1

Inflow Area = 69,766 sf, 46.99% Impervious, Inflow Depth > 3.62" for 50-Year event

Inflow = 2.81 cfs @ 12.39 hrs, Volume= 21,020 cf

Outflow = 2.81 cfs @ 12.39 hrs, Volume= 21,020 cf, Atten= 0%, Lag= 0.0 min

Primary = 2.81 cfs @ 12.39 hrs, Volume= 21,020 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 27.64' @ 12.39 hrs

Flood Elev= 31.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	26.78'	<b>12.0" Round Culvert</b> L= 51.0' RCP, groove end projecting, Ke= 0.200
			Inlet / Outlet Invert= 26.78' / 24.81' S= 0.0386 '/' Cc= 0.900 n= 0.010. Flow Area= 0.79 sf

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**Primary OutFlow** Max=2.81 cfs @ 12.39 hrs HW=27.64' TW=25.85' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 2.81 cfs @ 3.94 fps)

#### Summary for Pond 26P: CB 2

Inflow Area = 22,968 sf, 25.66% Impervious, Inflow Depth > 2.17" for 50-Year event

Inflow = 0.87 cfs @ 12.17 hrs, Volume= 4,162 cf

Outflow = 0.87 cfs @ 12.17 hrs, Volume= 4,162 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.87 cfs @ 12.17 hrs, Volume= 4,162 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 36.67' @ 12.17 hrs

Flood Elev= 40.05'

Device Routing Invert Outlet Devices

#1 Primary 36.22' **10.0" Round Culvert** L= 150.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 36.22' / 27.72' S= 0.0567 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.87 cfs @ 12.17 hrs HW=36.67' TW=28.44' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.87 cfs @ 2.87 fps)

#### Summary for Pond 27P: DI 1

Inflow Area = 31,138 sf, 34.55% Impervious, Inflow Depth > 3.18" for 50-Year event

Inflow = 1.94 cfs @ 12.14 hrs, Volume= 8,257 cf

Outflow = 1.94 cfs @ 12.14 hrs, Volume= 8,257 cf, Atten= 0%, Lag= 0.0 min

Primary = 1.94 cfs @ 12.14 hrs, Volume= 8,257 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 28.48' @ 12.14 hrs

Flood Elev= 33.85'

Device Routing Invert Outlet Devices

#1 Primary 27.72' **10.0" Round Culvert** L= 70.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 27.72' / 26.36' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=1.94 cfs @ 12.14 hrs HW=28.48' TW=27.09' (Dynamic Tailwater)

1=Culvert (Inlet Controls 1.94 cfs @ 3.71 fps)

#### Summary for Pond 28P: DI 2

Inflow Area = 4,009 sf, 28.16% Impervious, Inflow Depth > 3.07" for 50-Year event

Inflow = 0.32 cfs @ 12.13 hrs, Volume= 1,026 cf

Outflow = 0.32 cfs @ 12.13 hrs, Volume= 1,026 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.32 cfs @ 12.13 hrs, Volume= 1,026 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 34.10' @ 12.13 hrs

Flood Elev= 35.96'

Device Routing Invert Outlet Devices

#1 Primary 33.84' **10.0" Round Culvert** L= 66.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 33.84' / 33.00' S= 0.0127 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

illiet / Odliet illvert = 33.04 / 33.00 G = 0.0121 / GG = 0.300 H = 0.010, 1 low Alea = 0.303

Primary OutFlow Max=0.31 cfs @ 12.13 hrs HW=34.10' TW=33.25' (Dynamic Tailwater)

**1=Culvert** (Inlet Controls 0.31 cfs @ 2.17 fps)

#### Summary for Pond 29P: CB 1

Inflow Area = 9,924 sf, 46.59% Impervious, Inflow Depth > 3.27" for 50-Year event

Inflow = 0.60 cfs @ 12.23 hrs, Volume= 2,700 cf

Outflow = 0.60 cfs @ 12.23 hrs, Volume= 2,700 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.60 cfs @ 12.23 hrs, Volume= 2,700 cf

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Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 54.12' @ 12.23 hrs

Flood Elev= 57.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	53.75'	<b>10.0" Round Culvert</b> L= 46.0' RCP, groove end projecting, Ke= 0.200
	-		Inlet / Outlet Invert= 53.75' / 42.60' S= 0.2424 '/' Cc= 0.900 n= 0.010. Flow Area= 0.55 sf

**Primary OutFlow** Max=0.60 cfs @ 12.23 hrs HW=54.12' TW=39.83' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.60 cfs @ 2.58 fps)

#### Summary for Pond 30P: CB 3

Inflow Area = 5,166 sf, 69.53% Impervious, Inflow Depth > 4.78" for 50-Year event

Inflow = 0.62 cfs @ 12.13 hrs, Volume= 2,057 cf

Outflow = 0.03 cfs @ 18.41 hrs, Volume= 268 cf, Atten= 95%, Lag= 376.8 min

Primary = 0.03 cfs @ 18.41 hrs, Volume= 268 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs /  $3\,$ 

Peak Elev= 43.20' @ 18.41 hrs Surf.Area= 802 sf Storage= 1,789 cf

Flood Elev= 43.50' Surf.Area= 802 sf Storage= 1,789 cf

Plug-Flow detention time= 690.2 min calculated for 268 cf (13% of inflow)

Center-of-Mass det. time= 438.8 min (1,262.7 - 823.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	36.00'	701 cf	20.83'W x 38.50'L x 3.54'H Field A
			2,841 cf Overall - 1,088 cf Embedded = 1,753 cf x 40.0% Voids
#2A	36.50'	1,088 cf	Cultec R-330XLHD x 20 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

1,789 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	39.04'	<b>8.0" Round Culvert</b> L= 268.0' RCP, groove end projecting, Ke= 0.200
	-		Inlet / Outlet Invert= 39.04' / 26.50' S= 0.0468'/ Cc= 0.900 n= 0.010, Flow Area= 0.35 sf
#2	Device 1	43.04'	2.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.03 cfs @ 18.41 hrs HW=43.20' TW=26.98' (Dynamic Tailwater)

1=Culvert (Passes 0.03 cfs of 3.59 cfs potential flow)

#### Summary for Pond 31P: RG #3

Inflow Area = 22,968 sf, 25.66% Impervious, Inflow Depth > 2.19" for 50-Year event

Inflow = 0.87 cfs @ 12.17 hrs, Volume= 4,184 cf

Outflow = 0.87 cfs @ 12.17 hrs, Volume= 4,162 cf, Atten= 0%, Lag= 0.2 min

Primary = 0.87 cfs @ 12.17 hrs, Volume= 4,162 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.83' @ 12.17 hrs Surf.Area= 400 sf Storage= 33 cf

Flood Elev= 43.50' Surf.Area= 500 sf Storage= 244 cf

Plug-Flow detention time= 4.9 min calculated for 4,160 cf (99% of inflow)

Center-of-Mass det. time= 2.0 min (894.6 - 892.5)

Volume	Invert	Avail.Storage	Storage Description
#1	39.72'	244 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

**<sup>2=</sup>Orifice/Grate** (Orifice Controls 0.03 cfs @ 1.38 fps)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
39.72	131	0	0
39.80	394	21	21
40.30	500	224	244

Device Routing Invert Outlet Devices

#1 Primary 39.80' 65.0' long x 1.0' breadth Broad-Crested Rectangular Weir

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.87 cfs @ 12.17 hrs HW=39.83' TW=36.67' (Dynamic Tailwater) 1=Broad-Crested Rectangular Weir (Weir Controls 0.87 cfs @ 0.46 fps)

#### Summary for Pond 32P: PrkCis 1

Inflow Area = 1,192 sf,100.00% Impervious, Inflow Depth > 6.85" for 50-Year event

Inflow = 0.18 cfs @ 12.13 hrs, Volume= 681 cf

Outflow = 0.00 cfs @ 17.43 hrs, Volume= 117 cf, Atten= 97%, Lag= 318.0 min

Primary = 0.00 cfs @ 17.43 hrs, Volume= 117 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.25' @ 17.43 hrs Surf.Area= 863 sf Storage= 570 cf

Flood Elev= 42.00' Surf.Area= 863 sf Storage= 1,733 cf

Plug-Flow detention time= 803.9 min calculated for 117 cf (17% of inflow)

Center-of-Mass det. time= 425.7 min (1,169.3 - 743.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	38.20'	689 cf	19.17'W x 45.00'L x 3.21'H Field A
			2,767 cf Overall - 1,044 cf Embedded = 1,723 cf x 40.0% Voids
#2A	38.70'	1,044 cf	Cultec R-280HD x 24 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	39.20'	<b>4.0" Round Culvert</b> L= 100.0' RCP, mitered to conform to fill, Ke= 0.700
	-		Inlet / Outlet Invert= 39.20' / 30.00' S= 0.0920 '/' Cc= 0.900 n= 0.010. Flow Area= 0.09 sf

Primary OutFlow Max=0.00 cfs @ 17.43 hrs HW=39.25' TW=22.00' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.00 cfs @ 0.64 fps)

# Summary for Pond 33P: PrkCst 2

Inflow Area = 2,856 sf,100.00% Impervious, Inflow Depth > 6.85" for 50-Year event

Inflow = 0.42 cfs @ 12.13 hrs, Volume= 1,631 cf

Outflow = 0.08 cfs @ 12.49 hrs, Volume= 1,136 cf, Atten= 82%, Lag= 21.5 min

Primary = 0.08 cfs @ 12.49 hrs, Volume = 1,136 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.14' @ 12.49 hrs Surf.Area= 728 sf Storage= 880 cf

Flood Elev= 41.00' Surf.Area= 728 sf Storage= 1,459 cf

Plug-Flow detention time= 286.4 min calculated for 1,136 cf (70% of inflow)

Center-of-Mass det. time= 165.7 min (909.2 - 743.5)

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Volume	Invert	Avail.Storage	Storage Description
#1A	36.40'	585 cf	19.17'W x 38.00'L x 3.21'H Field A
			2,337 cf Overall - 874 cf Embedded = 1,462 cf x 40.0% Voids
#2A	36.90'	874 cf	Cultec R-280HD x 20 Inside #1
			Effective Size= $46.9$ "W x $26.0$ "H => $6.07$ sf x $7.00$ 'L = $42.5$ cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		4 450 -4	T-4-1 A: 1-1-1- O4

1,459 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	<b>2.0" Round Culvert</b> L= 50.0' RCP, mitered to conform to fill, Ke= 0.700
	_		Inlet / Outlet Invert= 37.40' / 34.66' S= 0.0548 '/' Cc= 0.900 n= 0.010, Flow Area= 0.02 sf

**Primary OutFlow** Max=0.08 cfs @ 12.49 hrs HW=38.14' TW=24.48' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.08 cfs @ 3.44 fps)

#### Summary for Pond 34P: CC Cisterns

Inflow Area = 8,964 sf,100.00% Impervious, Inflow Depth > 6.85" for 50-Year event

Inflow = 1.33 cfs @ 12.13 hrs, Volume= 5,118 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 545 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 545 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 44.86' @ 24.00 hrs Surf.Area= 1,362 sf Storage= 4,573 cf

Plug-Flow detention time= 723.9 min calculated for 545 cf (11% of inflow)

Center-of-Mass det. time= 257.9 min (1,001.4 - 743.5)

Volume	ln۱	vert Av	ail.Storage	Storage	Description	
#1	41.	50'	5,448 cf	Custon	Stage Data (Pr	ismatic) Listed below (Recalc) x 6
Elevation	on	Surf.Area	Inc	:Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
41.	50	227		0	0	
45.	50	227		908	908	
Device	Routing	Ir	nvert Outle	et Device:	2	
#1	Primary				-	rows with 1.0" cc spacing C= 0.600

**Primary OutFlow** Max=0.01 cfs @ 24.00 hrs HW=44.86' TW=21.90' (Dynamic Tailwater) **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 8.53 fps)

#### Summary for Pond 35P: DMH 2

Inflow Area = 4,009 sf, 28.16% Impervious, Inflow Depth > 3.07" for 50-Year event

Inflow = 0.32 cfs @ 12.13 hrs, Volume= 1,026 cf

Outflow = 0.32 cfs @ 12.13 hrs, Volume= 1,026 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.32 cfs @ 12.13 hrs, Volume= 1,026 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 33.25' @ 12.13 hrs

Flood Elev= 35.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.00'	<b>12.0"</b> Round Culvert L= 26.0' RCP, groove end projecting, Ke= 0.200
			Inlet / Outlet Invert = 33.00' / 24.90' S = 0.3115 '/' Cc = 0.900 n = 0.010 Flow Area = 0.79 sf

**Primary OutFlow** Max=0.31 cfs @ 12.13 hrs HW=33.25' TW=27.09' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.31 cfs @ 2.11 fps)

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#### Summary for Pond 36P: DMH 3

Inflow Area = 35,147 sf, 33.82% Impervious, Inflow Depth > 3.17" for 50-Year event

Inflow = 2.25 cfs @ 12.14 hrs, Volume= 9,283 cf

Outflow = 2.25 cfs @ 12.14 hrs, Volume= 9,283 cf, Atten= 0%, Lag= 0.0 min

Primary = 2.25 cfs @ 12.14 hrs, Volume= 9,283 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 27.09' @ 12.14 hrs

Flood Elev= 34.00'

Device Routing Invert Outlet Devices

#1 Primary 26.36' **12.0" Round Culvert** L= 73.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 26.36' / 24.90' S= 0.0200 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=2.25 cfs @ 12.14 hrs HW=27.09' TW=26.08' (Dynamic Tailwater)

1=Culvert (Inlet Controls 2.25 cfs @ 3.65 fps)

#### Summary for Pond 37P: DMH 4

Inflow Area = 259,207 sf, 15.59% Impervious, Inflow Depth > 1.90" for 50-Year event

Inflow = 3.30 cfs @ 12.15 hrs, Volume= 40,990 cf

Outflow = 3.30 cfs @ 12.15 hrs, Volume= 40,990 cf, Atten= 0%, Lag= 0.0 min

Primary = 3.30 cfs @ 12.15 hrs, Volume= 40,990 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 26.23' @ 12.50 hrs

Flood Elev= 34.50'

Device Routing Invert Outlet Devices

#1 Primary 24.90' **12.0" Round Culvert** L= 37.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 24.90' / 24.00' S= 0.0243 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=3.29 cfs @ 12.15 hrs HW=26.09' TW=25.56' (Dynamic Tailwater)

1=Culvert (Outlet Controls 3.29 cfs @ 4.44 fps)

#### Summary for Pond 38P: DMH 5

Inflow Area = 328,973 sf, 22.24% Impervious, Inflow Depth > 2.26" for 50-Year event

Inflow = 5.32 cfs @ 12.35 hrs, Volume= 62,010 cf

Outflow = 5.32 cfs @ 12.35 hrs, Volume= 62,010 cf, Atten= 0%, Lag= 0.0 min

Primary = 5.32 cfs @ 12.35 hrs, Volume= 62,010 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 25.95' @ 12.50 hrs

Flood Elev= 33.00'

Device Routing Invert Outlet Devices

#1 Primary 24.00' **12.0" Round Culvert** L= 59.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 24.00' / 23.00' S= 0.0169 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

Primary OutFlow Max=5.33 cfs @ 12.35 hrs HW=25.77' TW=24.10' (Dynamic Tailwater)

1=Culvert (Inlet Controls 5.33 cfs @ 6.78 fps)

# Summary for Pond 39P: PrkCis 3

Inflow Area = 4,157 sf,100.00% Impervious, Inflow Depth > 6.85" for 50-Year event

Inflow = 0.62 cfs @ 12.13 hrs. Volume= 2.374 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 15 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 15 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 37.45' @ 24.00 hrs Surf.Area= 1,226 sf Storage= 2,359 cf

Flood Elev= 39.00' Surf.Area= 1,226 sf Storage= 2,485 cf

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Plug-Flow detention time= 1,348.7 min calculated for 14 cf (1% of inflow)

Center-of-Mass det. time= 676.7 min (1,420.2 - 743.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	967 cf	23.58'W x 52.00'L x 3.21'H Field A
			3,934 cf Overall - 1,518 cf Embedded = 2,417 cf x 40.0% Voids
#2A	35.00'	1,518 cf	Cultec R-280HD x 35 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 5 rows

2,485 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	<b>6.0" Round Culvert</b> L= 50.0' RCP, mitered to conform to fill, Ke= 0.700
	-		Inlet / Outlet Invert= 37.40' / 32.46' S= 0.0988 '/' Cc= 0.900 n= 0.010, Flow Area= 0.20 sf
#2	Primary	37.80'	80.0' long x 10.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=37.45' TW=21.90' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.01 cfs @ 0.69 fps)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

# Summary for Pond 40P: PrkCis 4

Inflow Area = 4,079 sf,100.00% Impervious, Inflow Depth > 6.85" for 50-Year event

Inflow = 0.60 cfs @ 12.13 hrs, Volume= 2,329 cf Outflow = 0.03 cfs @ 14.15 hrs, Volume= 668 cf, Atten= 95%, Lag= 121.0 min

Primary = 0.03 cfs @ 14.15 hrs, Volume= 668 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 32.87' @ 14.15 hrs Surf.Area= 1,094 sf Storage= 1,705 cf

Flood Elev= 40.00' Surf.Area= 1,094 sf Storage= 2,453 cf

Plug-Flow detention time= 577.2 min calculated for 668 cf (29% of inflow)

Center-of-Mass det. time= 306.7 min (1,050.2 - 743.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	30.67'	947 cf	20.83'W x 52.50'L x 3.54'H Field A
			3,874 cf Overall - 1,505 cf Embedded = 2,369 cf x 40.0% Voids
#2A	31.17'	1,505 cf	Cultec R-330XLHD x 28 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

2,453 cf Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	32.75'	<b>4.0" Round Culvert</b> L= 60.0' RCP, mitered to conform to fill, Ke= 0.700
	•		Inlet / Outlet Invert= 32.75' / 32.26' S= 0.0082 '/' Cc= 0.900 n= 0.010. Flow Area= 0.09 sf

**Primary OutFlow** Max=0.03 cfs @ 14.15 hrs HW=32.87' TW=22.52' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.03 cfs @ 1.06 fps)

#### Summary for Pond 41P: CB 5

Inflow Area = 3,890 sf, 1.80% Impervious, Inflow Depth > 1.81" for 50-Year event

Inflow = 0.17 cfs @ 12.14 hrs, Volume= 586 cf

Outflow = 0.17 cfs @ 12.14 hrs, Volume= 586 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.17 cfs @ 12.14 hrs, Volume= 586 cf

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Peak Elev= 29.13' @ 12.14 hrs Flood Elev= 31.00'

DeviceRoutingInvertOutlet Devices#1Primary28.94'10.0" Round CulvertL= 38.0' RCP, groove end projecting, Ke= 0.200

Inlet / Outlet Invert= 28.94' / 25.90' S= 0.0800 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

Primary OutFlow Max=0.17 cfs @ 12.14 hrs HW=29.13' TW=26.07' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.17 cfs @ 1.84 fps)

#### Summary for Pond 43P: CE Cisterns

Inflow Area = 5,923 sf,100.00% Impervious, Inflow Depth > 6.85" for 50-Year event

Inflow = 0.88 cfs @ 12.13 hrs, Volume= 3,382 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 376 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 376 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 46.31' @ 24.00 hrs Surf.Area= 908 sf Storage= 3,006 cf

Plug-Flow detention time= 701.8 min calculated for 376 cf (11% of inflow)

Center-of-Mass det. time= 242.7 min (986.2 - 743.5)

Volume	ln۱	ert Av	ail.Storage	Storage	Description	
#1	43.	00'	3,632 cf	Custom	Stage Data (P	rismatic) Listed below (Recalc) x 4
Elevation (fee		Surf.Area (sq-ft)		c.Store ic-feet)	Cum.Store	
43.0	,	227	(db)	0	(Cabic-icet)	
47.0		227		908	908	
Device	Routing	lr	nvert Outl	et Devices	<b>i</b>	
#1	Primary	43	3.00' <b>0.2"</b>	Vert. Orif	ice/Grate X4	rows with 1.0" cc spacing C= 0.600

**Primary OutFlow** Max=0.01 cfs @ 24.00 hrs HW=46.31' TW=21.90' (Dynamic Tailwater) **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 8.58 fps)

# Summary for Pond 44P: SR Cisterns

Inflow Area = 7,823 sf,100.00% Impervious, Inflow Depth > 6.85" for 50-Year event

Inflow = 1.16 cfs @ 12.13 hrs, Volume= 4,467 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 476 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 476 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 49.52' @ 24.00 hrs Surf.Area= 1,135 sf Storage= 3,991 cf

Plug-Flow detention time= 715.2 min calculated for 476 cf (11% of inflow)

Center-of-Mass det. time= 249.3 min (992.8 - 743.5)

Volume	Inv	ert Ava	ail.Storage	Storage D	escription	
#1	46.	00'	5,675 cf	Custom S	tage Data (Pri	smatic) Listed below (Recalc) x 5
Elevation	on	Surf.Area	Inc	:Store	Cum.Store	
(fee	et)	(sq-ft)	(cub	ic-feet)	(cubic-feet)	
46.0	00	227		0	0	
51.0	00	227		1,135	1,135	
Device	Routing	Ir	vert Outl	et Devices		
#1	Primary	46	5.00' <b>0.2"</b>	Vert. Orific	e/Grate X5 r	ows with 1.0" cc spacing C= 0.600

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=49.52' TW=21.90' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.01 cfs @ 8.80 fps)

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# Summary for Pond 45P: HACisterns

Inflow Area = 10,118 sf,100.00% Impervious, Inflow Depth > 6.85" for 50-Year event

Inflow = 1.50 cfs @ 12.13 hrs, Volume= 5,777 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 587 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 587 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 47.81' @ 24.00 hrs Surf.Area= 1,362 sf Storage= 5,190 cf

Plug-Flow detention time= 727.8 min calculated for 587 cf (10% of inflow)

Center-of-Mass det. time= 254.0 min (997.5 - 743.5)

Volume	ln۱	ert Ava	ail.Storage	Storage	Description	
#1	44.	00'	6,810 cf	Custom	Stage Data (Pr	ismatic) Listed below (Recalc) x 6
Elevation (fee		Surf.Area (sq-ft)		c.Store ic-feet)	Cum.Store (cubic-feet)	
44.( 49.(	00	227 227	(000	0	0 1.135	
Device	Routina		vert Outl	et Devices	,	
#1	Primary				<del>-</del>	rows with 1.0" cc spacing C= 0.600

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=47.81' TW=21.90' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.01 cfs @ 9.13 fps)

#### Summary for Pond 46P: CB 4

Inflow Area = 400,830 sf, 31.77% Impervious, Inflow Depth > 2.22" for 50-Year event

Inflow = 6.50 cfs @ 12.15 hrs, Volume= 74,063 cf

Outflow = 5.31 cfs @ 12.62 hrs, Volume= 73,857 cf, Atten= 18%, Lag= 28.2 min

Primary = 5.31 cfs @ 12.62 hrs, Volume = 73,857 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 24.60' @ 12.62 hrs Surf.Area= 1,297 sf Storage= 3,222 cf

Plug-Flow detention time= 6.5 min calculated for 73,857 cf (100% of inflow)

Center-of-Mass det. time= 5.0 min ( 902.6 - 897.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	27.80'	23,576 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2A	21.50'	259 cf	21.79'W x 59.50'L x 6.00'H Field A
			7,780 cf Overall - 7,131 cf Embedded = 648 cf x 40.0% Voids
#3A	22.00'	5,694 cf	StormTrap SingleTrap 5-0 x 3 Inside #2
			Inside= 101.7"W x 60.0"H => 38.33 sf x 15.40'L = 590.2 cf
			Outside= 101.7"W x 66.0"H => 46.64 sf x 15.40'L = 718.0 cf
			8.48' x 46.19' Core + 6.66' Border = 21.79' x 59.50' System

29,529 cf Total Available Storage

#### Storage Group A created with Chamber Wizard

Elevation	Surf.Area	Inc.Store	Cum.Store
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)
27.80	4	0	0
28.00	1,704	171	171
30.00	4,071	5,775	5,946
32.00	13,559	17,630	23,576

Device	Routing	Invert	Outlet Devices
#1	Primary	21.50'	<b>12.0" Round Culvert</b> L= 141.0' RCP, sq.cut end projecting, Ke= 0.500
			Inlet / Outlet Invert= 21.50' / 19.40' S= 0.0149 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

**Primary OutFlow** Max=5.31 cfs @ 12.62 hrs HW=24.60' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 5.31 cfs @ 6.76 fps)

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#### Summary for Pond 47P: HW

Inflow Area = 385,242 sf, 8.99% Impervious, Inflow Depth > 3.29" for 50-Year event

7.64 cfs @ 12.13 hrs, Volume= Inflow 105,697 cf

Outflow 6.46 cfs @ 12.21 hrs, Volume= 105,685 cf, Atten= 15%, Lag= 4.4 min =

6.46 cfs @ 12.21 hrs, Volume= Primary 105.685 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 26.62' @ 12.21 hrs Surf.Area= 1,073 sf Storage= 873 cf

Plug-Flow detention time= 0.8 min calculated for 105,685 cf (100% of inflow)

Center-of-Mass det. time= 0.7 min (857.0 - 856.4)

Volume			Storage Description									
#1	23	3.00'	75,6	12 cf	Custom Stage Data (Prismatic) Listed below (Recalc)						_	
Elevati	on	Surf.Ar	ea	Inc.	Store	Cum.Store						
(fe	et)	(sq	-ft)	(cubic	:-feet)	(cubic-feet)						
23.0	00		10		0	0						
26.	00	2	90		450	450						
28.	00	2,812		;	3,102	3,552						
32.	00	33,2	18	7:	2,060	75,612						
Device	Routing	9	Invert	Outle	t Devices							_
#1	Primary	/	23.00'	12.0"	Round C	ulvert L= 141	.0' RCP,	sq.cut en	d projecting,	Ke= 0.500		
	•			Inlet /	Outlet Inv	ert= 23.00' / 19	9.40' S=	0.0255 '/'	Cc = 0.900	n = 0.013.	Flow Area= 0.79 sf	f

Primary OutFlow Max=6.46 cfs @ 12.21 hrs HW=26.62' TW=0.00' (Dynamic Tailwater) -1=Culvert (Barrel Controls 6.46 cfs @ 8.22 fps)

# Summary for Pond 48P: YW Cistern

2,136 sf,100.00% Impervious, Inflow Depth > 6.85" for 50-Year event Inflow Area =

0.32 cfs @ 12.13 hrs, Volume= Inflow = 1,220 cf

0.01 cfs @ 16.68 hrs, Volume= 0.01 cfs @ 16.68 hrs, Volume= Outflow 500 cf, Atten= 97%, Lag= 273.3 min =

Primary 500 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 55.01' @ 16.68 hrs Surf.Area= 392 sf Storage= 789 cf

Plug-Flow detention time= 410.4 min calculated for 500 cf (41% of inflow)

Center-of-Mass det. time= 209.4 min (952.9 - 743.5)

Volume	ln۱	ert Ava	il.Storage	Storage	Description	
#1	53.	00'	1,176 cf	Custom	Stage Data (Pri	smatic) Listed below (Recalc)
Elevation	on	Surf.Area	Ind	c.Store	Cum.Store	
(fe	et)	(sq-ft)	(cub	ic-feet)	(cubic-feet)	
53.0	00	392		0	0	
56.0	00	392		1,176	1,176	
Device	Routing	In	vert Outl	et Devices	3	
#1	Primary	53	.00' <b>0.5"</b>	Vert. Orif	ice/Grate C= 0	0.600

Primary OutFlow Max=0.01 cfs @ 16.68 hrs HW=55.01' TW=22.03' (Dynamic Tailwater) 1=Orifice/Grate (Orifice Controls 0.01 cfs @ 6.80 fps)

# Summary for Link 1L: Total Exist

405,107 sf, 8.55% Impervious, Inflow Depth > 3.15" for 50-Year event Inflow Area =

6.46 cfs @ 12.21 hrs, Volume= 106,235 cf Inflow

Primary 6.46 cfs @ 12.21 hrs, Volume= 106,235 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow. Time Span= 0.00-24.00 hrs. dt= 0.01 hrs

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# **Summary for Link 20L: Total POST**

405,107 sf, 31.55% Impervious, Inflow Depth > 2.20" for 50-Year event 5.33 cfs @ 12.61 hrs, Volume= 74,224 cf 5.33 cfs @ 12.61 hrs, Volume= 74,224 cf, Atten= 0%, Lag= 0.0 m Inflow Area =

Inflow =

Primary 74,224 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

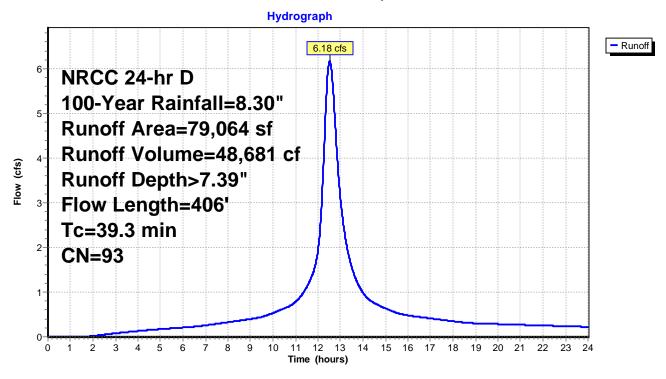
# Summary for Subcatchment 1S: dep 1 DA

Runoff = 6.18 cfs @ 12.53 hrs, Volume= 48,681 cf, Depth> 7.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	P	Area (sf)	CN	Description	)					
*		8,110	98	roof & pvm	of & pvmnt					
		S D								
50,133 94 Fallow, bare soil, HSG D 16,361 84 50-75% Grass cover, Fair, HSG D						Fair, HSG D				
*		4,460	98	pre-exist w	arehouse, l	HSG D				
		79,064	93	Weighted A	Average					
		66,494		84.10% Pe	ervious Area	a				
		12,570		15.90% lm	pervious Ai	rea				
	Tc	Length	Slope	Velocity	Capacity	Description				
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	38.1	50	0.0400	0.02		Sheet Flow, cemetery				
						Grass: Short n= 0.150 P2= 0.04"				
	0.5	96	0.2300	3.36		Shallow Concentrated Flow, grass				
						Short Grass Pasture Kv= 7.0 fps				
	0.7	260	0.1400	6.02		Shallow Concentrated Flow, bare				
						Unpaved Kv= 16.1 fps				
_	39.3	406	Total							

# Subcatchment 1S: dep 1 DA



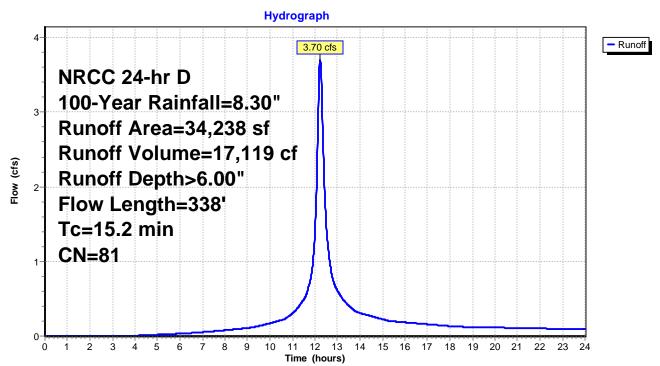
# Summary for Subcatchment 2S: dep 2 DA

Runoff = 3.70 cfs @ 12.23 hrs, Volume= 17,119 cf, Depth> 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Δ	Area (sf)	CN	Description	1	
*		4,525	98	roof & pvm	int	
		13,599	68	<50% Gra	ss cover, Po	oor, HSG A
		8,272	77	Fallow, bar	e soil, HSG	G A
		2,342	91	Fallow, bar	e soil, HSG	G C
*		2,147	98	pre-exist he	ouse, HSG	A
*		3,353	98	pre-exist w	arehouse, l	HSG C
		34,238	81	Weighted A	Average	
		24,213		70.72% Pe	ervious Area	a control of the cont
		10,025		29.28% lm	pervious A	rea
	_					
	Tc	Length	Slope	,	Capacity	Description
_	(min)	(feet)	(ft/ft)		(cfs)	
	14.1	25	0.1200	0.03		Sheet Flow, cemetery
						Grass: Short n= 0.150 P2= 0.04"
	0.5	97	0.2200	3.28		Shallow Concentrated Flow, grass
						Short Grass Pasture Kv= 7.0 fps
	0.6	216	0.1300	5.80		Shallow Concentrated Flow, bare soil
_						Unpaved Kv= 16.1 fps
	15.2	338	Total			

# Subcatchment 2S: dep 2 DA



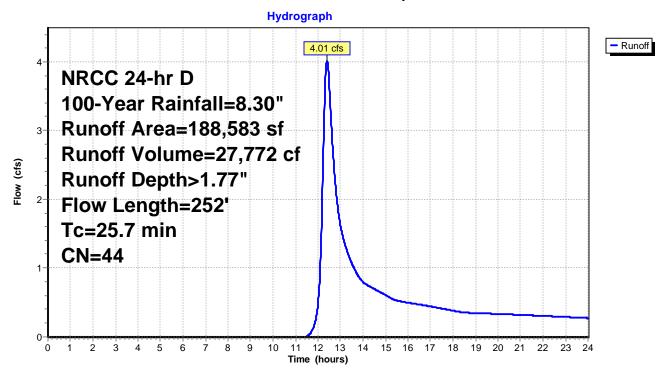
# Summary for Subcatchment 3S: cent dep DA

Runoff = 4.01 cfs @ 12.40 hrs, Volume= 27,772 cf, Depth> 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

_	Α	rea (sf)	CN	Description	1					
*		2,218	98	barn	arn					
		18,317	89	<50% Gras	ss cover, P	oor, HSG D				
	1	16,882	39	ood, HSG A						
		48,880	36	Woods, Fa	air, HSG A					
*		2,286	97	Dirt roads,	HSG D					
	1	88,583	44	Weighted A	Average					
	1	86,365		98.82% Pervious Area						
		2,218		1.18% lmp	ervious Are	ea				
	Tc	Length	Slope	,	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	24.6	50	0.1200	0.03		Sheet Flow, grass				
						Grass: Short n= 0.150 P2= 0.04"				
	0.7	125	0.1600	2.80		Shallow Concentrated Flow, cemetery				
						Short Grass Pasture Kv= 7.0 fps				
	0.4	77	0.0400	3.22		Shallow Concentrated Flow, bare				
_						Unpaved Kv= 16.1 fps				
	25.7	252	Total							

# Subcatchment 3S: cent dep DA



#### Summary for Subcatchment 4S: rte one

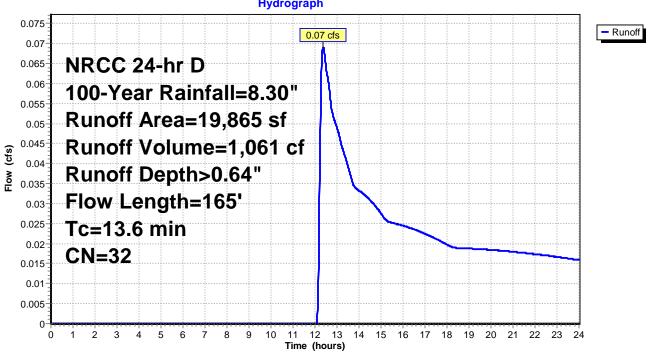
1,061 cf, Depth> 0.64" Runoff 0.07 cfs @ 12.38 hrs, Volume=

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

A	rea (sf)	CN	Description	1				
4,389 39 >75% Grass cover, Good, HSG A								
	15,476	30	Woods, Go	ood, HSG A	4			
	19,865	32	Weighted A	Average				
	19,865		100.00% F	ervious Are	ea			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description			
12.7	20	0.1000	0.03		Sheet Flow, cemetery			
0.7	96	0.2300	2.40		Grass: Short n= 0.150 P2= 0.04"  Shallow Concentrated Flow, woods			
0.2	49	0.4500	3.35		Woodland Kv= 5.0 fps Shallow Concentrated Flow, woods Woodland Kv= 5.0 fps			
13.6	165	Total						

#### Subcatchment 4S: rte one

#### Hydrograph



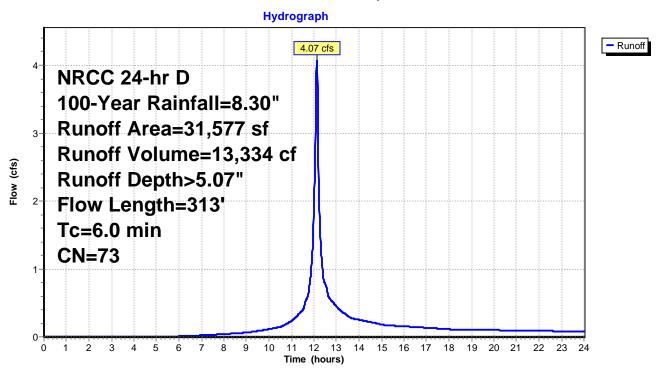
# Summary for Subcatchment 5S: dep 3 DA

Runoff = 4.07 cfs @ 12.13 hrs, Volume= 13,334 cf, Depth> 5.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	P	Area (sf)	CN	Description	1	
*		1,388	98	roof & pvm	nt	
		28,408				Good, HSG C
		1,781	36	Woods, Fa	ir, HSG A	
		31,577	73	Weighted /	Average	
		30,189		95.60% Pe	ervious Area	ea
		1,388		4.40% Imp	ervious Are	rea
				·		
	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	<u> </u>
	0.2	25	0.1600	2.00		Shallow Concentrated Flow, woods
						Woodland Kv= 5.0 fps
	0.4	43	0.1400	1.87		Shallow Concentrated Flow, woods
						Woodland Kv= 5.0 fps
	2.1	245	0.0800	1.98		Shallow Concentrated Flow, grass
						Short Grass Pasture Kv= 7.0 fps
	3.3					Direct Entry, 6 min minimum
	6.0	313	Total		•	

# Subcatchment 5S: dep 3 DA



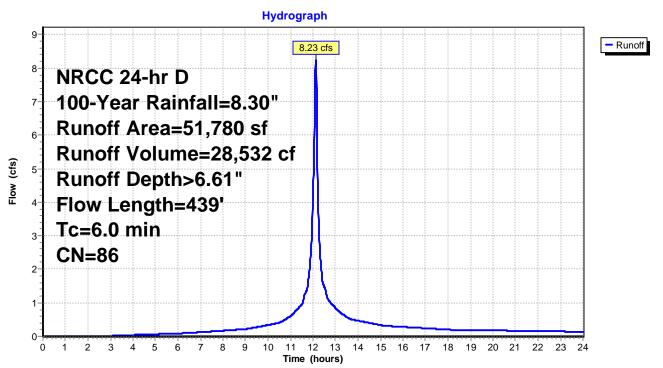
# Summary for Subcatchment 6S: cb 1889 DA

Runoff = 8.23 cfs @ 12.13 hrs, Volume= 28,532 cf, Depth> 6.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

_	Α	Area (sf)	CN	Description	1					
*		8,445	98	roof & pvmnt						
		14,077	86	<50% Gras	50% Grass cover, Poor, HSG C					
		4,389	39	>75% Gras	ss cover, G	ood, HSG A				
		5,092	77	Woods, Po	or, HSG C					
*		3,284	97	Dirt roads,	HSG D					
		16,493	94	Fallow, bar	e soil, HSG	G D				
		51,780	86	Weighted A	Average					
		43,335		83.69% Pe	ervious Area	a e e e e e e e e e e e e e e e e e e e				
		8,445		16.31% lm	pervious A	rea				
	Tc	Length	Slope	,	Capacity	Description				
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
	0.2	25	0.0800	1.98		Shallow Concentrated Flow, cemetery				
						Short Grass Pasture Kv= 7.0 fps				
	0.7	107	0.1200	2.42		Shallow Concentrated Flow, cemetery				
						Short Grass Pasture Kv= 7.0 fps				
	0.6	107	0.3100	2.78		Shallow Concentrated Flow, woods				
						Woodland Kv= 5.0 fps				
	0.7	200	0.0950	4.96		Shallow Concentrated Flow, bare				
	0.0					Unpaved Kv= 16.1 fps				
_	3.8					Direct Entry, add for 6 min. minimum				
	6.0	439	Total							

# Subcatchment 6S: cb 1889 DA



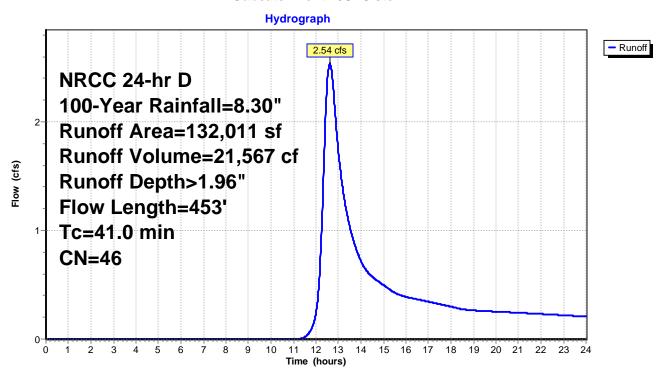
# Summary for Subcatchment 20S: Cistern DA

Runoff = 2.54 cfs @ 12.62 hrs, Volume= 21,567 cf, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Α	rea (sf)	CN	Description	1	
*		78,503	39	cemertery		
		10,899	30	Woods, Go	ood, HSG A	A A
*		3,034	98	exist roofs		
*		12,226	98	impervious	HSG D	
		25,167	39	>75% Gras	ss cover, G	ood, HSG A
_		2,182	80	>75% Gras	ss cover, G	ood, HSG D
	1	32,011		Weighted A		
	1	16,751		88.44% Pe	ervious Area	a
	15,260 11.56% Impervious Are					rea
	_		01			
	Tc	Length	Slope	,	Capacity	Description
_	(min)	(feet)	(ft/ft)		(cfs)	
	38.1	50	0.0400	0.02		Sheet Flow, cemetery
						Grass: Short n= 0.150 P2= 0.04"
	0.5	100	0.2600	3.57		Shallow Concentrated Flow, cemetery
						Short Grass Pasture Kv= 7.0 fps
	2.4	303	0.0900	2.10		Shallow Concentrated Flow, lawn & swale
_						Short Grass Pasture Kv= 7.0 fps
	41.0	453	Total			

# Subcatchment 20S: Cistern DA



# Summary for Subcatchment 21S: CB 5

Runoff = 0.24 cfs @ 12.14 hrs, Volume= 823 cf, Depth> 2.54"

8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Area (sf)	CN	Description	1						
*	70	98	impervious	impervious HSG A						
	60	74	>75% Gras	s cover, G	ood, HSG C					
*	1,274	50	Planking D	lanking D						
*	2,486	50	Pervious D							
	3,890	51	Weighted A	Average						
	3,820		98.20% Pe	rvious Area	a					
	70		1.80% Imp	ervious Are	a					
	Tc Length	Slop	e Velocity	Capacity	Description					
(r	min) (feet)	(ft/f	t) (ft/sec)	(cfs)						
	6.0				Direct Entry,	direct				

#### Subcatchment 21S: CB 5

#### Hydrograph 0.26 Runoff 0.24 cfs 0.24 NRCC 24-hr D 0.22 100-Year Rainfall=8.30" 0.2 Runoff Area=3,890 sf 0.18 Runoff Volume=823 cf 0.16 0.14 Runoff Depth>2.54" 0.12 Tc=6.0 min 0.1 CN=51 0.08 0.06 0.04 0.02

11 12 13 **Time (hours)** 

14 15 16 17 18 19 20 21

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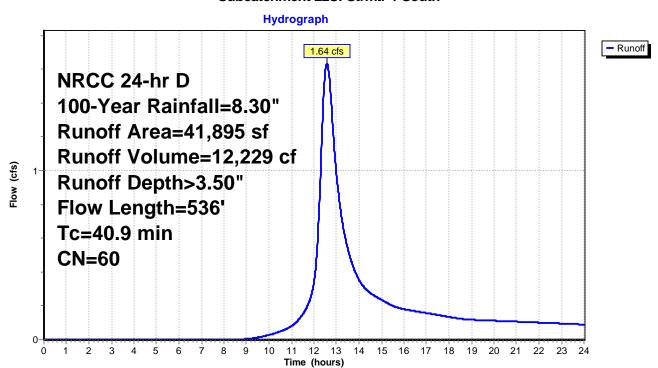
#### Summary for Subcatchment 22S: Strmtr 1 South

Runoff = 1.64 cfs @ 12.59 hrs, Volume= 12,229 cf, Depth> 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	P	Area (sf)	CN	Description	1						
*		15,487	39	Cemetery							
		5,314	30	Woods, Go	Voods, Good, HSG A						
*		2,400	98	impervious	mpervious HSG A						
		3,003	39	>75% Gras	75% Grass cover, Good, HSG A						
		3,519	74	>75% Gras	75% Grass cover, Good, HSG C						
		1,985	80	>75% Gras	75% Grass cover, Good, HSG D						
*		8,451	98	impervious	HSG C						
*		1,736	98	impervious	HSG D						
		41,895	60	Weighted	Average						
		29,308		69.96% Pe		a					
		12,587		30.04% Im	pervious A	rea					
					•						
	Tc	Length	Slope	Velocity	Capacity	Description					
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	38.1	50	0.0400	0.02		Sheet Flow, cemetery					
						Grass: Short n= 0.150 P2= 0.04"					
	1.2	138	0.0700	1.85		Shallow Concentrated Flow, cemetery					
						Short Grass Pasture Kv= 7.0 fps					
	0.2	46	0.4800	3.46		Shallow Concentrated Flow, woods					
						Woodland Kv= 5.0 fps					
	0.4	76	0.2100	3.21		Shallow Concentrated Flow, swale					
						Short Grass Pasture Kv= 7.0 fps					
	1.0	226	0.0360	3.85		Shallow Concentrated Flow, pvd					
_						Paved Kv= 20.3 fps					
	40.9	536	Total								

# Subcatchment 22S: Strmtr 1 South



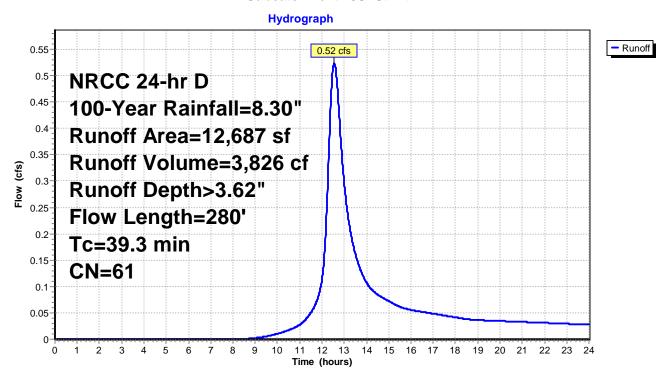
# Summary for Subcatchment 23S: Strmtr2

Runoff = 0.52 cfs @ 12.54 hrs, Volume= 3,826 cf, Depth> 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Д	rea (sf)	CN	Description	1						
*		2,231	39	Cemetery	Cemetery						
		2,408	30	Woods, G	ood, HSG A	1					
*		5,201	98	impervious	HSG A						
		2,847	39	>75% Gras	>75% Grass cover, Good, HSG A						
	12,687 61 Weighted Average										
		7,486			ervious Area	a a constant of the constant o					
		5,201		40.99% lm	pervious Ai	rea					
					•						
	Tc	Length	Slope	Velocity	Capacity	Description					
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)						
	38.1	50	0.0400	0.02		Sheet Flow, cemetery					
						Grass: Short n= 0.150 P2= 0.04"					
	0.5	78	0.1300	2.52		Shallow Concentrated Flow, cemetery					
						Short Grass Pasture Kv= 7.0 fps					
	0.1	26	0.4600	3.39		Shallow Concentrated Flow, woods					
						Woodland Kv= 5.0 fps					
	0.2	59	0.4000	4.43		Shallow Concentrated Flow, swale					
						Short Grass Pasture Kv= 7.0 fps					
	0.4	67	0.0220	3.01		Shallow Concentrated Flow, paved					
_						Paved Kv= 20.3 fps					
	39.3	280	Total								

#### Subcatchment 23S: Strmtr2



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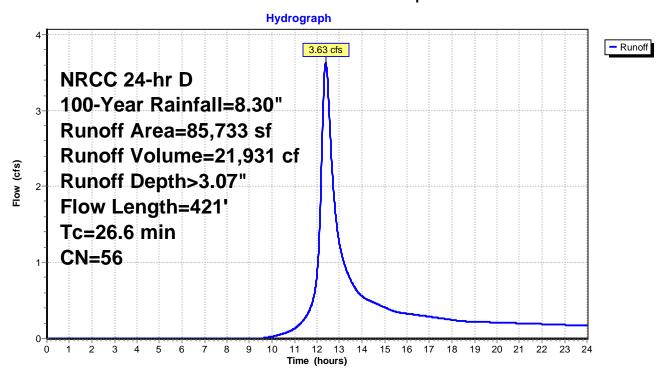
# Summary for Subcatchment 24S: CentDep

Runoff = 3.63 cfs @ 12.38 hrs, Volume= 21,931 cf, Depth> 3.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	A	Area (sf)	CN	Description	1					
*		40,139	39	Cemetery						
		6,033	30	Woods, Go	ood, HSG	A				
*		1,199	98	impervious	HSG A					
*		75	98	impervious						
		5,671	39	>75% Gras	ss cover, G	Good, HSG A				
		21,301	80		75% Grass cover, Good, HSG D					
*		9,481	98	impervious						
*		1,143	50	planking H						
*		691	50	planking H	SG A					
		85,733	56	Weighted A	Average					
		74,978		87.46% Pe		•				
		10,755		12.54% lm	pervious A	rea				
	_		01							
	Tc	9	Slope	,	Capacity	·				
_	(min)	(feet)	(ft/ft	, , ,	(cfs)					
	24.6	50	0.1200	0.03		Sheet Flow, grass				
						Grass: Short n= 0.150 P2= 0.04"				
	0.7	125	0.1600	2.80		Shallow Concentrated Flow, woods				
						Short Grass Pasture Kv= 7.0 fps				
	0.4	62	0.1600	2.80		Shallow Concentrated Flow, swale				
	0.0	404	0.0076			Short Grass Pasture Kv= 7.0 fps				
	0.9	184	0.0270	3.34		Shallow Concentrated Flow, paved				
_						Paved Kv= 20.3 fps				
	26.6	421	Total							

#### Subcatchment 24S: CentDep



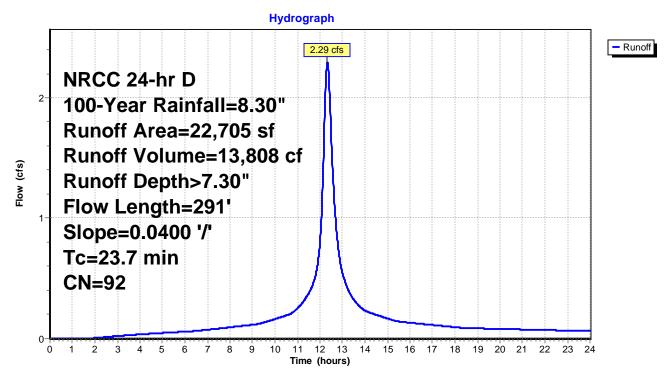
# Summary for Subcatchment 25S: Strmtr1 North

Runoff = 2.29 cfs @ 12.33 hrs, Volume= 13,808 cf, Depth> 7.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Α	rea (sf)	CN	Description	1				
*		10,501	98	impervious	npervious HSG A				
*		6,100	98	impervious	mpervious HSG C				
		3,082	74	>75% Gras	ss cover, C	ood, HSG C			
_		3,022	80	>75% Gras	ss cover, C	ood, HSG D			
		22,705	92	Weighted	Average				
		6,104		26.88% Pe					
		16,601		73.12% lm	pervious A	ea			
	_								
		Length	Slope	,	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	22.6	26	0.0400	0.02		Sheet Flow, grass			
						Grass: Short $n = 0.150$			
	1.1	265	0.0400	4.06		Shallow Concentrated F	low, paved		
						Paved Kv= 20.3 fps			
	23.7	201	Total						

#### Subcatchment 25S: Strmtr1 North



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# Summary for Subcatchment 26S: RG 3

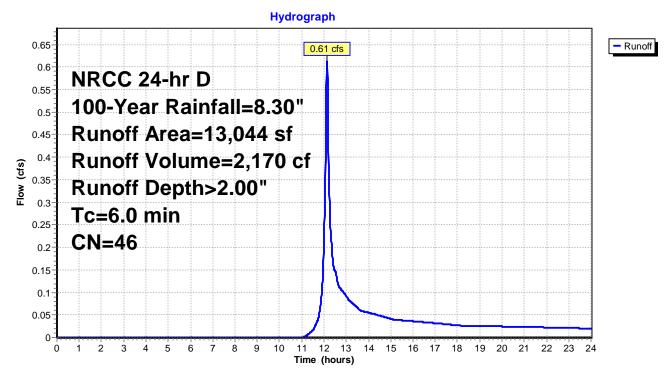
0.61 cfs @ 12.14 hrs, Volume= 2,170 cf, Depth> 2.00" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

_	Area (sf)	CN	Description					
*	1,269	98	impervious HSG A					
	9,945	39	>75% Grass cover, Good, HSG A					
*	1,830	50	anking HSG A					
_	13,044	46	Weighted Average					
	11,775		90.27% Pervious Area					
	1,269		9.73% Impervious Area					
	Tc Lenath	Clon	No. Volgaity, Canacity, Decariation					
		Slop						
_	(min) (feet)	(ft/1						
	6.0		Direct Entry, direct entry					

# Direct Entry, direct entry

#### Subcatchment 26S: RG 3



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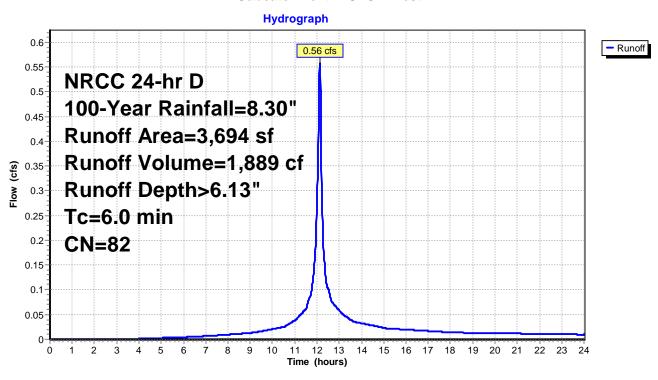
# Summary for Subcatchment 27S: GH West

Runoff = 0.56 cfs @ 12.13 hrs, Volume= 1,889 cf, Depth> 6.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Area (sf)	CN	Description	Description					
*	390	98	impervious	mpervious HSG D					
	3,304	80	>75% Gras	ss cover, G	Good, HSG D				
	3,694	82	Weighted Average						
	3,304		89.44% Pe	89.44% Pervious Area					
	390		10.56% lm	pervious A	Area				
	Tc Length	Slope	,	Capacity	·				
(mi	in) (feet)	(ft/ft	) (ft/sec)	(cfs)					
6	5.0				Direct Entry, direct entry				

# Subcatchment 27S: GH West



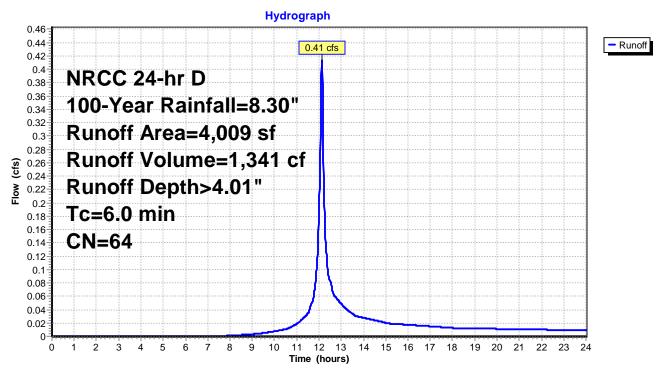
# Summary for Subcatchment 28S: GH East

Runoff = 0.41 cfs @ 12.13 hrs, Volume= 1,341 cf, Depth> 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

_	Α	rea (sf)	CN	Description	1					
*		1,129	98	impervious	mpervious HSG D					
*		2,880	50	planking H	planking HSG D					
		4,009	64	Weighted A	Average					
		2,880		71.84% Pe	71.84% Pervious Area					
		1,129		28.16% lm	pervious A	rea				
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description				
	6.0					Direct Entry, direct entry				

# Subcatchment 28S: GH East



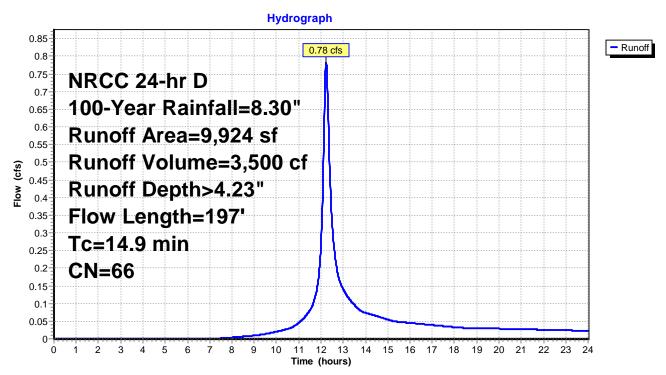
# Summary for Subcatchment 29S: CB 1

Runoff = 0.78 cfs @ 12.23 hrs, Volume= 3,500 cf, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

_	Α	rea (sf)	CN	Description	1				
*		3,522	98	impervious	HSG A				
*		1,102	98	exist roof H	ISG A				
*		261	39	cemetery F	ISG A				
		5,039	39	>75% Gras	ss cover, G	ood, HSG A			
	9,924 66 Weighted Average								
		5,300		53.41% Pervious Area					
		4,624		46.59% lm	pervious A	rea			
	Tc	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	14.1	25	0.1200	0.03		Sheet Flow, cemetery			
						Grass: Short n= 0.150 P2= 0.04"			
	0.5	97	0.2000	3.13		Shallow Concentrated Flow, grrass			
						Short Grass Pasture Kv= 7.0 fps			
	0.3	75	0.0500	4.54		Shallow Concentrated Flow, pvd			
						Paved Kv= 20.3 fps			
	14.9	197	Total		•				

#### Subcatchment 29S: CB 1



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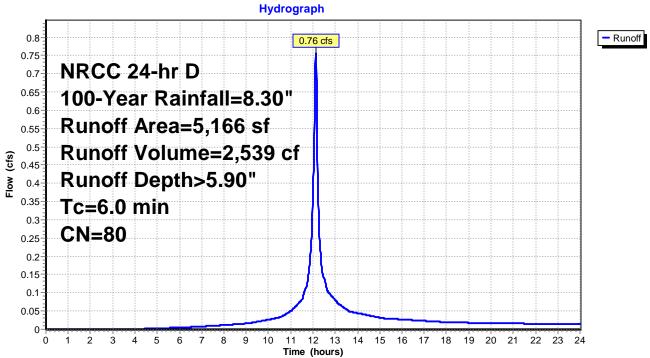
# Summary for Subcatchment 30S: CB 3

0.76 cfs @ 12.13 hrs, Volume= 2,539 cf, Depth> 5.90" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Area (sf)	CN	Description	Description						
*	3,592	98	impervious	mpervious HSG A						
	1,574	39	>75% Gras	ss cover, G	od, HSG A					
	5,166	80	Weighted	Average						
	1,574		30.47% Pe	30.47% Pervious Area						
	3,592		69.53% lm	pervious A	a					
(	Tc Length		,	Capacity (cfs)	Description					
	6.0				Direct Entry, direct					

# Subcatchment 30S: CB 3



# Summary for Subcatchment 31S: Rte 1

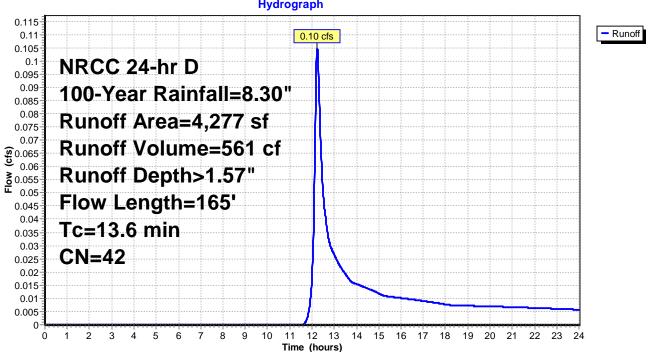
561 cf, Depth> 1.57" Runoff 0.10 cfs @ 12.24 hrs, Volume=

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	А	rea (sf)	CN	Description	1			
*		709	39	Cemetery I	HSG A			
		1,784	30	Woods, Go	ood, HSG A	4		
*		493	98	impervious	npervious HSG A			
		1,291	39	>75% Gras	ss cover, G	ood, HSG A		
		4,277	42	Weighted A	Average			
		3,784		88.47% Pe	ervious Area	a		
		493		11.53% lm	pervious A	rea		
	Tc	Length	Slope	Velocity	Capacity	Description		
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	12.7	20	0.1000	0.03		Sheet Flow, cemetery		
						Grass: Short n= 0.150 P2= 0.04"		
	0.7	96	0.2300	2.40		Shallow Concentrated Flow, woods		
						Woodland Kv= 5.0 fps		
	0.2	49	0.4500	3.35		Shallow Concentrated Flow, wds		
						Woodland Kv= 5.0 fps		
	13.6	165	Total					

#### Subcatchment 31S: Rte 1

#### Hydrograph



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# Summary for Subcatchment 32S: GH

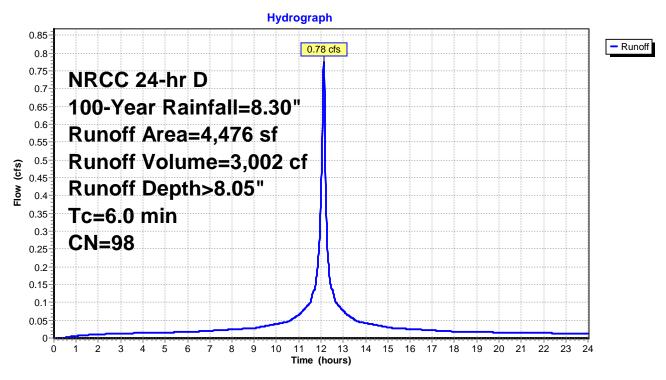
0.78 cfs @ 12.13 hrs, Volume= 3,002 cf, Depth> 8.05" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

_	Α	rea (sf)	CN	Description	1				
4	ŧ	4,476	98	roof HSG [	)				
		4,476		100.00% Impervious Area					
	Тс	- 3	Slope	,		·			
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)				
	6.0					Direct Entry, direct entry			

Direct Entry, direct entry

# Subcatchment 32S: GH



# Summary for Subcatchment 33S: 12-14 CC

Runoff = 1.75 cfs @ 12.13 hrs, Volume= 5,859 cf, Depth> 5.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Area (sf)	CN	Description
*	1,709	98	impervious HSG D
	4,934	74	>75% Grass cover, Good, HSG C
	5,279	80	>75% Grass cover, Good, HSG D
	11,922	80	Weighted Average
	10,213		85.67% Pervious Area
	1,709		14.33% Impervious Area
	Tc Length	Slop (ft/f	
	3.0	•	Direct Entry, Direct

# Subcatchment 33S: 12-14 CC

# NRCC 24-hr D 100-Year Rainfall=8.30" Runoff Area=11,922 sf Runoff Volume=5,859 cf Runoff Depth>5.90" Tc=6.0 min CN=80

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## Summary for Subcatchment 34S: Barn

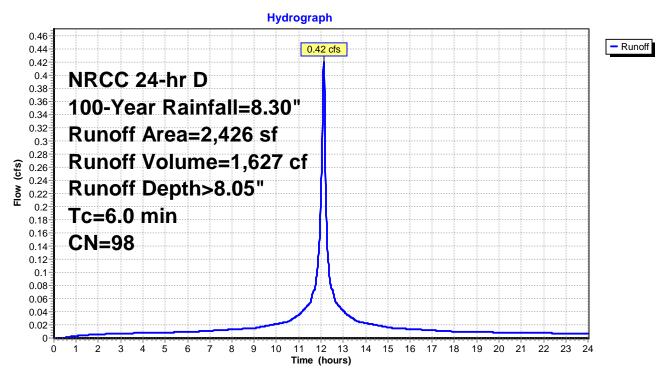
0.42 cfs @ 12.13 hrs, Volume= 1,627 cf, Depth> 8.05" Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

_	Α	rea (sf)	CN	Description	1	
-	ŧ	2,426	98	roof HSG I	)	
		2,426		100.00% lı	mpervious /	Area
	Tc	. 3	Slope	,		Description
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	
	6.0					Direct Entry, minimum

Direct Entry, minimum

# Subcatchment 34S: Barn



# Summary for Subcatchment 40S: YW

0.37 cfs @ 12.13 hrs, Volume= 1,433 cf, Depth> 8.05" Runoff

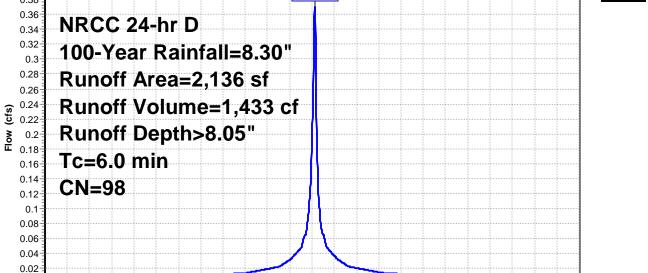
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Α	rea (sf)	CN	Description	1	
*		2,136	98	roof, HSG	Α	
_		2,136		100.00% lı	mpervious /	Area
	Tc	-	Slope	,		·
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	6.0					Direct Entry, Direct

# Subcatchment 40S: YW

#### 0.4 0.37 cfs - Runoff 0.38 0.36 NRCC 24-hr D 0.34 0.32

Hydrograph



11 12 13

Time (hours)

14 15 16 17 18

20

10

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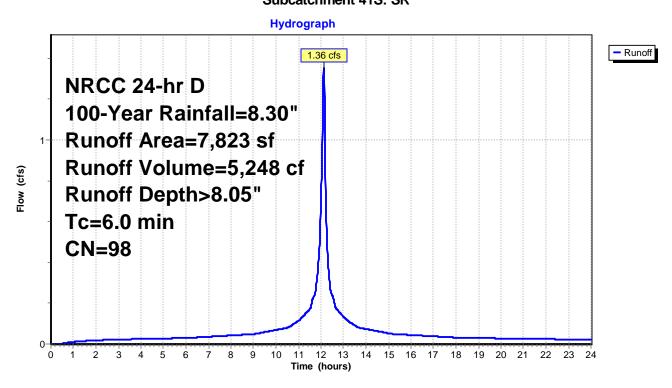
## Summary for Subcatchment 41S: SR

Runoff = 1.36 cfs @ 12.13 hrs, Volume= 5,248 cf, Depth> 8.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Α	Area (sf)	CN	Description	1	
*		7,823	98	roof HSG	4	
		7,823		100.00% lı	mpervious /	s Area
	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	y Description
-	6.0	(1001)	(1011	(12000)	(0.0)	Direct Entry, Direct

# Subcatchment 41S: SR



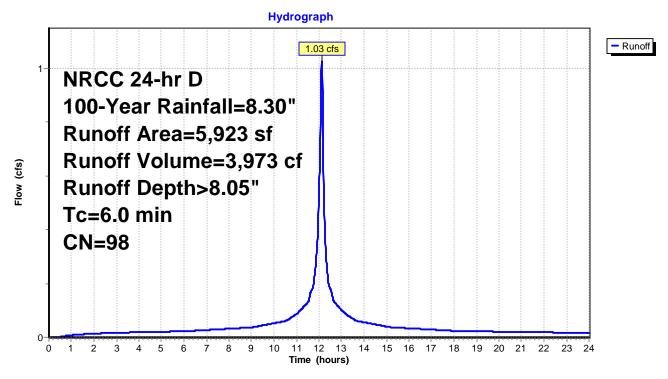
# Summary for Subcatchment 42S: CE

3,973 cf, Depth> 8.05" Runoff 1.03 cfs @ 12.13 hrs, Volume=

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Д	rea (sf)	CN	Description	1				
*		2,744	98	roof HSG (	roof HSG C				
*		3,179	98	roof HSG [	)				
		5,923	98	Weighted A	Average				
		5,923 100.00% Impervious <i>i</i>			mpervious /	Area			
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)				
	6.0					Direct Entry, Direct			

### Subcatchment 42S: CE



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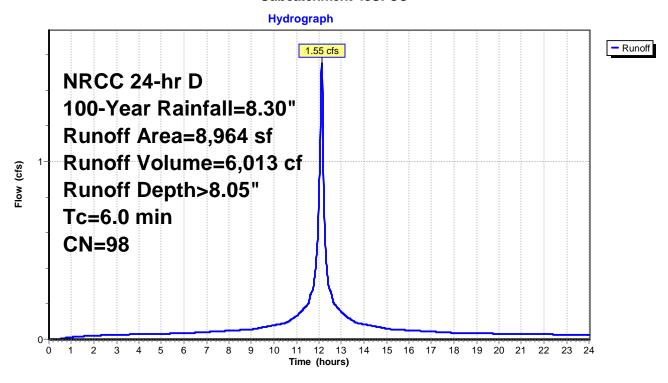
# Summary for Subcatchment 43S: CC

Runoff = 1.55 cfs @ 12.13 hrs, Volume= 6,013 cf, Depth> 8.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Α	rea (sf)	CN	Description	l	
*		4,684	98	roof HSG (		
*		4,280	98	roof HSG [	)	
		8,964	98	Weighted A	Average	
		8,964		100.00% lr	npervious A	Area
	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description
	6.0					Direct Entry, Direct

# Subcatchment 43S: CC



# Summary for Subcatchment 44S: HA+CH

Runoff = 1.75 cfs @ 12.13 hrs, Volume= 6,787 cf, Depth> 8.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Α	rea (sf)	CN	Description	1	
*		1,803	98	roof HSG A	4	
*		8,315	98	roof HSG [	)	
		10,118	98	Weighted A	Average	
		10,118		100.00% lr	npervious /	Area
	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description
-	6.0	(100)	(1411	(12000)	(515)	Direct Entry, Direct

# Subcatchment 44S: HA+CH

# NRCC 24-hr D 100-Year Rainfall=8.30" Runoff Area=10,118 sf Runoff Volume=6,787 cf Runoff Depth>8.05" Tc=6.0 min CN=98

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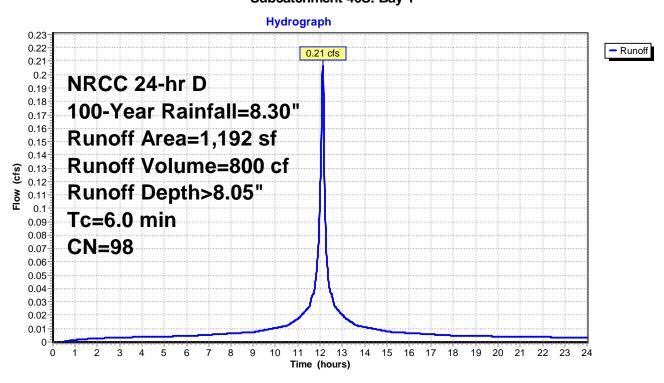
# Summary for Subcatchment 46S: Bay 1

Runoff = 0.21 cfs @ 12.13 hrs, Volume= 800 cf, Depth> 8.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

_	A										
*		1,192	98	porous pav	prous pavement						
_		1,192		100.00% li	mpervious /	Area					
	Tc (min)	Length (feet)	Slope (ft/ft)	,	Capacity (cfs)	Description					
-	6.0	, ,	`	, ,	` '	Direct Entry, min					

# Subcatchment 46S: Bay 1



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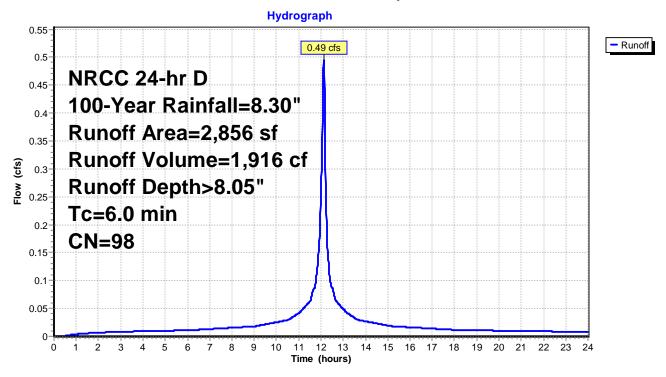
# Summary for Subcatchment 49S: Bay 2

Runoff = 0.49 cfs @ 12.13 hrs, Volume= 1,916 cf, Depth> 8.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

_	Α	rea (sf)	CN	Description	1					
*		1,192	98	porous pav	orous pavement					
*		1,664	98	pavement l	HSG C					
		2,856	98	Weighted A	Average					
		2,856		100.00% lr	mpervious /	Area				
_	Tc (min)	Length (feet)	Slope (ft/ft	,	Capacity (cfs)	Description				
	6.0					Direct Entry, min				

# Subcatchment 49S: Bay 2



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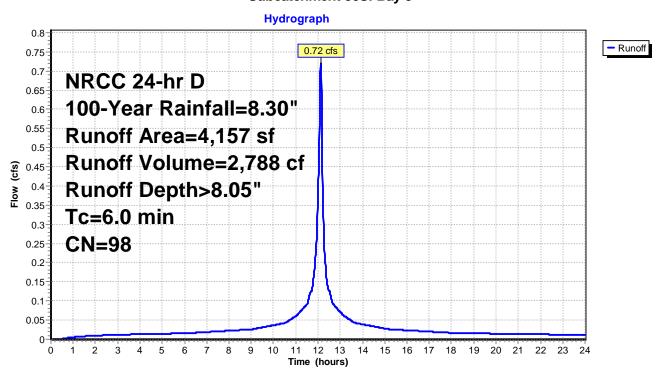
# Summary for Subcatchment 50S: Bay 3

Runoff = 0.72 cfs @ 12.13 hrs, Volume= 2,788 cf, Depth> 8.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Д	rea (sf)	CN	Description	Description							
*		2,545	98	porous pav	orous pavement HSG C							
*		1,612	98	pavement I	avement HSG C							
		4,157	4,157 98 Weighted Average									
		4,157		100.00% lr	npervious A	Area						
	Tc	Length	Slope	e Velocity	Capacity	Description						
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)							
	6.0					Direct Entry, min						

# Subcatchment 50S: Bay 3



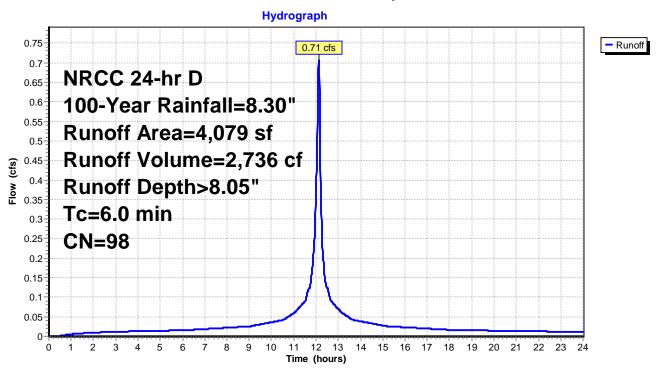
# Summary for Subcatchment 51S: Bay 4

Runoff = 0.71 cfs @ 12.13 hrs, Volume= 2,736 cf, Depth> 8.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs NRCC 24-hr D 100-Year Rainfall=8.30"

	Α	rea (sf)	CN	Description	Description							
*		1,530	98	porous pav	orous pavement HSG C							
*		2,549	98	pavement I	avement HSG C							
		4,079	98	Weighted A	/eighted Average							
		4,079		100.00% lr	npervious A	Area						
	_		01									
	Tc	Length	Slope	<ul><li>Velocity</li></ul>	Capacity	Description						
	(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)							
	6.0					Direct Entry, min						

# Subcatchment 51S: Bay 4



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### Summary for Pond 1P: Dep 1

79,064 sf, 15.90% Impervious, Inflow Depth > 7.39" for 100-Year event Inflow Area =

6.18 cfs @ 12.53 hrs, Volume= Inflow = 48,681 cf

6.66 cfs @ 12.43 hrs, Volume= 6.99 cfs @ 12.43 hrs, Volume= Outflow = 48,680 cf, Atten= 0%, Lag= 0.0 min

Primary = 49,077 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 31.02' @ 13.09 hrs Surf.Area= 8,529 sf Storage= 8,615 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 30.1 min (824.8 - 794.7)

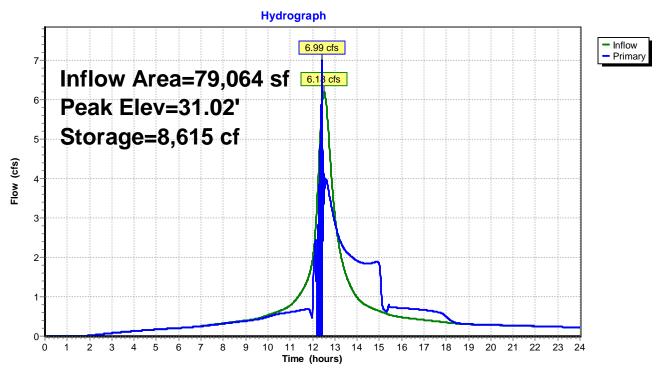
Volume	Inv	ert Avail.S	torage Storag	ge Description				
#1	28.	00' 18,	511 cf Custor	m Stage Data (Prismatic) Listed below (Recalc)				
Elevation (fee	-	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)				
28.0	00	163	0	0				
29.0	00	253	208	208				
30.0		3,899	2,076	2,284				
31.0		8,477	6,188	8,472				
32.0	00	11,600	10,039	18,511				
Device	Routing	Invert	Outlet Device	es				
#1	Primary	30.00	39.0' long x	10.0' breadth Broad-Crested Rectangular Weir				
	•		Head (feet) (	0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60				
				Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64				
#2	Primary	26.50	2.0" Round	Culvert L= 41.0' RCP, sq.cut end projecting, Ke= 0.500				
				Inlet / Outlet Invert= 26.50' / 25.40' S= 0.0268 '/' Cc= 0.900 n= 0.010, Flow Area= 0.02 sf				
#3	Primary	27.70		Culvert L= 41.0' RCP, sq.cut end projecting, Ke= 0.500				
			Inlet / Outlet I	Invert= 27.70' / 25.40' S= 0.0561 '/' Cc= 0.900 n= 0.010, Flow Area= 0.09 sf				

Primary OutFlow Max=0.00 cfs @ 12.43 hrs HW=30.63' TW=30.63' (Dynamic Tailwater)

-1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

-2=Culvert (Controls 0.00 cfs) -3=Culvert (Controls 0.00 cfs)

Pond 1P: Dep 1



#### Summary for Pond 2P: dep 2

Inflow Area = 34,238 sf, 29.28% Impervious, Inflow Depth > 6.00" for 100-Year event

Inflow = 3.70 cfs @ 12.23 hrs, Volume= 17,119 cf

Outflow = 3.69 cfs @ 12.24 hrs, Volume= 15,356 cf, Atten= 0%, Lag= 0.4 min

Primary = 3.69 cfs @ 12.24 hrs, Volume= 15,356 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 35.56' @ 12.24 hrs Surf.Area= 2,263 sf Storage= 1,886 cf

Plug-Flow detention time= 88.8 min calculated for 15,356 cf (90% of inflow)

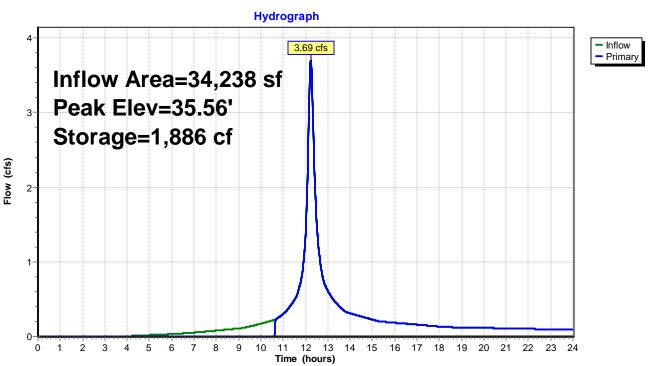
Center-of-Mass det. time= 34.7 min (854.8 - 820.0)

Volume	In	vert	Avail.Sto	orage	Storage I	Description	
#1	34	1.00' 3,05		58 cf	Custom	Stage Data (Pri	Prismatic) Listed below (Recalc)
Elevation (fee		Surf	Area sq-ft)		.Store c-feet)	Cum.Store (cubic-feet)	-
34.0	00	576		0		0	)
35.0	00	1,235			906	906	6
36.0	00	3,069			2,152	3,058	3
Device	Routing	9	Invert	Outle	t Devices		
#1	Primary	/	35.50'	100.0	long x 1	0.0' breadth Bi	Broad-Crested Rectangular Weir
	•	•		Head	l (feet) 0.2	0 0 40 0 60	0 0 80 1 00 1 20 1 40 1 60

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.69 cfs @ 12.24 hrs HW=35.56' TW=30.30' (Dynamic Tailwater) 1-Broad-Crested Rectangular Weir (Weir Controls 3.69 cfs @ 0.61 fps)

# Pond 2P: dep 2



# Summary for Pond 3P: cent dep

Inflow Area = 188,583 sf, 1.18% Impervious, Inflow Depth > 1.77" for 100-Year event

Inflow = 4.01 cfs @ 12.40 hrs, Volume= 27,772 cf

Outflow = 3.53 cfs @ 12.52 hrs, Volume= 27,744 cf, Atten= 12%, Lag= 7.2 min

Primary = 3.53 cfs @ 12.52 hrs, Volume= 27,744 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 33.45' @ 12.52 hrs Surf.Area= 1,490 sf Storage= 813 cf

Plug-Flow detention time= 1.9 min calculated for 27,744 cf (100% of inflow)

Center-of-Mass det. time= 1.4 min ( 937.9 - 936.5 )

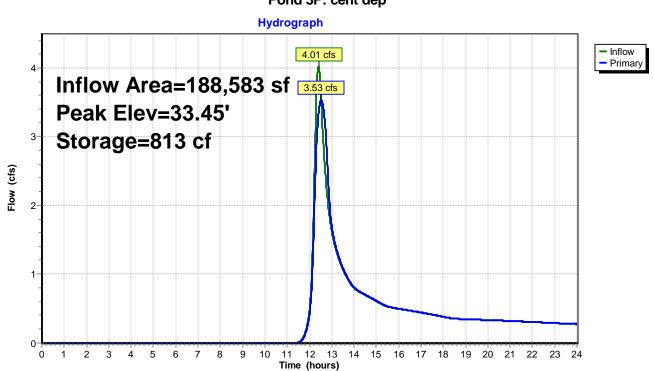
Volume	Inve	ert Avail.Sto	orage Storage D	Description
#1	31.8	3' 28,3	03 cf Custom S	Stage Data (Prismatic) Listed below (Recalc)
				, ,
Elevati	on	Surf.Area	Inc.Store	Cum.Store
(fe	et)	(sq-ft)	(cubic-feet)	(cubic-feet)
31.	83	40	0	0
33.	00	566	355	355
34.	00	2,635	1,601	1,955
35.	00	6,530	4,583	6,538
36.	00	37,000	21,765	28,303
Device	Routing	Invert	Outlet Devices	
#1	Primary	35.30'	45.0' long x 10.	0.0' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.2	20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English)	2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Primary	31.83'	12.0" Round C	Culvert L= 201.0' RCP, mitered to conform to fill, Ke= 0.700
			Inlet / Outlet Inv	vert= 31.83' / 25.00' S= 0.0340 '/' Cc= 0.900 n= 0.010. Flow Area= 0.79 sf

Primary OutFlow Max=3.53 cfs @ 12.52 hrs HW=33.45' TW=30.75' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

-2=Culvert (Inlet Controls 3.53 cfs @ 4.49 fps)

### Pond 3P: cent dep



#### Summary for Pond 4P: cb 1889

Inflow Area = 353,665 sf, 9.40% Impervious, Inflow Depth > 4.10" for 100-Year event

Inflow = 14.51 cfs @ 12.14 hrs, Volume= 120,708 cf

Outflow = 5.59 cfs @ 13.33 hrs, Volume= 120,696 cf, Atten= 61%, Lag= 71.1 min

Primary = 5.59 cfs @ 13.33 hrs, Volume= 120,696 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 31.02' @ 13.08 hrs Surf.Area= 19,730 sf Storage= 16,844 cf

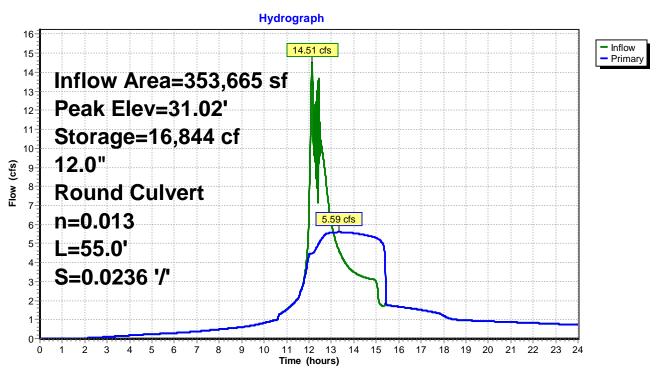
Plug-Flow detention time= 17.8 min calculated for 120,696 cf (100% of inflow)

Center-of-Mass det. time= 17.7 min (865.5 - 847.7)

Volume	ln۱	ert Ava	ail.Storage	Storag	e Description					
#1	25.	00'	42,875 cf	Custor	n Stage Data (Prisr	natic) Listed belov	v (Recalc)			
Clay of	00	Curf Araa	lno	.Store	Cum.Store					
Elevation	on	Surf.Area								
(fe	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)					
25.0	00	30		0	0					
28.	00	157		281	281					
29.0	00	623		390	671					
30.0	00	5,783		3,203	3,874					
32.0	00	33,218		9,001	42,875					
Device	Routing	In	vert Outle	et Device	es					
#1	Primary	24	.90' <b>12.0'</b>	' Round	<b>Culvert</b> L= 55.0'	RCP, sq.cut end	projecting, I	Ke = 0.500		
	•				Invert= 24.90' / 23.6				Flow Area= 0.79	sf

**Primary OutFlow** Max=5.60 cfs @ 13.33 hrs HW=30.99' TW=28.45' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 5.60 cfs @ 7.12 fps)

#### Pond 4P: cb 1889



#### **Summary for Pond 20P: Cistern**

Inflow Area = 134,437 sf, 13.16% Impervious, Inflow Depth > 2.07" for 100-Year event

Inflow = 2.60 cfs @ 12.62 hrs, Volume= 23,194 cf

Outflow = 2.60 cfs @ 12.62 hrs, Volume= 22,573 cf, Atten= 0%, Lag= 0.0 min

Primary = 2.60 cfs @ 12.62 hrs, Volume= 22,573 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.97' @ 12.62 hrs Surf.Area= 79 sf Storage= 626 cf

Plug-Flow detention time= 24.5 min calculated for 22,563 cf (97% of inflow)

Center-of-Mass det. time= 11.1 min (935.7 - 924.6)

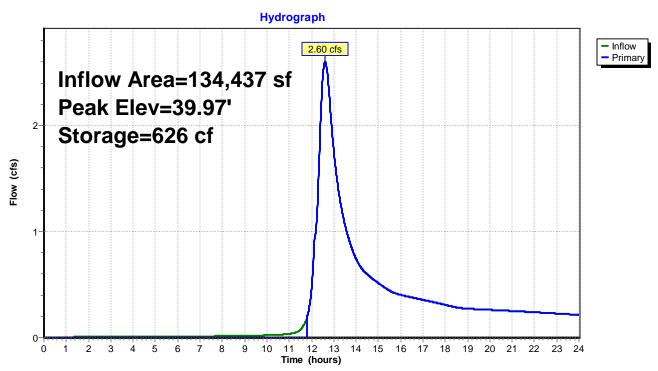
Volume	Invert	Avail.Sto	orage Storage Description
#1	32.00'	62	28 cf 10.00'D x 8.00'H Vertical Cone/Cylinder
Device	Routing	Invert	Outlet Devices
#1	Primary	39.90'	<b>1.0"</b> x <b>6.5"</b> Horiz. Orifice/Grate X <b>11.00</b> columns X 3 rows C= 0.600
#2	Primary	39.95'	Limited to weir flow at low heads  100.0' long x 15.0' breadth Broad-Crested Rectangular Weir
	,		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.63

Primary OutFlow Max=2.60 cfs @ 12.62 hrs HW=39.97' TW=35.50' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 1.89 cfs @ 1.27 fps)

-2=Broad-Crested Rectangular Weir (Weir Controls 0.71 cfs @ 0.37 fps)

### Pond 20P: Cistern



#### Summary for Pond 21P: cb 6087

Inflow Area = 353,665 sf, 9.40% Impervious, Inflow Depth > 4.10" for 100-Year event

Inflow = 5.59 cfs @ 13.33 hrs, Volume= 120,696 cf

Outflow = 5.59 cfs @ 13.33 hrs, Volume= 120,696 cf, Atten= 0%, Lag= 0.0 min

Primary = 5.59 cfs @ 13.33 hrs, Volume= 120,696 cf

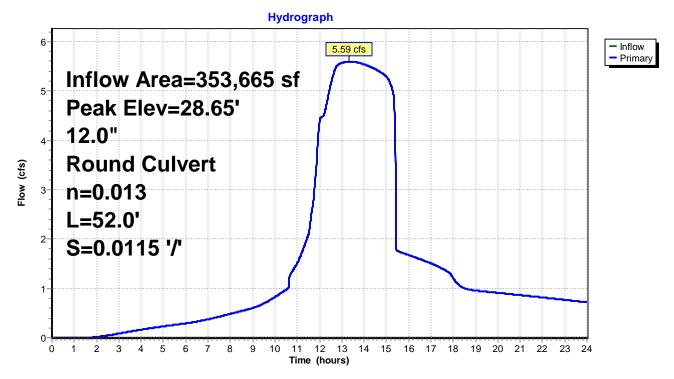
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs /  $3\,$ 

Peak Elev= 28.65' @ 12.33 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	23.60'	<b>12.0" Round Culvert</b> L= 52.0' RCP, sq.cut end projecting, Ke= 0.500
			Inlet / Outlet Invert= 23.60' / 23.00' S= 0.0115 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

**Primary OutFlow** Max=5.59 cfs @ 13.33 hrs HW=28.45' TW=25.98' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 5.59 cfs @ 7.12 fps)

#### Pond 21P: cb 6087



## Summary for Pond 22P: HW 1

Inflow Area = 220,170 sf, 12.92% Impervious, Inflow Depth > 2.42" for 100-Year event

Inflow = 5.75 cfs @ 12.45 hrs, Volume= 44,476 cf

Outflow = 2.30 cfs @ 13.25 hrs, Volume= 43,994 cf, Atten= 60%, Lag= 47.9 min

Primary = 2.30 cfs @ 13.25 hrs, Volume= 43,994 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 35.98' @ 13.25 hrs Surf.Area= 6,042 sf Storage= 8,792 cf

Flood Elev= 34.50' Surf.Area= 2,516 sf Storage= 2,477 cf

Plug-Flow detention time= 35.3 min calculated for 43,994 cf (99% of inflow)

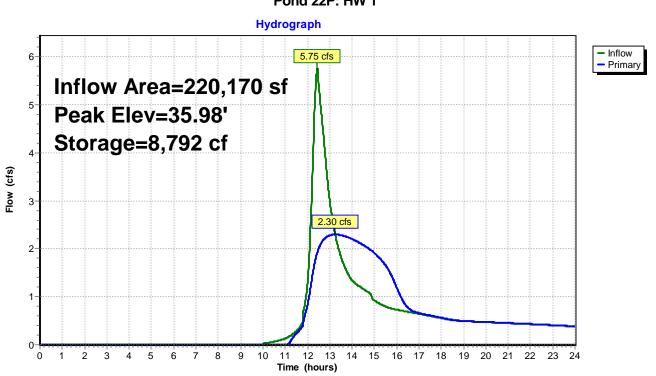
Center-of-Mass det. time= 29.7 min (947.1 - 917.4)

Volume	lnν	ert Avail.S	torage S	torage Description	1
#1	31.	50' 8	939 cf <b>C</b>	ustom Stage Data	(Prismatic) Listed below (Recalc)
<b>-</b>		0 ( )	. 0.	0 0	
Elevation	on	Surf.Area	Inc.St	ore Cum.St	ore
(fee	et)	(sq-ft)	(cubic-fe	eet) (cubic-fe	eet)
31.	50	131		0	0
33.0	00	607	5	554 5	554
34.0	00	1,321	ç	964 1,5	518
36.0	00	6,100	7,4	121 8,9	939
Device	Routing	Inver	t Outlet D	Devices	
#1	Primary	31.58	' 12.0" R	Round Culvert L=	34.0' RCP, rounded edge headwall, Ke= 0.100
	,				1' / 25.32' S= 0.1841 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf
#2	Device 1	32.50	' 7.0" Ver	rt. Orifice/Grate (	C= 0.600

Primary OutFlow Max=2.30 cfs @ 13.25 hrs HW=35.98' TW=26.04' (Dynamic Tailwater)

1=Culvert (Passes 2.30 cfs of 10.18 cfs potential flow)
2=Orifice/Grate (Orifice Controls 2.30 cfs @ 8.59 fps)

# Pond 22P: HW 1



#### Summary for Pond 23P: Strmtr 2

Inflow Area = 12,687 sf, 40.99% Impervious, Inflow Depth > 3.62" for 100-Year event

Inflow = 0.52 cfs @ 12.54 hrs, Volume= 3,826 cf

Outflow = 0.52 cfs @ 12.54 hrs, Volume= 3,826 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.52 cfs @ 12.54 hrs, Volume= 3,826 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.48' @ 12.54 hrs

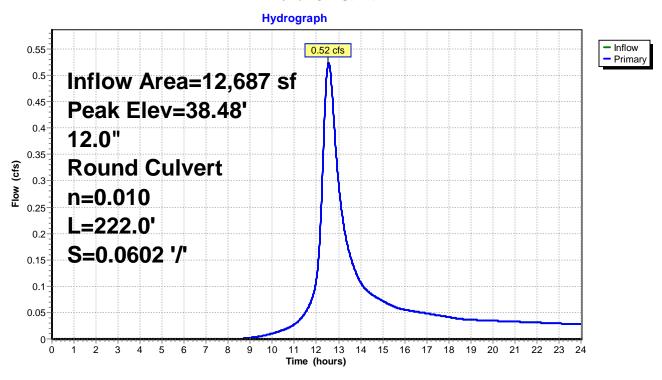
Flood Elev= 31.00'

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 38.16'
 12.0" Round Culvert L= 222.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 38.16' / 24.80' S= 0.0602 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.52 cfs @ 12.54 hrs HW=38.48' TW=26.12' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.52 cfs @ 2.41 fps)

#### Pond 23P: Strmtr 2



#### Summary for Pond 24P: RG #1

Inflow Area = 220,170 sf, 12.92% Impervious, Inflow Depth > 2.43" for 100-Year event

Inflow = 5.75 cfs @ 12.45 hrs, Volume= 44,504 cf

Outflow = 5.75 cfs @ 12.45 hrs, Volume= 44,476 cf, Atten= 0%, Lag= 0.0 min

Primary = 5.75 cfs @ 12.45 hrs, Volume= 44,476 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 35.98' @ 13.25 hrs Surf.Area= 34 sf Storage= 336 cf

Flood Elev= 36.50' Surf.Area= 10 sf Storage= 336 cf

Plug-Flow detention time= 1.3 min calculated for 44,476 cf (100% of inflow)

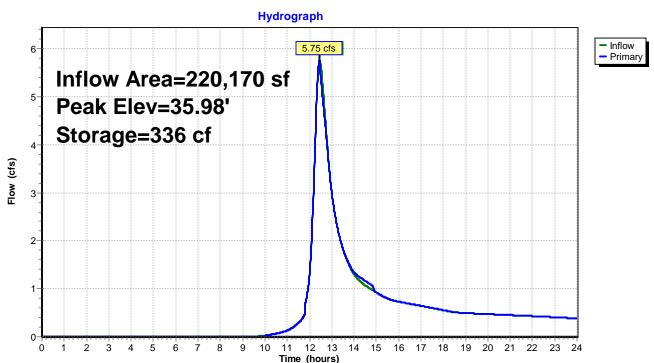
Center-of-Mass det. time= 1.0 min (917.4 - 916.4)

Volume	ln۱	ert Avail.S	torage Sto	orage Description
#1	35.	00'	336 cf <b>Cus</b>	stom Stage Data (Prismatic) Listed below (Recalc)
Elevation	on	Surf.Area	Inc.Stor	
(fee	et)	(sq-ft)	(cubic-fee	et) (cubic-feet)
35.0	00	131		0 0
35.0	08	394	2	21
35.5	50	500	18	38 209
36.0	00	10	12	28 336
Device	Routing	Invert	Outlet De	evices
#1	Primary	35.08	65.0' long	x 1.0' breadth Broad-Crested Rectangular Weir
			Head (fee	et) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00
			Coef. (En	nglish) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=5.75 cfs @ 12.45 hrs HW=35.18' TW=35.05' (Dynamic Tailwater)

1=Broad-Crested Rectangular Weir (Weir Controls 5.75 cfs @ 0.86 fps)

# Pond 24P: RG #1



#### Summary for Pond 25P: Strmtr 1

Inflow Area = 69,766 sf, 46.99% Impervious, Inflow Depth > 4.61" for 100-Year event

Inflow = 3.52 cfs @ 12.40 hrs, Volume= 26,787 cf

Outflow = 3.52 cfs @ 12.40 hrs, Volume= 26,787 cf, Atten= 0%, Lag= 0.0 min

Primary = 3.52 cfs @ 12.40 hrs, Volume= 26,787 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

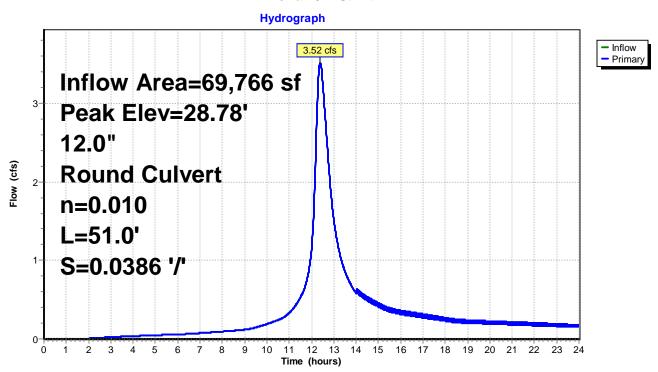
Peak Elev= 28.78' @ 12.46 hrs

Flood Elev= 31.00'

DeviceRoutingInvertOutlet Devices#1Primary26.78'12.0" Round Culvert L= 51.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 26.78' / 24.81' S= 0.0386'/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

**Primary OutFlow** Max=3.52 cfs @ 12.40 hrs HW=28.68' TW=28.01' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 3.52 cfs @ 4.48 fps)

#### Pond 25P: Strmtr 1



## Summary for Pond 26P: CB 2

Inflow Area = 22,968 sf, 25.66% Impervious, Inflow Depth > 2.95" for 100-Year event

Inflow = 1.23 cfs @ 12.16 hrs, Volume= 5,648 cf

Outflow = 1.23 cfs @ 12.16 hrs, Volume= 5,648 cf, Atten= 0%, Lag= 0.0 min

Primary = 1.23 cfs @ 12.16 hrs, Volume= 5,648 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

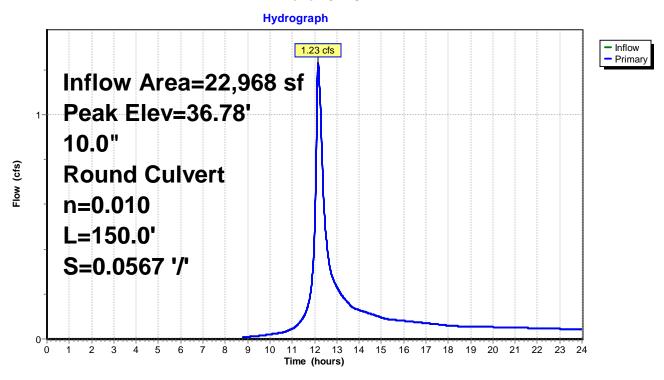
Peak Elev= 36.78' @ 12.16 hrs

Flood Elev= 40.05'

DeviceRoutingInvertOutlet Devices#1Primary36.22'10.0" Round Culvert L= 150.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 36.22' / 27.72' S= 0.0567 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

**Primary OutFlow** Max=1.23 cfs @ 12.16 hrs HW=36.78' TW=28.68' (Dynamic Tailwater) —1=Culvert (Inlet Controls 1.23 cfs @ 3.18 fps)

#### Pond 26P: CB 2



#### Summary for Pond 27P: DI 1

Inflow Area = 31,138 sf, 34.55% Impervious, Inflow Depth > 4.06" for 100-Year event

Inflow = 2.52 cfs @ 12.14 hrs, Volume= 10,539 cf

Outflow = 2.52 cfs @ 12.14 hrs, Volume= 10,539 cf, Atten= 0%, Lag= 0.0 min

Primary = 2.52 cfs @ 12.14 hrs, Volume= 10,539 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

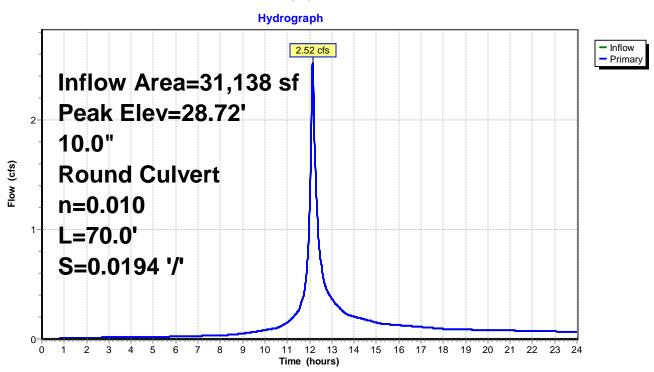
Peak Elev= 28.72' @ 12.14 hrs

Flood Elev= 33.85'

DeviceRoutingInvertOutlet Devices#1Primary27.72'10.0" Round CulvertL= 70.0' RCP, groove end projecting, Ke= 0.200<br/>Inlet / Outlet Invert= 27.72' / 26.36' S= 0.0194 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

**Primary OutFlow** Max=2.52 cfs @ 12.14 hrs HW=28.72' TW=27.75' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 2.52 cfs @ 4.61 fps)

#### Pond 27P: DI 1



#### Summary for Pond 28P: DI 2

Inflow Area = 4,009 sf, 28.16% Impervious, Inflow Depth > 4.01" for 100-Year event

Inflow = 0.41 cfs @ 12.13 hrs, Volume= 1,341 cf

Outflow = 0.41 cfs @ 12.13 hrs, Volume= 1,341 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.41 cfs @ 12.13 hrs, Volume= 1,341 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

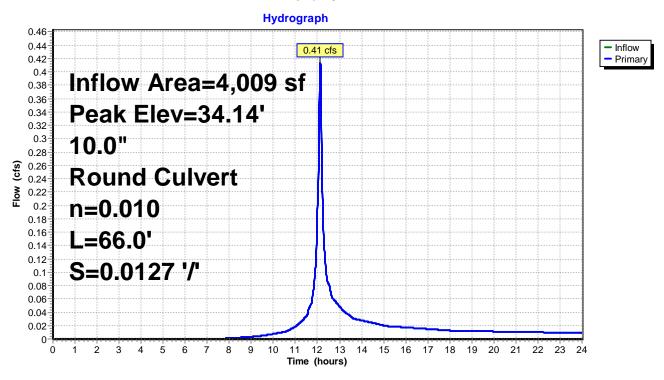
Peak Elev= 34.14' @ 12.13 hrs

Flood Elev= 35.96'

DeviceRoutingInvertOutlet Devices#1Primary33.84'10.0" Round Culvert L= 66.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 33.84' / 33.00' S= 0.0127'/ Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

**Primary OutFlow** Max=0.41 cfs @ 12.13 hrs HW=34.14' TW=33.28' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.41 cfs @ 2.33 fps)

#### **Pond 28P: DI 2**



#### Summary for Pond 29P: CB 1

Inflow Area = 9,924 sf, 46.59% Impervious, Inflow Depth > 4.23" for 100-Year event

Inflow = 0.78 cfs @ 12.23 hrs, Volume= 3,500 cf

Outflow = 0.78 cfs @ 12.23 hrs, Volume= 3,500 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.78 cfs @ 12.23 hrs, Volume= 3,500 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 54.18' @ 12.23 hrs

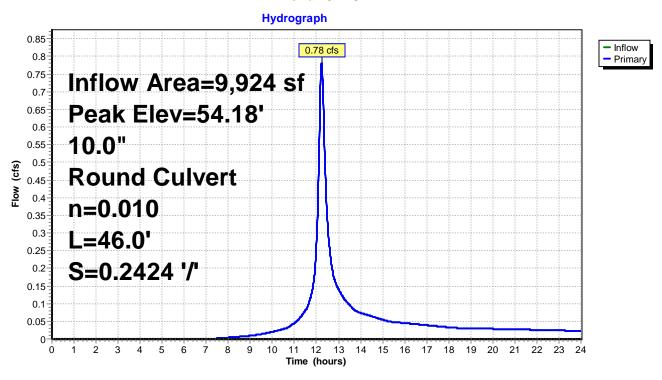
Flood Elev= 57.75'

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 53.75'
 10.0" Round Culvert L= 46.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 53.75' / 42.60' S= 0.2424 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

**Primary OutFlow** Max=0.78 cfs @ 12.23 hrs HW=54.18' TW=39.83' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.78 cfs @ 2.78 fps)

#### Pond 29P: CB 1



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#### Summary for Pond 30P: CB 3

Inflow Area = 5,166 sf, 69.53% Impervious, Inflow Depth > 5.90" for 100-Year event

Inflow = 0.76 cfs @ 12.13 hrs, Volume= 2,539 cf

Outflow = 0.07 cfs @ 14.04 hrs, Volume= 750 cf, Atten= 91%, Lag= 114.6 min

Primary = 0.07 cfs @ 14.04 hrs, Volume= 750 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 43.53' @ 14.04 hrs Surf.Area= 802 sf Storage= 1,789 cf

Flood Elev= 43.50' Surf.Area= 802 sf Storage= 1,789 cf

Plug-Flow detention time= 451.2 min calculated for 750 cf (30% of inflow) Center-of-Mass det. time= 269.9 min (1,086.1 - 816.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	36.00'	701 cf	20.83'W x 38.50'L x 3.54'H Field A
			2,841 cf Overall - 1,088 cf Embedded = 1,753 cf x 40.0% Voids
#2A	36.50'	1,088 cf	Cultec R-330XLHD x 20 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		1,789 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	39.04'	<b>8.0" Round Culvert</b> L= 268.0' RCP, groove end projecting, Ke= 0.200
			Inlet / Outlet Invert= 39.04' / 26.50' S= 0.0468 '/' Cc= 0.900 n= 0.010, Flow Area= 0.35 sf
#2	Device 1	43.04'	2.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.07 cfs @ 14.04 hrs HW=43.53' TW=27.14' (Dynamic Tailwater)

1=Culvert (Passes 0.07 cfs of 3.63 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.07 cfs @ 3.06 fps)

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# Pond 30P: CB 3 - Chamber Wizard Field A

### Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)

Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

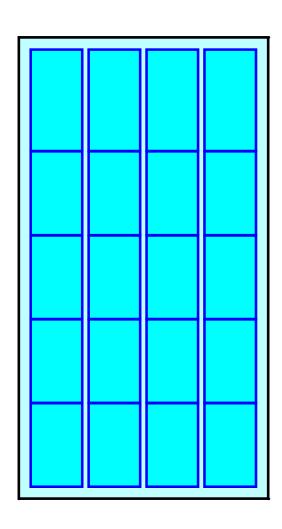
5 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 36.50' Row Length +12.0" End Stone x 2 = 38.50' Base Length 4 Rows x 52.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.83' Base Width 6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

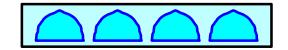
20 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 4 Rows = 1,087.8 cf Chamber Storage

2,840.7 cf Field - 1,087.8 cf Chambers = 1,752.9 cf Stone x 40.0% Voids = 701.1 cf Stone Storage

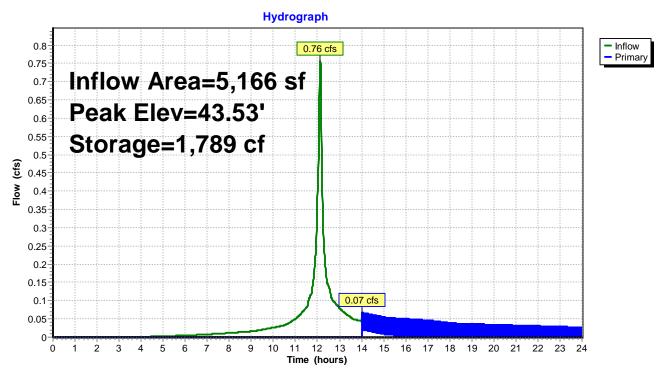
Chamber Storage + Stone Storage = 1,789.0 cf = 0.041 af Overall Storage Efficiency = 63.0%

20 Chambers 105.2 cy Field 64.9 cy Stone









#### Summary for Pond 31P: RG #3

Inflow Area = 22,968 sf, 25.66% Impervious, Inflow Depth > 2.96" for 100-Year event

Inflow = 1.23 cfs @ 12.16 hrs, Volume= 5,671 cf

Outflow = 1.23 cfs @ 12.16 hrs, Volume= 5,648 cf, Atten= 0%, Lag= 0.1 min

Primary = 1.23 cfs @ 12.16 hrs, Volume= 5,648 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.84' @ 12.16 hrs Surf.Area= 402 sf Storage= 36 cf

Flood Elev= 43.50' Surf.Area= 500 sf Storage= 244 cf

Plug-Flow detention time= 3.9 min calculated for 5,648 cf (100% of inflow)

Center-of-Mass det. time= 1.7 min (883.7 - 882.0)

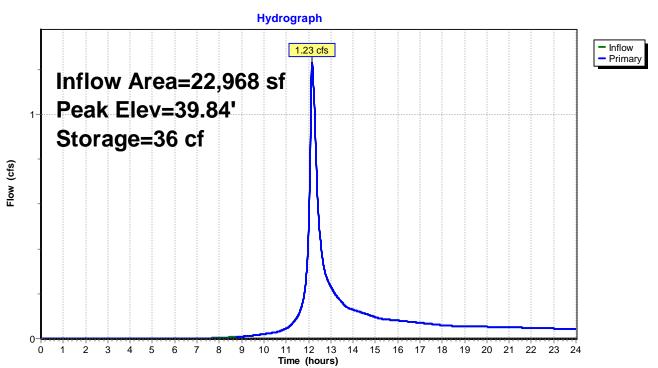
Volume	In	vert	Avail.Sto	orage	Storage D	Description			
#1	39.	.72'	2	44 cf	Custom S	Stage Data (Pris	smatic) Listed be	elow (Recalc)	
Elevation (fee		Surf.A (sc	rea q-ft)		Store :-feet)	Cum.Store (cubic-feet)			
39.7	72	1	131		0	0			
39.8	80	3	394		21	21			
40.3	30	5	500		224	244			
Device	Routing		Invert	Outle	t Devices				
#1	Primary		39.80'	65.0'	long x 1.0	' breadth Broa	d-Crested Recta	ngular Weir	

**65.0' long x 1.0' breadth Broad-Crested Rectangular Weir**Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00

Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=1.23 cfs @ 12.16 hrs HW=39.84' TW=36.78' (Dynamic Tailwater) 1=Broad-Crested Rectangular Weir (Weir Controls 1.23 cfs @ 0.52 fps)

#### Pond 31P: RG #3



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## Summary for Pond 32P: PrkCis 1

Inflow Area = 1,192 sf,100.00% Impervious, Inflow Depth > 8.05" for 100-Year event

Inflow = 0.21 cfs @ 12.13 hrs, Volume= 800 cf

Outflow = 0.01 cfs @ 14.31 hrs, Volume= 234 cf, Atten= 95%, Lag= 131.1 min

Primary = 0.01 cfs @ 14.31 hrs, Volume= 234 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 39.27' @ 14.31 hrs Surf.Area= 863 sf Storage= 586 cf

Flood Elev= 42.00' Surf.Area= 863 sf Storage= 1,733 cf

Plug-Flow detention time= 580.4 min calculated for 234 cf (29% of inflow)

Center-of-Mass det. time= 310.3 min (1,051.5 - 741.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	38.20'	689 cf	19.17'W x 45.00'L x 3.21'H Field A
			2,767 cf Overall - 1,044 cf Embedded = 1,723 cf x 40.0% Voids
#2A	38.70'	1,044 cf	Cultec R-280HD x 24 Inside #1
			Effective Size= $46.9$ "W x $26.0$ "H => $6.07$ sf x $7.00$ 'L = $42.5$ cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,733 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	39.20'	<b>4.0" Round Culvert</b> L= 100.0' RCP, mitered to conform to fill, Ke= 0.700
	-		Inlet / Outlet Invert= 39.20' / 30.00' S= 0.0920 '/' Cc= 0.900 n= 0.010, Flow Area= 0.09 sf

**Primary OutFlow** Max=0.01 cfs @ 14.31 hrs HW=39.27' TW=22.79' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.01 cfs @ 0.79 fps)

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# Pond 32P: PrkCis 1 - Chamber Wizard Field A

### Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)

Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 4 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

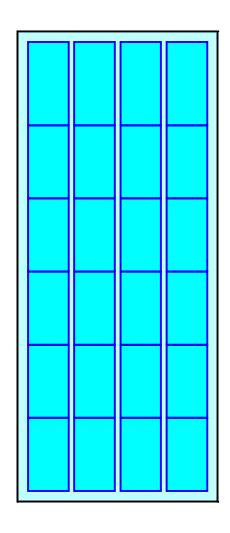
6 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 43.00' Row Length +12.0" End Stone x 2 = 45.00' Base Length 4 Rows x 47.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 19.17' Base Width 6.0" Base + 26.5" Chamber Height + 6.0" Cover = 3.21' Field Height

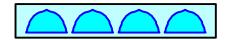
24 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 4 Rows = 1,044.3 cf Chamber Storage

2,767.2 cf Field - 1,044.3 cf Chambers = 1,722.8 cf Stone x 40.0% Voids = 689.1 cf Stone Storage

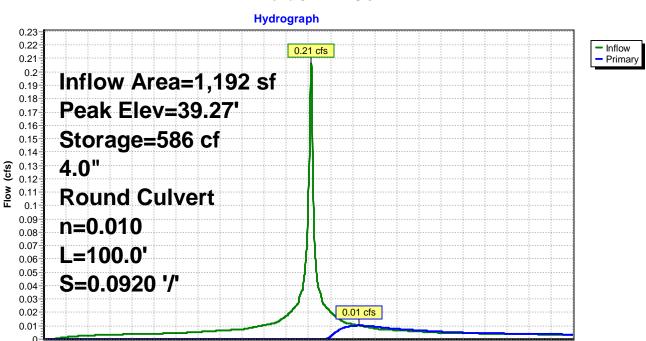
Chamber Storage + Stone Storage = 1,733.5 cf = 0.040 af Overall Storage Efficiency = 62.6%

24 Chambers 102.5 cy Field 63.8 cy Stone





#### Pond 32P: PrkCis 1



11 12 13 Time (hours)

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# Summary for Pond 33P: PrkCst 2

Inflow Area = 2,856 sf,100.00% Impervious, Inflow Depth > 8.05" for 100-Year event

Inflow = 0.49 cfs @ 12.13 hrs, Volume= 1,916 cf

Outflow = 0.09 cfs @ 12.51 hrs, Volume= 1,417 cf, Atten= 83%, Lag= 23.0 min

Primary = 0.09 cfs @ 12.51 hrs, Volume= 1,417 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 38.35' @ 12.51 hrs Surf.Area= 728 sf Storage= 990 cf

Flood Elev= 41.00' Surf.Area= 728 sf Storage= 1,459 cf

Plug-Flow detention time= 273.4 min calculated for 1,417 cf (74% of inflow)

Center-of-Mass det. time= 162.3 min (903.6 - 741.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	36.40'	585 cf	19.17'W x 38.00'L x 3.21'H Field A
			2,337 cf Overall - 874 cf Embedded = 1,462 cf x 40.0% Voids
#2A	36.90'	874 cf	Cultec R-280HD x 20 Inside #1
			Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,459 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	<b>2.0" Round Culvert</b> L= 50.0' RCP, mitered to conform to fill, Ke= 0.700
	-		Inlet / Outlet Invert= 37.40' / 34.66' S= 0.0548 '/' Cc= 0.900 n= 0.010, Flow Area= 0.02 sf

**Primary OutFlow** Max=0.09 cfs @ 12.51 hrs HW=38.35' TW=26.05' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.09 cfs @ 3.95 fps)

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# Pond 33P: PrkCst 2 - Chamber Wizard Field A

### Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)

Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 4 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

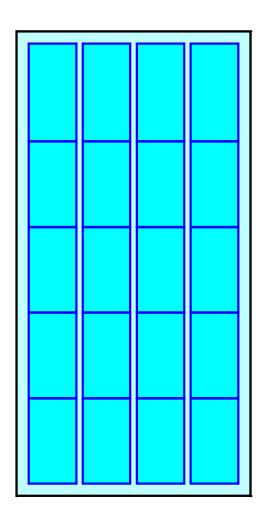
5 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 36.00' Row Length +12.0" End Stone x 2 = 38.00' Base Length 4 Rows x 47.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 19.17' Base Width 6.0" Base + 26.5" Chamber Height + 6.0" Cover = 3.21' Field Height

20 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 4 Rows = 874.3 cf Chamber Storage

2,336.7 cf Field - 874.3 cf Chambers = 1,462.4 cf Stone x 40.0% Voids = 585.0 cf Stone Storage

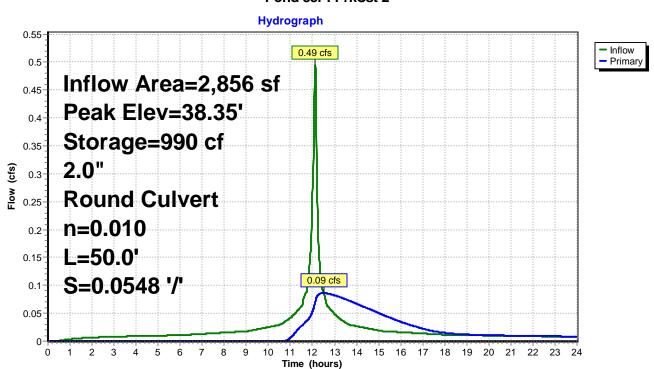
Chamber Storage + Stone Storage = 1,459.3 cf = 0.034 af Overall Storage Efficiency = 62.5%

20 Chambers 86.5 cy Field 54.2 cy Stone





#### Pond 33P: PrkCst 2



#### Summary for Pond 34P: CC Cisterns

Inflow Area = 8,964 sf,100.00% Impervious, Inflow Depth > 8.05" for 100-Year event

Inflow = 1.55 cfs @ 12.13 hrs, Volume= 6,013 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 604 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 604 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 45.47' @ 24.00 hrs Surf.Area= 1,362 sf Storage= 5,409 cf

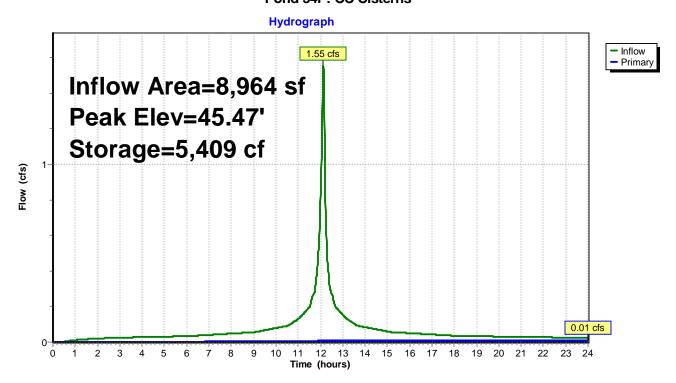
Plug-Flow detention time= 734.3 min calculated for 604 cf (10% of inflow)

Center-of-Mass det. time= 252.5 min (993.8 - 741.3)

Volume	ln۱	ert Ava	ail.Storage	Storage D	Description	
#1	41.	50'	5,448 cf	Custom S	Stage Data (Pi	rismatic) Listed below (Recalc) x 6
Elevation	on	Surf.Area		:Store	Cum.Store	
(fee	et)	(sq-ft)	(cub	ic-feet)	(cubic-feet)	
41.	50	227		0	0	
45.	50	227		908	908	
Device	Routing	In	vert Outl	et Devices		
#1	#1 Primary 41.50' <b>0.2" V</b>		Vert. Orific	e/Grate X 6	rows with 1.0" cc spacing C= 0.600	

**Primary OutFlow** Max=0.01 cfs @ 24.00 hrs HW=45.47' TW=21.95' (Dynamic Tailwater) **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 9.33 fps)

# Pond 34P: CC Cisterns



# Summary for Pond 35P: DMH 2

Inflow Area = 4,009 sf, 28.16% Impervious, Inflow Depth > 4.01" for 100-Year event

Inflow = 0.41 cfs @ 12.13 hrs, Volume= 1,341 cf

Outflow = 0.41 cfs @ 12.13 hrs, Volume= 1,341 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.41 cfs @ 12.13 hrs, Volume= 1,341 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

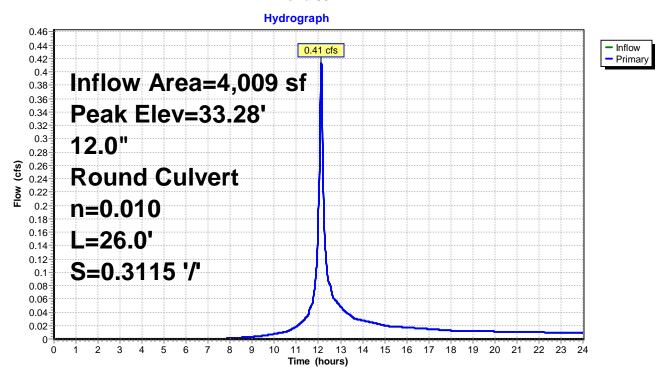
Peak Elev= 33.28' @ 12.13 hrs

Flood Elev= 35.00'

DeviceRoutingInvertOutlet Devices#1Primary33.00'12.0" Round Culvert L= 26.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 33.00' / 24.90' S= 0.3115 '/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

**Primary OutFlow** Max=0.41 cfs @ 12.13 hrs HW=33.28' TW=27.64' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.41 cfs @ 2.26 fps)

### Pond 35P: DMH 2



# Summary for Pond 36P: DMH 3

Inflow Area = 35,147 sf, 33.82% Impervious, Inflow Depth > 4.06" for 100-Year event

Inflow = 2.93 cfs @ 12.14 hrs, Volume= 11,880 cf

Outflow = 2.93 cfs @ 12.14 hrs, Volume= 11,880 cf, Atten= 0%, Lag= 0.0 min

Primary = 2.93 cfs @ 12.14 hrs, Volume= 11,880 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

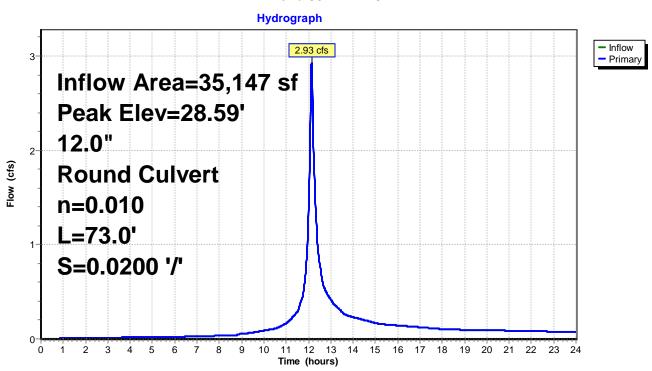
Peak Elev= 28.59' @ 12.51 hrs

Flood Elev= 34.00'

DeviceRoutingInvertOutlet Devices#1Primary26.36'12.0" Round Culvert L= 73.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 26.36' / 24.90' S= 0.0200'/ Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

**Primary OutFlow** Max=2.92 cfs @ 12.14 hrs HW=27.73' TW=27.19' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 2.92 cfs @ 3.72 fps)

### Pond 36P: DMH 3



# Summary for Pond 37P: DMH 4

Inflow Area = 259,207 sf, 15.59% Impervious, Inflow Depth > 2.62" for 100-Year event

Inflow = 4.38 cfs @ 12.14 hrs, Volume= 56,697 cf

Outflow = 4.38 cfs @ 12.14 hrs, Volume= 56,697 cf, Atten= 0%, Lag= 0.0 min

Primary = 4.38 cfs @ 12.14 hrs, Volume= 56,697 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

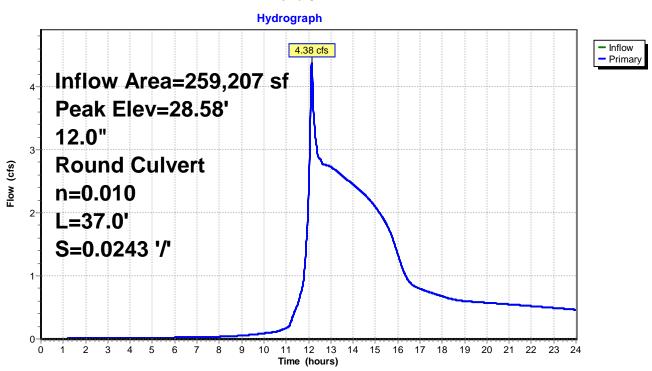
Peak Elev= 28.58' @ 12.51 hrs

Flood Elev= 34.50'

DeviceRoutingInvertOutlet Devices#1Primary24.90'12.0" Round Culvert L= 37.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 24.90' / 24.00' S= 0.0243 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

**Primary OutFlow** Max=4.37 cfs @ 12.14 hrs HW=27.22' TW=26.31' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 4.37 cfs @ 5.57 fps)

### Pond 37P: DMH 4



# Summary for Pond 38P: DMH 5

Inflow Area = 328,973 sf, 22.24% Impervious, Inflow Depth > 3.05" for 100-Year event

Inflow = 6.57 cfs @ 12.35 hrs, Volume= 83,484 cf

Outflow = 6.57 cfs @ 12.35 hrs, Volume= 83,484 cf, Atten= 0%, Lag= 0.0 min

Primary = 6.57 cfs @ 12.35 hrs, Volume= 83,484 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

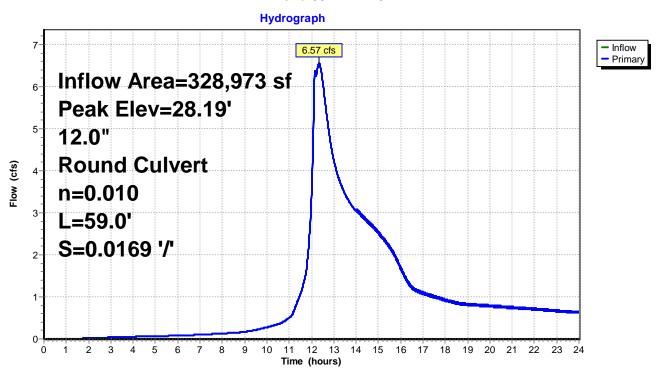
Peak Elev= 28.19' @ 12.51 hrs

Flood Elev= 33.00'

DeviceRoutingInvertOutlet Devices#1Primary24.00'12.0" Round Culvert L= 59.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 24.00' / 23.00' S= 0.0169 '/' Cc= 0.900 n= 0.010, Flow Area= 0.79 sf

**Primary OutFlow** Max=6.56 cfs @ 12.35 hrs HW=27.81' TW=25.32' (Dynamic Tailwater) **1=Culvert** (Outlet Controls 6.56 cfs @ 8.36 fps)

### Pond 38P: DMH 5



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## Summary for Pond 39P: PrkCis 3

Inflow Area = 4,157 sf,100.00% Impervious, Inflow Depth > 8.05" for 100-Year event

Inflow = 0.72 cfs @ 12.13 hrs, Volume= 2,788 cf

Outflow = 0.02 cfs @ 17.10 hrs, Volume= 423 cf, Atten= 97%, Lag= 298.5 min

Primary = 0.02 cfs @ 17.10 hrs, Volume= 423 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 37.49' @ 17.10 hrs Surf.Area= 1,226 sf Storage= 2,375 cf

Flood Elev= 39.00' Surf.Area= 1,226 sf Storage= 2,485 cf

Plug-Flow detention time= 854.6 min calculated for 423 cf (15% of inflow)

Center-of-Mass det. time= 445.9 min (1,187.2 - 741.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	967 cf	23.58'W x 52.00'L x 3.21'H Field A
			3,934 cf Overall - 1,518 cf Embedded = 2,417 cf x 40.0% Voids
#2A	35.00'	1,518 cf	Cultec R-280HD x 35 Inside #1
			Effective Size= $46.9$ "W x $26.0$ "H => $6.07$ sf x $7.00$ 'L = $42.5$ cf
			Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
			Row Length Adjustment= +1.00' x 6.07 sf x 5 rows
		2,485 cf	Total Available Storage

#### Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	37.40'	<b>6.0" Round Culvert</b> L= 50.0' RCP, mitered to conform to fill, Ke= 0.700
	•		Inlet / Outlet Invert= 37.40' / 32.46' S= 0.0988 '/' Cc= 0.900 n= 0.010, Flow Area= 0.20 sf
#2	Primary	37.80'	80.0' long x 10.0' breadth Broad-Crested Rectangular Weir
	-		Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.02 cfs @ 17.10 hrs HW=37.49' TW=22.10' (Dynamic Tailwater)

1=Culvert (Inlet Controls 0.02 cfs @ 0.88 fps)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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# Pond 39P: PrkCis 3 - Chamber Wizard Field A

## Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)

Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 5 rows

47.0" Wide + 6.0" Spacing = 53.0" C-C Row Spacing

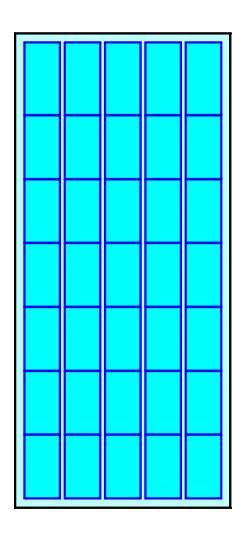
7 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 50.00' Row Length +12.0" End Stone x 2 = 52.00' Base Length 5 Rows x 47.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 23.58' Base Width 6.0" Base + 26.5" Chamber Height + 6.0" Cover = 3.21' Field Height

35 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 5 Rows = 1,517.9 cf Chamber Storage

3,934.5 cf Field - 1,517.9 cf Chambers = 2,416.5 cf Stone x 40.0% Voids = 966.6 cf Stone Storage

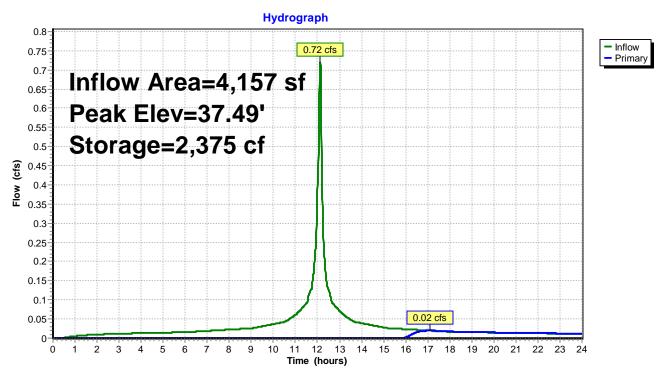
Chamber Storage + Stone Storage = 2,484.6 cf = 0.057 af Overall Storage Efficiency = 63.1%

35 Chambers 145.7 cy Field 89.5 cy Stone





## Pond 39P: PrkCis 3



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## Summary for Pond 40P: PrkCis 4

Inflow Area = 4,079 sf,100.00% Impervious, Inflow Depth > 8.05" for 100-Year event

Inflow = 0.71 cfs @ 12.13 hrs, Volume= 2,736 cf

Outflow = 0.08 cfs @ 12.88 hrs, Volume= 1,071 cf, Atten= 89%, Lag= 45.2 min

Primary = 0.08 cfs @ 12.88 hrs, Volume= 1,071 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 32.96' @ 12.88 hrs Surf.Area= 1,094 sf Storage= 1,768 cf

Flood Elev= 40.00' Surf.Area= 1,094 sf Storage= 2,453 cf

Plug-Flow detention time= 447.6 min calculated for 1,071 cf (39% of inflow) Center-of-Mass det. time= 236.2 min ( 977.5 - 741.3 )

Volume	Invert	Avail.Storage	Storage Description
#1A	30.67'	947 cf	20.83'W x 52.50'L x 3.54'H Field A
			3,874 cf Overall - 1,505 cf Embedded = 2,369 cf x 40.0% Voids
#2A	31.17'	1,505 cf	Cultec R-330XLHD x 28 Inside #1
			Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
			Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
			Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		2,453 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	32.75'	<b>4.0" Round Culvert</b> L= 60.0' RCP, mitered to conform to fill, Ke= 0.700
	-		Inlet / Outlet Invert= 32.75' / 32.26' S= 0.0082 '/' Cc= 0.900 n= 0.010. Flow Area= 0.09 sf

**Primary OutFlow** Max=0.08 cfs @ 12.88 hrs HW=32.96' TW=26.01' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.08 cfs @ 1.36 fps)

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# Pond 40P: PrkCis 4 - Chamber Wizard Field A

## Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)

Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

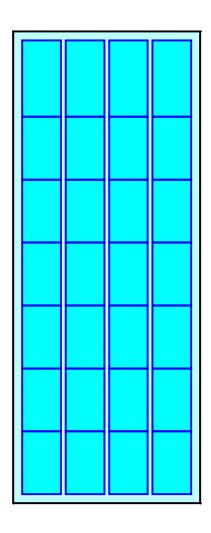
7 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 50.50' Row Length +12.0" End Stone x 2 = 52.50' Base Length 4 Rows x 52.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.83' Base Width 6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

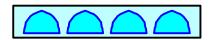
28 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 4 Rows = 1,505.1 cf Chamber Storage

3,873.7 cf Field - 1,505.1 cf Chambers = 2,368.6 cf Stone x 40.0% Voids = 947.4 cf Stone Storage

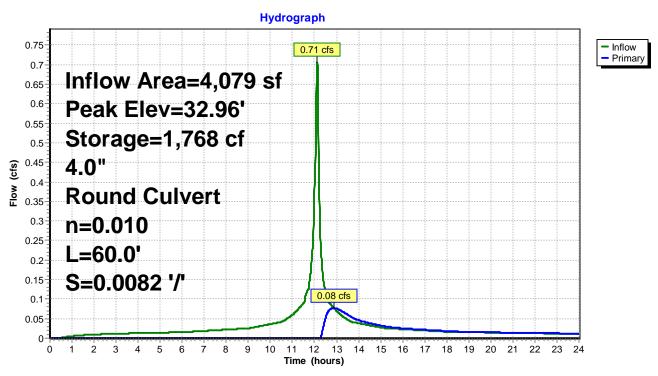
Chamber Storage + Stone Storage = 2,452.5 cf = 0.056 af Overall Storage Efficiency = 63.3%

28 Chambers 143.5 cy Field 87.7 cy Stone









# Summary for Pond 41P: CB 5

Inflow Area = 3,890 sf, 1.80% Impervious, Inflow Depth > 2.54" for 100-Year event

Inflow = 0.24 cfs @ 12.14 hrs, Volume= 823 cf

Outflow = 0.24 cfs @ 12.14 hrs, Volume= 823 cf, Atten= 0%, Lag= 0.0 min

Primary = 0.24 cfs @ 12.14 hrs, Volume= 823 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 29.17' @ 12.14 hrs

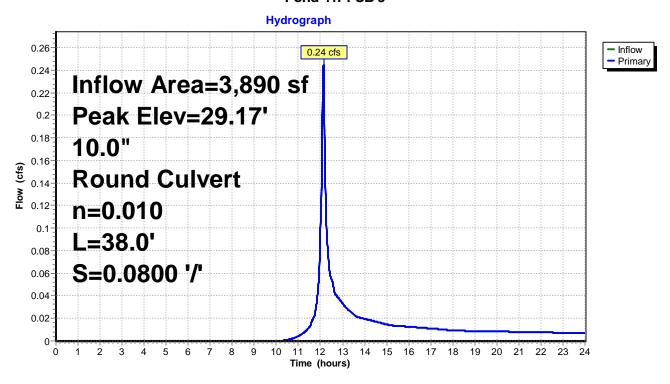
Flood Elev= 31.00'

 Device
 Routing
 Invert
 Outlet Devices

 #1
 Primary
 28.94'
 10.0" Round Culvert L= 38.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 28.94' / 25.90' S= 0.0800 '/' Cc= 0.900 n= 0.010, Flow Area= 0.55 sf

**Primary OutFlow** Max=0.24 cfs @ 12.14 hrs HW=29.17' TW=27.15' (Dynamic Tailwater) **1=Culvert** (Inlet Controls 0.24 cfs @ 2.03 fps)

## **Pond 41P: CB 5**



## Summary for Pond 43P: CE Cisterns

Inflow Area = 5,923 sf,100.00% Impervious, Inflow Depth > 8.05" for 100-Year event

Inflow = 1.03 cfs @ 12.13 hrs, Volume= 3,973 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 415 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 415 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 46.92' @ 24.00 hrs Surf.Area= 908 sf Storage= 3,558 cf

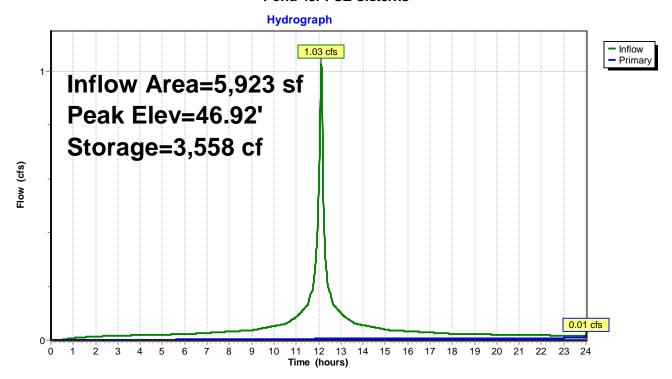
Plug-Flow detention time= 714.1 min calculated for 415 cf (10% of inflow)

Center-of-Mass det. time= 238.3 min ( 979.5 - 741.3 )

Volume	Inv	ert Ava	il.Storage	Storage [	Description	
#1	43.	00'	3,632 cf	Custom S	Stage Data (Pi	rismatic) Listed below (Recalc) x 4
Elevation	on	Surf.Area	Inc	:Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
43.0	00	227		0	0	
47.0	00	227		908	908	
Device	Routing	In	vert Outle	et Devices		
#1	Primary	43	.00' <b>0.2"</b>	Vert. Orific	e/Grate X 4	rows with 1.0" cc spacing C= 0.600

**Primary OutFlow** Max=0.01 cfs @ 24.00 hrs HW=46.92' TW=21.95' (Dynamic Tailwater) **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 9.37 fps)

## Pond 43P: CE Cisterns



# Summary for Pond 44P: SR Cisterns

Inflow Area = 7,823 sf,100.00% Impervious, Inflow Depth > 8.05" for 100-Year event

Inflow = 1.36 cfs @ 12.13 hrs, Volume= 5,248 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 526 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 526 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 50.16' @ 24.00 hrs Surf.Area= 1,135 sf Storage= 4,722 cf

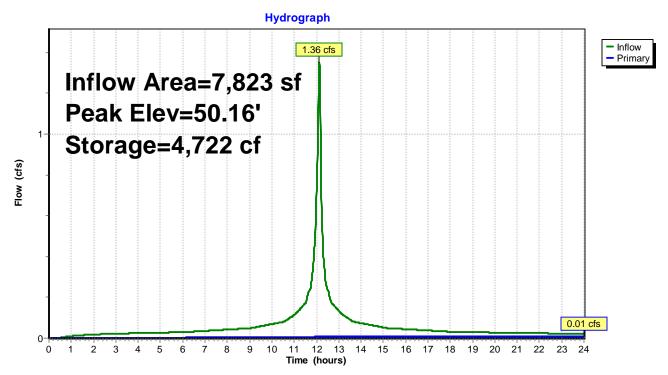
Plug-Flow detention time= 726.6 min calculated for 526 cf (10% of inflow)

Center-of-Mass det. time= 244.3 min (985.6 - 741.3)

Volume	Inv	ert Ava	il.Storage	Storage	Description	
#1	46.	00'	5,675 cf	Custom	Stage Data (Pr	ismatic) Listed below (Recalc) x 5
Elevation	on	Surf.Area	Inc	:Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
46.0	00	227		0	0	
51.0	00	227		1,135	1,135	
Device	Routing	ln	vert Outle	et Devices	3	
#1	Primary	46	.00' <b>0.2"</b>	Vert. Orif	ice/Grate X 5 i	ows with 1.0" cc spacing C= 0.600

**Primary OutFlow** Max=0.01 cfs @ 24.00 hrs HW=50.16' TW=21.95' (Dynamic Tailwater) **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 9.61 fps)

# Pond 44P: SR Cisterns



# **Summary for Pond 45P: HACisterns**

Inflow Area = 10,118 sf,100.00% Impervious, Inflow Depth > 8.05" for 100-Year event

Inflow = 1.75 cfs @ 12.13 hrs, Volume= 6,787 cf

Outflow = 0.01 cfs @ 24.00 hrs, Volume= 649 cf, Atten= 99%, Lag= 712.3 min

Primary = 0.01 cfs @ 24.00 hrs, Volume= 649 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 48.51' @ 24.00 hrs Surf.Area= 1,362 sf Storage= 6,138 cf

Plug-Flow detention time= 738.2 min calculated for 649 cf (10% of inflow)

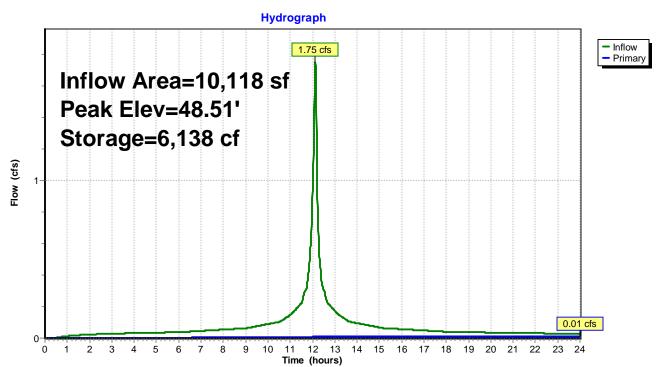
Center-of-Mass det. time= 248.8 min (990.0 - 741.3)

Volume	Inv	ert Ava	il.Storage	Storage	Description	
#1	44.	00'	6,810 cf	Custom	Stage Data (Pr	smatic) Listed below (Recalc) x 6
Elevation	on	Surf.Area	Inc	:Store	Cum.Store	
(fee	et)	(sq-ft)	(cubi	c-feet)	(cubic-feet)	
44.0	00	227		0	0	
49.0	00	227		1,135	1,135	
Device	Routing	In	vert Outle	et Devices	<b>;</b>	
#1	Primary	44	.00' <b>0.2"</b>	Vert. Orif	ice/Grate X6 r	ows with 1.0" cc spacing C= 0.600

Primary OutFlow Max=0.01 cfs @ 24.00 hrs HW=48.51' TW=21.95' (Dynamic Tailwater)

1=Orifice/Grate (Orifice Controls 0.01 cfs @ 9.97 fps)

## Pond 45P: HACisterns



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## Summary for Pond 46P: CB 4

Inflow Area = 400,830 sf, 31.77% Impervious, Inflow Depth > 2.97" for 100-Year event

Inflow = 8.34 cfs @ 12.15 hrs, Volume = 99,059 cf

Outflow = 6.28 cfs @ 12.68 hrs, Volume= 98,827 cf, Atten= 25%, Lag= 31.7 min

Primary = 6.28 cfs @ 12.68 hrs, Volume= 98,827 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 26.29' @ 12.68 hrs Surf.Area= 1,297 sf Storage= 5,143 cf

Plug-Flow detention time= 7.4 min calculated for 98,786 cf (100% of inflow)

Center-of-Mass det. time= 6.1 min (903.6 - 897.5)

Volume	Invert	Avail.Storage	Storage Description
#1	27.80'	23,576 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
#2A	21.50'	259 cf	21.79'W x 59.50'L x 6.00'H Field A
			7,780 cf Overall - 7,131 cf Embedded = 648 cf x 40.0% Voids
#3A	22.00'	5,694 cf	StormTrap SingleTrap 5-0 x 3 Inside #2
			Inside= 101.7"W x 60.0"H => 38.33 sf x 15.40'L = 590.2 cf
			Outside= 101.7"W x 66.0"H => 46.64 sf x 15.40'L = 718.0 cf
			8.48' x 46.19' Core + 6.66' Border = 21.79' x 59.50' System

29,529 cf Total Available Storage

### Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.80	4	0	0
28.00	1,704	171	171
30.00	4,071	5,775	5,946
32.00	13,559	17,630	23,576

Device	Routing	Invert	Outlet Devices
#1	Primary	21.50'	<b>12.0" Round Culvert</b> L= 141.0' RCP, sq.cut end projecting, Ke= 0.500
			Inlet / Outlet Invert= 21.50' / 19.40' S= 0.0149 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

**Primary OutFlow** Max=6.28 cfs @ 12.68 hrs HW=26.29' TW=0.00' (Dynamic Tailwater) **1=Culvert** (Barrel Controls 6.28 cfs @ 8.00 fps)

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# Pond 46P: CB 4 - Chamber Wizard Field A

## Chamber Model = StormTrap SingleTrap 5-0 (StormTrap SingleTrap® 5'-0" tall Type II + IV)

Inside= 101.7"W x 60.0"H => 38.33 sf x 15.40'L = 590.2 cf Outside= 101.7"W x 66.0"H => 46.64 sf x 15.40'L = 718.0 cf

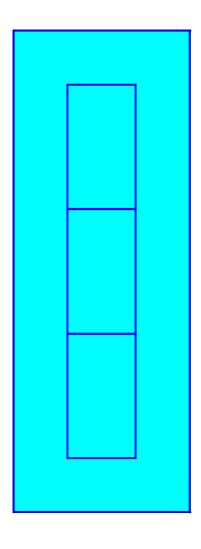
3 Chambers/Row x 15.40' Long = 46.19' Row Length +79.9" Border x 2 = 59.50' Base Length 1 Rows x 101.7" Wide + 79.9" Side Border x 2 = 21.79' Base Width 6.0" Base + 66.0" Chamber Height = 6.00' Field Height

3 Chambers  $\times$  590.2 cf + 3,923.6 cf Border = 5,694.1 cf Chamber Storage 3 Chambers  $\times$  718.0 cf + 4,977.3 cf Border = 7,131.3 cf Displacement

7,779.6 cf Field - 7,131.3 cf Chambers = 648.3 cf Stone x 40.0% Voids = 259.3 cf Stone Storage

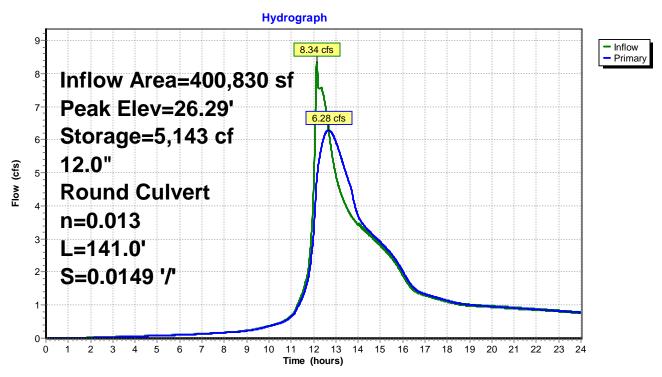
Chamber Storage + Stone Storage = 5,953.5 cf = 0.137 af Overall Storage Efficiency = 76.5%

3 Chambers (plus border) 288.1 cy Field 24.0 cy Stone





## Pond 46P: CB 4



## Summary for Pond 47P: HW

Inflow Area = 385,242 sf, 8.99% Impervious, Inflow Depth > 4.17" for 100-Year event

Inflow = 8.54 cfs @ 12.13 hrs, Volume= 134,030 cf

Outflow = 6.64 cfs @ 12.22 hrs, Volume= 134,016 cf, Atten= 22%, Lag= 5.5 min

Primary = 6.64 cfs @ 12.22 hrs, Volume= 134,016 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3 Peak Elev= 26.97' @ 12.22 hrs Surf.Area= 1,513 sf Storage= 1,324 cf

Plug-Flow detention time= 0.9 min calculated for 134,016 cf (100% of inflow)

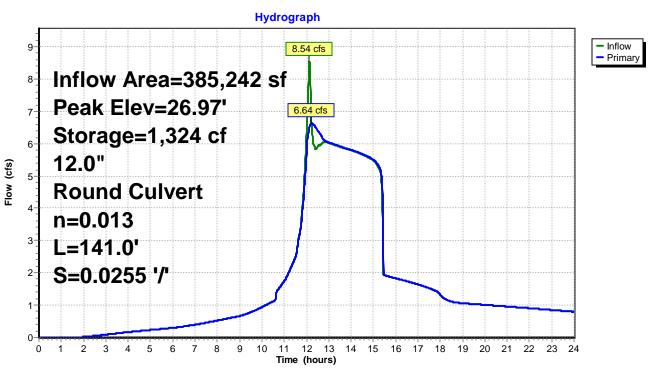
Center-of-Mass det. time= 0.9 min (863.4 - 862.5)

Volume	Inve	ert Avai	l.Storage	Storage	Description				
#1	23.0	00'	75,612 cf	Custom	Stage Data (Prisi	matic) Listed below	w (Recalc)		
Elevatio		Surf.Area		.Store c-feet)	Cum.Store (cubic-feet)				
23.0	/	(sq-ft) 10	(Cubic	0	(Cubic-leet)				
26.0		290		450	450				
28.0		2,812		3,102	3,552				
32.0	00	33,218	7	2,060	75,612				
Device	Routing	lnv	ert Outle	et Devices					
#1	Primary	23.				RCP, sq.cut en	1 , 0,	e= 0.500	

Inlet / Outlet Invert= 23.00' / 19.40' S= 0.0255 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=6.64 cfs @ 12.22 hrs HW=26.97' TW=0.00' (Dynamic Tailwater) —1=Culvert (Barrel Controls 6.64 cfs @ 8.45 fps)

# Pond 47P: HW



## Summary for Pond 48P: YW Cistern

Inflow Area = 2,136 sf,100.00% Impervious, Inflow Depth > 8.05" for 100-Year event

Inflow = 0.37 cfs @ 12.13 hrs, Volume= 1,433 cf

Outflow = 0.01 cfs @ 17.08 hrs, Volume= 552 cf, Atten= 97%, Lag= 296.8 min

Primary = 0.01 cfs @ 17.08 hrs, Volume= 552 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 55.41' @ 17.08 hrs Surf.Area= 392 sf Storage= 946 cf

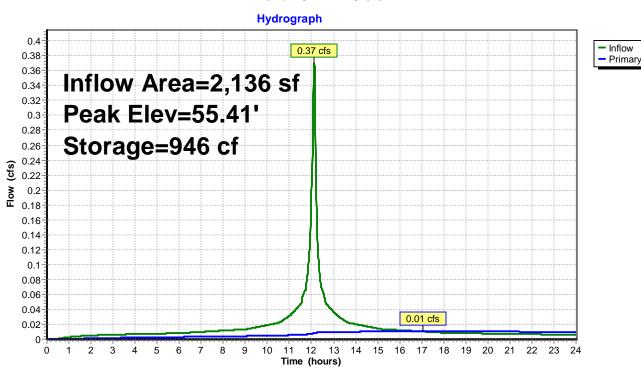
Plug-Flow detention time= 423.1 min calculated for 552 cf (39% of inflow)

Center-of-Mass det. time= 208.6 min ( 949.9 - 741.3 )

Volume	Inv	vert Ava	il.Storage	Storage I	Description	
#1	53.	00'	1,176 cf	Custom	Stage Data (Pr	ismatic) Listed below (Recalc)
Elevation	on	Surf.Area	Inc	c.Store	Cum.Store	
(fee	et)	(sq-ft)	(cub	ic-feet)	(cubic-feet)	
53.0	00	392		0	0	
56.0	00	392		1,176	1,176	
Device	Routing	In	vert Outl	et Devices		
#1	Primary	53	.00' <b>0.5</b> "	Vert. Orific	ce/Grate C=	0.600

**Primary OutFlow** Max=0.01 cfs @ 17.08 hrs HW=55.41' TW=22.10' (Dynamic Tailwater) **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 7.45 fps)

## Pond 48P: YW Cistern



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# Summary for Link 1L: Total Exist

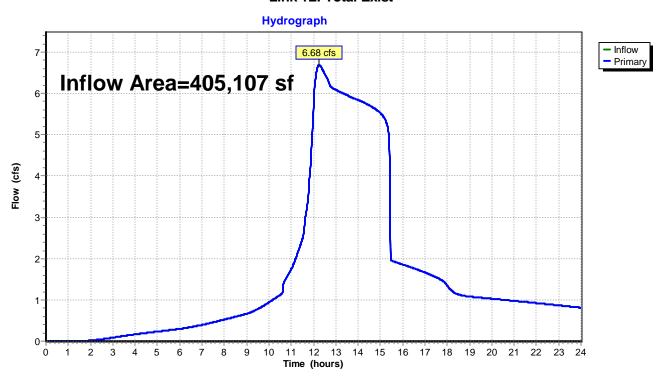
405,107 sf, 8.55% Impervious, Inflow Depth > 4.00" for 100-Year event 6.68 cfs @ 12.25 hrs, Volume= 135,077 cf Inflow Area =

Inflow

Primary 6.68 cfs @ 12.25 hrs, Volume= 135,077 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

### **Link 1L: Total Exist**



# Summary for Link 20L: Total POST

Inflow Area = 405,107 sf, 31.55% Impervious, Inflow Depth > 2.94" for 100-Year event

Inflow = 6.32 cfs @ 12.67 hrs, Volume= 99,387 cf

Primary = 6.32 cfs @ 12.67 hrs, Volume= 99,387 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

## Link 20L: Total POST

