
STORMWATER POLLUTION PREVENTION PLAN

Volkswagen of Newburgh

Route 17K

Town of Newburgh, Orange County, New York

*Contract Vendee/
Operator:*

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JMC Project 13021

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JOHN MEYER CONSULTING, PC SITE PLANS

<u>Dwg. No.</u>	<u>Title</u>	<u>Rev. Date</u>
SP-1	Cover Sheet	03/21/2014
SP-2	Existing Conditions/Demolition Plan	03/21/2014
SP-3	Layout Plan	03/21/2014
SP-4	Grading Plan	03/21/2014
SP-5	Utilities Plan	03/21/2014
SP-6	Sediment & Erosion Control Plan	03/21/2014
SP-7	Landscaping Plan	03/21/2014
SP-9	Construction Details	03/21/2014
SP-10	Construction Details	03/21/2014
SP-11	Construction Details	03/21/2014
SP-12	Construction Details	03/21/2014
SP-13	Construction Details	03/21/2014
SP-14	Construction Details	03/21/2014
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I. INTRODUCTION

This Stormwater Pollution Prevention Plan has been prepared for the 5.02 acre Volkswagen of Newburgh site, located in the Town of Newburgh, Orange County, New York (hereinafter referred to as the "Site"). The site is bordered by NYS Route 17K to the south and Mulbury Lane (private road) to the west. The development has been designed in accordance with the following:

- Requirements of the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-10-001, effective January 29, 2010.
- Chapter 157 "Stormwater Management" of the Town of Newburgh Zoning Code.

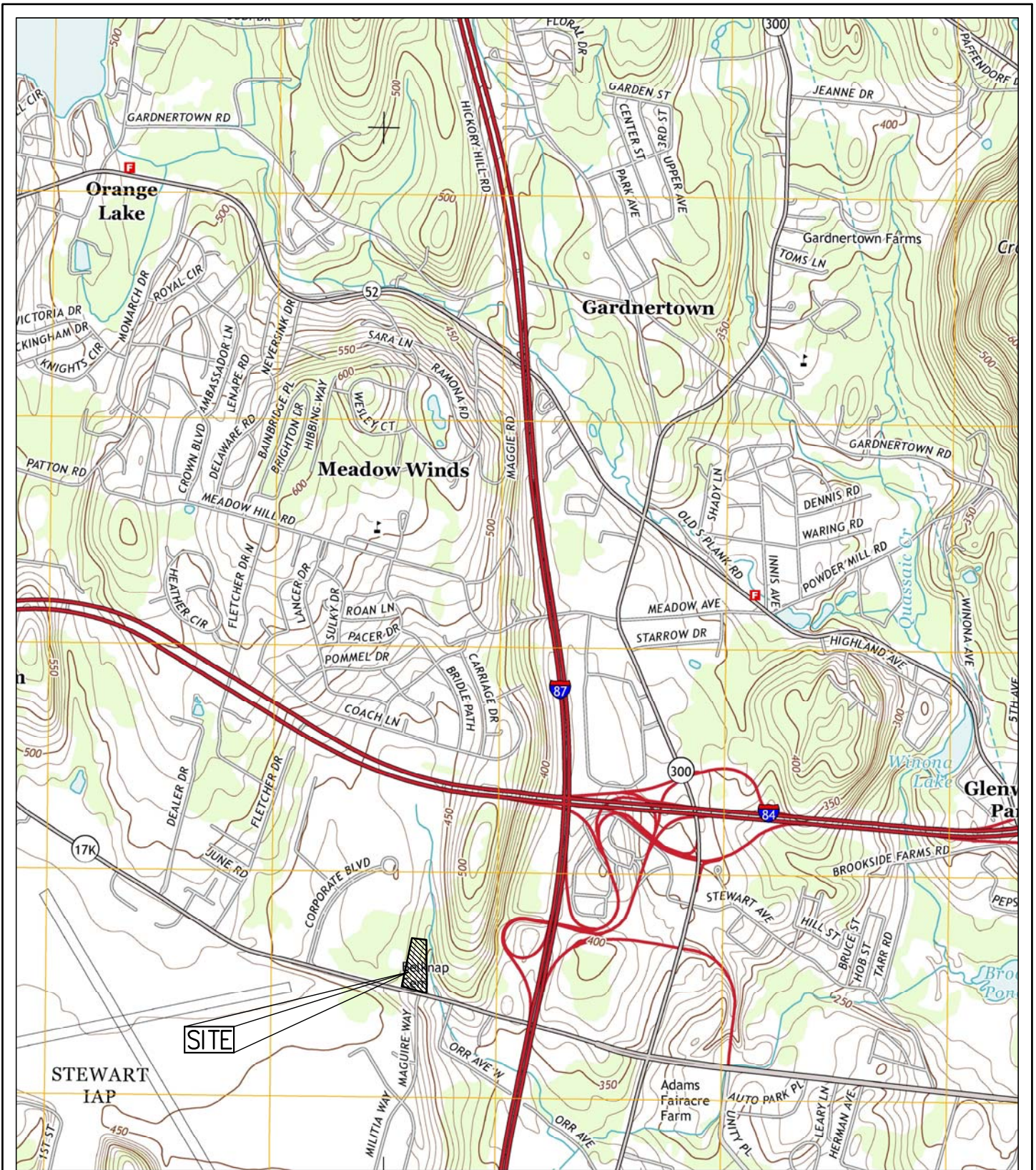
The existing parcel consists of a two story residential home, two sheds and concrete pavement located in the southern portion of the property. The northern portion of the property consists of grass and some wooded areas. Route 7 Cars, LLC proposes to construct a Sales/Service building with associated driveway, landscaping and parking areas for vehicle servicing, customers, storage and display. The site will be constructed in two phases. However, the stormwater analysis is prepared for a complete build out condition.

II. STORMWATER MANAGEMENT PLANNING

In order to be eligible for coverage under the NYSDEC SPDES General Permit No. GP-0-10-001 for Stormwater Discharges from Construction Activities, the Stormwater Pollution Prevention Plan (SWPPP) includes stormwater management practices (SMP's) from the publication "New York State Stormwater Management Design Manual," last revised August 2010.

A Stormwater Pollution Prevention Plan has been prepared for this project because it is a construction activity that involves soil disturbances of more than one acre of land.

The proposed stormwater facilities have been designed such that the quantity and quality of stormwater runoff during and after construction are not adversely altered or are enhanced when compared to pre-development conditions.

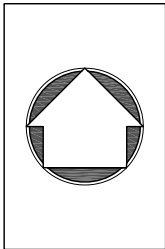


VOLKSWAGEN OF NEWBURGH
 ROUTE 17K TOWN OF NEWBURGH

USGS MAP

DATE: 03/21/2014 JMC PROJECT: 13021

FIGURE: 1



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Based on the GIS information provided by the website of the New York State Office of Parks, Recreation and Historic Places, the site does not contain, nor is it immediately adjacent to any properties listed on the State or National Register of Historic Places.

The Five Step Process for Stormwater Site Planning and Practice Selection

Stormwater management using green infrastructure is summarized in the five step process described below. The five step process was adhered to when developing this SWPPP. Information is provided in this SWPPP which documents compliance with the required process as follows:

Step 1: Site Planning

Implement planning practices that protect natural resources and utilize the hydrology of the site. Strong consideration must be given to reducing impervious cover to aid in the preservation of natural resources including protecting natural areas, avoiding sensitive areas and minimizing grading and soil disturbance.

Step 2: Determine Water Quality Treatment Volume (WQv)

Determine the required WQv for the site based on the site layout, impervious areas and sub-catchments. This initial calculation of WQv will have to be revised after green infrastructure techniques are applied. The following method has been used to calculate the WQv.

- **90% Rule** - According to the New York State Stormwater Design Manual, Section 4.1, the water quality volume is determined from the 90% rule. The method is based on 90% of the average annual stormwater runoff volume which must be provided due to impervious surfaces. The Water Quality Volume (denoted as the WQv) is designed to improve water quality sizing to capture and treat 90% of the average annual stormwater runoff volume. The WQv is directly related to the amount of impervious cover created at a site. The average rainfall storm depth for 90% of storms in New York State in one year

is used to calculate a volume of runoff. The rainfall depth depends on the location of the site within the state. From this depth of rainfall, the required water quality volume is calculated.

As per the Town of Newburgh, 110% of the water quality volume calculated above shall be provided.

Step 3: Runoff Reduction Volumes (RRv) by Applying Green Infrastructure Techniques and Standard SMP's

RRv is required for this project since it is a new development.

Green infrastructure techniques or standard SMP's with RRv capacity can potentially reduce the required WQv by incorporating combinations of green infrastructure techniques and standard SMP's within each drainage area on the site.

Green infrastructure techniques are grouped into two categories:

- Practices resulting in a reduction of contributing area such as vegetated swale.
- Practices resulting in a reduction of contributing volume such as infiltration practice.

Apply a combination of green infrastructure techniques and standard SMPs with RRv capacity to provide 100% of the WQv calculated in Step 2. If the RRv calculated in this step is greater than or equal to the WQv in Step 2, the RRv requirement has been met and Step 4 can be skipped. If the RRv provided cannot meet or exceed 100% of the WQv, the project must, at a minimum, reduce a percentage of the runoff from impervious areas to be constructed on the site. The percent reduction is based on the Hydrologic Soil Group(s) (HSG) of the site and is defined as Specific Reduction Factor (S).

The Minimum RRv capacity required must be provided by green infrastructure techniques to verify that the RRv requirement has been met. The RRv that is provided by the green

infrastructure techniques can then be subtracted from the Total Required WQv that must be provided by the SMP's.

Step 4: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

Apply the standard SMP's to meet additional water quality volume requirements that cannot be addressed by applying the green infrastructure techniques. The standard SMP's with RRv capacity must be implemented to verify that the RRv requirement has been met.

- **Infiltration Practices** – A stormwater surface infiltration basin is proposed to treat and retain runoff from the site. This practice is located in an area where the groundwater elevation is acceptable to provide the required separation. According to Section 3.6 of the Design Manual, 90% of the WQv provided by an Infiltration Practice can be applied towards meeting the RRv criteria.

Step 5: Apply Volume and Peak Rate Control Practices to Meet Water Quantity Requirements

The Channel Protection Volume (CPv), Overbank Flood Control (Qp) and Extreme Flood Control (Qf) must be met for the plan to be completed. This is accomplished by using practices such as infiltration basins to meet water quantity requirements. The following standards must be met:

1. Stream Channel Protection (CPv)

Stream Channel Protection Volume Requirements (CPv) are designed to protect stream channels from erosion. In New York State this goal is accomplished by providing 24-hour extended detention of the one-year, 24-hour storm event, remained from runoff reduction. Reduction of runoff for meeting stream channel protection objectives, where site conditions allow, is encouraged and the volume reduction achieved through green infrastructure can be deducted from CPv. Trout waters may be exempted from the 24-hour ED requirement, with only 12 hours of extended detention required to meet this

criterion. Detention time may be calculated using either a center of mass method or plug flow calculation method.

- CPv volume is achieved at a site through green infrastructure and infiltration systems.

2. Overbank Flood (Qp) which is the 10 year storm.

Overbank control requires storage to attenuate the post development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates.

The overbank flood control requirement (Qp) does not apply in certain conditions, including:

- The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams.
- A downstream analysis reveals that overbank control is not needed.
- If redevelopment results in no increase in impervious area or changes to hydrology that increase the discharge rate from the site, the ten year criteria does not apply.

3. Extreme Storm (Qf) which is the 100 year storm.

100 Year Control requires storage to attenuate the post development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates.

The 100-year storm control requirement can be waived if:

- The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams.

- Development is prohibited within the ultimate 100-year floodplain
- A downstream analysis reveals that 100-year control is not needed.
- If redevelopment results in no increase in impervious area or changes to hydrology that increase the discharge rate from the site the hundred-year criteria does not apply.

Based on the foregoing, this project is eligible for coverage under NYSDEC SPDES General Permit No. GP-0-10-001.

III. STUDY METHODOLOGY

Runoff rates were calculated based upon the standards set forth by the United States Department of Agriculture Natural Resources Conservation Service Technical Release 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986. The methodology set forth in TR-55 considers a multitude of characteristics for watershed areas including soil types, soil permeability, vegetative cover, time of concentration, topography, rainfall intensity, ponding areas, etc.

The 1, 10, 25, and 100 year storm recurrence intervals were reviewed in the design of the stormwater management facilities (see Appendices A & B Existing/Proposed Hydrologic Calculations).

Anticipated drainage conditions were analyzed taking into account the rate of runoff which will result from the construction of buildings, parking areas and other impervious surfaces associated with the site development.

Base Data and Design Criteria

For the stormwater management analysis, the following base information and methodology were used:

1. The site drainage patterns and outfall facilities were reviewed by John Meyer Consulting personnel for the purpose of gathering background data and confirming existing mapping of the watershed areas.
2. An Existing Drainage Area Map was developed from the topographical survey. The drainage area map reflects the existing conditions within and around the project area.
3. A Proposed Drainage Area Map was developed from the proposed grading design superimposed over the topographical survey. The drainage area map reflects the proposed conditions within the project area and the existing conditions to remain in the surrounding area.
4. The United States Department of Agriculture (USDA) Web Soil Survey of the site available on its website at <http://websoilsurvey.nrcd.usda.gov>.
5. The United States Department of Agriculture Natural Resources Conservation Service National Engineering Handbook, Section 4 - Hydrology", dated March 1985.
6. The United States Department of Agriculture Natural Resources Conservation Service Technical Report No. 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986.
7. United States Department of Commerce Weather Bureau Technical Release No. 40 Rainfall Frequency Atlas of the United States.
8. The time of concentration was calculated using the methods described in Chapter 3 of TR-55, Second Edition, June 1986. Manning's kinematics wave equation was used to determine the travel time of sheet flow. The 2-year 24 hour precipitation amount of 3.16 inches was used in the equation for all storm events. The travel time for shallow concentrated flow was computed using Figure 3-1 and Table 3-1 of TR-55. Manning's Equation was used to determine the travel time for channel reaches.

9. All hydrologic calculations were performed with the Bentley PondPack software package version 8i.
10. The New York State Stormwater Management Design Manual, revised August 2010.
11. New York Standards and Specifications for Erosion and Sediment Control, August 2005.
12. The storm flows for the 1, 10, 25, & 100 year recurrence interval storms were analyzed for the total watershed areas. The Type III distribution design storm for a 24 hour duration was used and the mass rainfall for each design storm is as follows:

24 Hour Rainfall Amounts

Design Storm Recurrence Interval	Inches of Rainfall
1 Year	2.9
10 Year	5.5
25 Year	6.5
100 Year	8.0

*24 Hour Rainfall Depths as per Newburgh Stormwater requirements

IV. EXISTING CONDITIONS

The existing parcel consists of a two story residential home, two sheds and concrete pavement located in the southern portion of the property. The northern portion of the property consists of grass and some wooded areas. It also consists of a preexisting residence which is currently demolished. Stormwater runoff from the entire site flows overland from west to east towards a watercourse located along the eastern property line.

The following natural features, conservation areas, resource areas and drainage patterns of the project site have been identified and utilized to develop Drawing DA-1 “Existing Drainage Area Map” which is included in Appendix I:

- Vegetative cover
- Topography (contour lines, existing flow paths, steep slopes, etc.)
- Soil (hydrologic soil groups, highly erodible soils, etc.)

Based on the USDA web soil survey, all on-site soils are well drained and moderately well drained and belong to hydrological groups C & D. The soil types, boundaries and drainage areas/designations are depicted on Drawing DA-1 within Appendix I.

One Design Point (DP-1) was identified for comparing peak rates of runoff in existing and proposed conditions. The eastern property line is identified as the design point. Similarly, one drainage area was identified in existing conditions based on the existing drainage divides at the site. The numbers included in the name of each drainage area correspond to the Design Point they drain towards.

The following is a description of the drainage area analyzed in the existing conditions analysis:

Existing Drainage Area 1 (EDA-1) is 5.22 acres in size and consists of the entire site and the area within the right of way of Route 17K along the southern edge of the property. The site consists of a residential home, a barn with accessory patios, concrete stairs, driveway and grass and wooded areas. Stormwater runoff from EDA-1 flows overland towards the east of the property into an existing water course located just outside the eastern property line.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 77 and 12 minutes, respectively. Refer to Drawing DA-1 in Appendix I.

The peak rates of runoff to the design points from the drainage areas for each storm are shown in the table below:

Table 1
Summary of Peak Rates of Runoff in Existing Conditions
(Cubic Feet per Second)

Storm Recurrence Interval	DP-1
1 year	4.54
10 year	14.43
25 year	18.53
100 year	24.77

V. PROPOSED CONDITIONS

The proposed improvements consist of the construction of a Sales/Service building, associated sidewalks, parking, roadway and landscaped areas. The site will be constructed in two phases. However, the stormwater analysis is prepared for a complete build out condition. The proposed on-site stormwater runoff from the impervious surface including building rooftop, driveway, parking areas and sidewalks will be collected and conveyed by drainage manholes and catch basins to a network of high density polyethylene (HDPE) drain pipe installed underground with discharge to a proposed stormwater infiltration basin. Vegetated swale is utilized where the runoff flows overland to reduce erosion.

The proposed drainage improvements include a variety of stormwater practices, such as vegetated swale and stormwater infiltration basin. After treatment for water quality and peak rate attenuation, stormwater discharges from the basin will utilize a riprap energy dissipater which will drain towards the existing watercourse located to the east of the property. The vegetated swale and porous pavement provides opportunity for water quality enhancement and infiltration not considered in the SWPPP's hydrologic model, resulting in a conservative analysis.

This section describes the design and analysis of the proposed conditions used to demonstrate that the SWPPP meets the requirements of the General Permit.

The Five Step Process For Stormwater Site Planning and Practice Selection

Step 1: Site Planning

The following practices and site features were incorporated in the site design:

- Preserving hydrology - Maintaining drainage divides
- Topography (contour lines, existing flow paths, steep slopes, etc.) has been maintained or disturbed to the minimum extent practicable.
- Soil (hydrologic soil groups, highly erodible soils, etc.)

Step 2: Determine Water Quality Treatment Volume (WQv)

Total required Water Quality volume calculated using the 90 % rule is 12,555 cubic feet.

As per Town of Newburgh, 110% of the required water quality volume shall be provided.

Therefore, the total Water Quality Volume required is 13,810 cubic feet.

Step 3: Runoff Reduction Volumes (RRv) by Applying Green Infrastructure Techniques and Standard SMP's

The following green infrastructure practices are provided:

- **Vegetated Swales**

Vegetated swale is proposed on the northeastern portion of the property where the runoff from the parking lot flows overland into the vegetated swale via a three foot wide curb cut.

- **Standard Practices with RRv Capacity**

- Stormwater Infiltration Basin

Description

An infiltration practice consisting of forebay and permanent pool designed to capture and infiltrate the runoff.

The infiltration rate observed at the stormwater infiltration basin location is 7 inches per hour (greater than 5 in./hr.). Therefore, the forebay is designed to provide a pretreatment volume of 110% of the total required water quality volume. The infiltration basin provides the remaining runoff reduction volume and water quality volume.

Summary of Green Infrastructure Practices and SMP
(Volume in Cubic Feet)

	PDA-1A	PDA-1B	PDA-1C	PDA-1D	TOTAL
Initial Water Quality Volume Required	N/A	8,278	5,532	N/A	13,810
Adjusted Water Quality Volume Required	-	8,278	5,532	-	13,810
Minimum Runoff Reduction Volume Required	-	2,176	1,450	-	3,626
Runoff Reduction Volume Provided:					
1. Vegetated Swale	-	-	757	-	757
3. Infiltration Basin	-	13,053	-	-	13,053
Total Runoff Reduction Volume Provided	-	13,053	757	-	13,810

Step 4: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

INFILTRATION SYSTEMS

Please refer to the “Proposed Hydrologic Calculations” provided in Appendix B and “Runoff Reduction Volume and Water Quality Volume Calculations” provided in Appendix C.

Step 5: Apply Volume and Peak Rate Control Practices to Meet Water Quantity Requirements

INFILTRATION SYSTEMS

Stormwater Infiltration Basin

Description

An infiltration practice consisting of a forebay and a permanent pool designed to capture and infiltrate the runoff.

All practices exceed the required elements of SMP criteria as outlined in Chapter 6 of the NYS Stormwater Management Design Manual. A summary of each category is provided below.

1. Feasibility – Stormwater Infiltration Basin is designed based upon unique physical environmental considerations noted in the NYS Stormwater Management Design Manual (NYSSMDM) Table 7.2 "Physical Feasibility Matrix".
2. Conveyance – The design conveys runoff to the designed basin in a manner that is safe, minimizes erosion and disruption to natural drainage channel and promotes filtering and infiltration.
3. Pretreatment – The proposed stormwater basin provide pretreatment in accordance with NYSSMDM design guidelines.
4. Treatment Geometry – The plan provides water quality treatment in accordance with NYSSMDM guidelines noted Table 6.1 "Water Quality Volume Distributing in Pond Design".
5. Environmental/Landscaping –Extensive landscaping has been provided for each proposed practice to enhance pollutant removal and provide aesthetic enhancement to the property.

6. Maintenance – Maintenance for the environment practices has been provided and is detailed in the SWPPP Report as required. Maintenance access is provided in the design plans.

In order to determine the post-development rates of runoff generated on-site, the following drainage areas were analyzed in the post-development conditions. These areas are graphically depicted on Drawing DA-2 "Proposed Drainage Area Map" located in Appendix I.

One Design Point (DP-1) was identified for comparing peak rates of runoff in existing and proposed conditions. The eastern property line is identified as the design point. Similarly, one drainage area was identified in proposed conditions based on the proposed drainage divides at the site. The numbers included in the name of each drainage area correspond to the Design Point they drain towards.

The following is a description of each of the drainage areas analyzed in the proposed conditions analysis:

Proposed Drainage Area 1 (PDA-1) represents the entire site and the area within the right of way of NYS Route 17K along the southern edge of the property. This area is subdivided into three separate drainage areas, PDA-1A, PDA-1B and PDA-1C.

Proposed Drainage Area 1A (PDA-1A) is 0.41 acres in size and represents the southern portion of the property consisting of grass areas. It also includes grass areas within the right of way of NYS Route 17K along the southern edge of the property. Stormwater runoff from this area flows overland from west to east. The runoff enters into a proposed stormwater drainage system and is treated within a hydrodynamic structure (CDS unit – Model CDS 2015-4 by CONTECH).

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 75 and 6 minutes, respectively.

Proposed Drainage Area 1B (PDA-1B) is 2.78 acres in size and represents the middle portions of the site. This area consists of the proposed sales/service building, associated parking and

landscaped areas. Stormwater runoff from the building rooftop is collected via roof drain leaders and the parking and the landscaped areas is collected into a proposed storm drainage system. The runoff is pretreated within the two hydrodynamic structures (CDS unit - Model CDS 2020 by CONTECH). Pretreatment is provided for the 110% of the total water quality volume.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 88 and 5 minutes, respectively.

Proposed Drainage Area 1C (PDA-1C) is 1.29 acres in size and represents the northern portions of the site. This area consists of the proposed parking and landscaped areas. Porous pavement is provided on the northwestern portion of the property (porous pavement is not accounted for in the runoff reduction volume calculations). The stormwater runoff from PDA-1C flows over the pavement into the proposed vegetated swale via a three foot wide curb cut. A runoff reduction volume of 757 cubic feet is provided within the vegetated swale. The runoff then enters the forebay where pretreatment for 110% of the total water quality volume for PDA-1C is provided.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 93 and 8 minutes, respectively.

The pretreated runoff from PDA-1B and PDA-1C is conveyed into the proposed stormwater infiltration basin. The total water quality volume required for PDA-1B and PDA-1C is stored and infiltrated into the ground. The infiltration rate observed at the stormwater infiltration basin location is 7 inches per hour. The higher flows are detained within the basin and gradually released using an outlet control structure consisting of a 12 inch orifice at elevation 408.00 and a six foot wide weir at elevation 409.50. A 10 foot wide emergency spillway is provided at elevation 410.20. The entire area below the emergency spillway will be riprapped to protect the face of the basin.

The treated and detained runoff from PDA-1A, PDA-1B and PDA-1C will discharge over a proposed riprap outlet protection prior to discharging into the existing watercourse located to the east of the property.

Proposed Drainage Area 1D (PDA-1D) is 0.74 acres in size and represents the northern portion of the property. This area consists of a proposed diversion swale and mostly the undeveloped portions of the property consisting of grass and some wooded areas. Stormwater runoff from this area flows overland into the existing watercourse located to the east of the property.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 77 and 5 minutes, respectively.

The peak rates of runoff to the design point of each of the analyzed drainage areas for each storm are shown on the table below:

Table 3
Summary of Proposed Peak Rates of Runoff in Proposed Conditions
(Cubic Feet per Second)

Storm Recurrence Interval	DP-1
1 year	1.12
10 year	4.59
25 year	7.78
100 year	14.04

The reductions in peak rates of runoff from proposed to existing conditions are shown on the table below:

Table 4
Percent Reductions in Peak Rates of Runoff (Existing vs. Proposed Conditions)
(Cubic Feet per Second)

Design Point	Storm Recurrence Frequency (Years)	Existing Peak Runoff Rate (cfs)	Proposed Peak Runoff Rate (cfs)	Percent Reduction (%)
1	1 year	4.54	1.12	75.3
	10 year	14.43	4.59	68.2
	25 year	18.53	7.78	58.0
	100 year	24.77	14.04	43.3

VI. SOIL SEDIMENT & EROSION CONTROL

A potential impact of the proposed development on any soils or slopes will be that of erosion and transport of sediment during construction. An Erosion and Sediment Control Management Program will be established for the proposed development, beginning at the start of construction and continuing throughout its course, as outlined in the "New York State Standards and Specifications for Erosion and Sediment Control," dated August 2005. A continuing maintenance program will be implemented for the control of sediment transport and erosion control after construction and throughout the useful life of the project.

The Operator shall have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify that the appropriate erosion and sediment controls, as shown on the Sediment & Erosion Control Plans, have been adequately installed to ensure overall preparedness of the site for the commencement of construction. In addition, the Operator shall have a qualified professional conduct one site inspection at least every seven calendar days and at least two site inspections every seven calendar days when greater than five acres of soil is disturbed at any one time.

Prior to the commencement of construction activity, the owner or operator must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The owner or operator shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The owner or operator shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed.

The owner or operator shall have each of the contractors and subcontractors identified above sign a copy of the certification statement provided in Appendix H before they commence any construction activity.

Soil Description

As provided by the United States Department of Agriculture, Soil Conservation Service "Web Soil Survey," soil classifications which exist on the subject site are described below.

Soils are placed into four hydrologic groups: A, B, C, and D. In the definitions of the classes, infiltration rate is the rate at which water enters the soil at the surface and is controlled by the surface conditions. Transmission rate is the rate at which water moves in the soil and is controlled by soil properties. Definitions of the classes are as follows:

- A. (Low runoff potential). The soils have a high infiltration rate even when thoroughly wetted. They chiefly consist of deep, well drained to excessively drained sands or gravels. They have a high rate of water transmission.
- B. The soils have a moderate infiltration rate when thoroughly wetted. They chiefly are moderately deep to deep, moderately well drained to well drained soils that have moderately fine to moderately coarse textures. They have a moderate rate of water transmission.
- C. The soils have a slow infiltration rate when thoroughly wetted. They chiefly have a layer that impedes downward movement of water or have moderately fine to fine texture. They have a slow rate of water transmission.
- D. (High runoff potential). The soils have a very slow infiltration rate when thoroughly wetted. They chiefly consist of clay soils that have a high swelling potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. They have a very slow rate of water transmission.

A soil's tendency to erode is also described in the USDA web soil survey. The ratings in this interpretation indicate the hazard of soil loss from unsurfaced areas. The ratings are based on soil

erosion factor K, slope, and content of rock fragments. The hazard is described as "slight," "moderate," or "SEVERE." A rating of "slight" indicates that little or no erosion is likely; "moderate" indicates that some erosion is likely, that the temporarily unsurfaced / unstabilized during construction may require occasional maintenance, and that simple erosion-control measures are needed; and "SEVERE" indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that erosion-control measures are needed.

Per the Soil Survey, the following soils listed below are present at the site. Following this list is a detailed description of each soil type found on the property:

<u>SYM.</u>	<u>HYDRO. SOIL GROUP</u>	<u>DESCRIPTION</u>
BnB	C	Bath-Nassau Channery Silt Loams, 3-8% slopes
MdB	D	Mardin gravelly silt loam, 3-8% slopes

Bath-Nassau Channery Silt Loams (BnB) have 3-8% slopes and well drained. This soil is 50% Bath and similar soils, 30% Nassau and similar soils and 20% minor components. Parent material consists of loamy till derived mainly from gray and brown siltstone, sandstone and shale. Depth to the top of a seasonal high water table is 24-30 inches. Available water capacity is very low (about 2.8 inches). Its hydrologic soil group is C. Erosion hazard is Moderate.

Mardin gravelly silt loam (MdB) have 3-8% slopes and is moderately well drained. This soil is 75% Mardin and similar soils, 25% minor components. Parent material consists of loamy till derived mainly from acid sedimentary rock. Depth to the top of a seasonal high water table is 18-24 inches. Available water capacity is very low (about 2.5 inches). Its hydrologic soil group is D. Erosion hazard is Moderate.

On-Site Pollution Prevention

There are temporary pollution prevention measures used to control litter and construction debris on site, such as:

- Silt Fence
- Silt Sack
- Stone Check Dam

- Temporary Sediment Trap
- Excavated Drop Inlet Protection
- Curb Drop Inlet Protection
- Stone & Block Drop Inlet Protection

There will be inlet protection provided for all storm drains and inlets with the use of curb gutter inlet protection structures and stone & block drop inlet protection, which keep silt, sediment and construction litter and debris out of the on-site stormwater drainage system.

All construction material shall be stored in designated staging areas. Roll-off containers shall be placed on site and all empty containers, construction debris and litter shall be placed in the containers. The Site Contractor shall have a spill prevention and response plan, as well as materials on site to remediate a spill.

Sequence of Construction

Construction shall be sequenced in such a manner that any area which is disturbed shall first be protected with sediment erosion controls as indicated on this plan. Particular requirements are given as follows:

- A. Stake limit of disturbance boundary with orange construction fence. Install a stabilized construction entrance. Clear the area to be developed.
- B. Install all silt fences.
- C. Grub the area to be constructed.
- D. Install temporary sediment traps #1 and #2.
- E. Construct diversion swales on the western side of the property to divert the offsite area draining towards the site towards the sediment trap #1 and eventually into the existing watercourse located to the east of the property while maintaining the existing drainage pattern.

- F. Provide stone check dams at regular intervals in the diversion swales.
- G. Install the temporary sediment traps #3 and #4 and construct diversion swales to divert the stormwater runoff from the west of the property towards the sediment traps.
- H. Remove the temporary sediment trap #4 once the area draining into the trap is stabilized.
- I. Install the temporary sediment traps #5 and construct diversion swale along Route 17K to divert the stormwater runoff from the southwest of the property towards the sediment trap.
- J. Remove and stockpile topsoil. Install silt fencing around the temporary topsoil stockpile location for erosion control purposes.
- K. Proceed with rough grading of the area under active construction.
- L. Initial stormwater infiltration basin excavation should be carried to within 2 feet of the final elevation of the basin floor. Final excavation to the finished grade should be deferred until all disturbed areas have been stabilized.
- M. Install the storm drainage system consisting of catch basins, manholes and underground storm pipes along with the erosion and sediment control devices associated with the storm drainage system (i.e. Inlet protection, stone check dams, etc., as shown on the plans).
- N. Install utilities (sanitary sewer, water, gas, electric, telephone, etc.), as required.
- O. Install green infrastructure practice, vegetated swale.
- P. Begin road construction including subbase and base pavement sections for asphalt porous pavement and the asphalt pavement.
- Q. Finish grading, redistribute topsoil and establish vegetation and/or landscaping.

R. Complete final grading for the stormwater infiltration basin.

S. Clean pavements and storm drain system of all accumulated sediment in conjunction with the removal of all temporary sediment and erosion control devices.

T. Complete building construction.

Temporary Control Measures

Temporary control measures and facilities will include silt fences, interceptor swales, stabilized construction entrances, temporary seeding, mulching and sediment traps with temporary riser and anti-vortex devices.

Throughout the construction of the proposed development, temporary control facilities will be implemented to control on-site erosion and sediment transfer. Interceptor swales, if required, will be used to direct stormwater runoff to temporary sediment traps for settlement. The sediment traps will be constructed as part of this project will serve as temporary sediment basins to remove sediment and pollutants from the stormwater runoff produced during construction.

Descriptions of the temporary sediment & erosion controls that will be used during the development of the site including silt fence, stabilized construction entrance, seeding, mulching and inlet protection are as follows:

1. Silt Fence is constructed using a geotextile fabric. The fence will be either 18 inches or 30 inches high. The height of the fence can be increased in the event of placing these devices on uncompacted fills or extremely loose undisturbed soils. The fences will not be placed in areas which receive concentrated flows such as ditches, swales and channels nor will the filter fabric material be placed across the entrance to pipes, culverts, spillway structures, sediment traps or basins.

2. Stabilized Construction Entrance consists of AASHTO No. 1 rock. The rock entrance will be a minimum of 50 feet in length by 20 feet in width by 8 inches in depth.
3. Seeding will be used to create a vegetative surface to stabilize disturbed earth until at least 70% of the disturbed area has a perennial vegetative cover. This amount is required to adequately function as a sediment and erosion control facility. Grass lining will also be used to line temporary channels and the surrounding disturbed areas.
4. Mulching is used as an anchor for seeding and disturbed areas to reduce soil loss due to storm events. These areas will be mulched with straw at a rate of 3 tons per acre such that the mulch forms a continuous blanket. Mulch must be placed after seeding or within 48 hours after seeding is completed.
5. Inlet Protection will be provided for all stormwater basins and inlets with the use of curb & gutter inlet protection and stone & block inlet protection structures, which will keep silt, sediment and construction debris out of the storm system. Existing structures within existing paved areas will be protected using “Silt Sacks” inside the structures.
6. Sediments Traps will be used with the permanent SMP's until their contributing drainage areas are stabilized. Once stabilized, the temporary risers will be removed and final grading/planting of the basins will be completed for permanent use as Stormwater Management basins.
7. Stone Check Dams are small barriers of crushed stone which will be laid across the vegetated swales which are approximately 12 inches high, located every one foot of elevation change along the swales so that the crest elevation of the downstream dam is at the same elevation of the toe of the upstream dam.

The contractor shall be responsible for maintaining the temporary sediment and erosion control measures throughout construction. This maintenance will include, but not be limited to, the following tasks:

1. For dust control purposes, moisten all exposed graded areas with water at least twice a day in those areas where soil is exposed and cannot be planted with a temporary cover due to construction operations or the season (December through March).
2. Inspection of erosion and sediment control measures shall be performed at the end of each construction day and immediately following each rainfall event. All required repairs shall be immediately executed by the contractor.
3. Sediment deposits shall be removed when they reach approximately $\frac{1}{3}$ the height of the silt fence. All such sediment shall be properly disposed of in fill areas on the site, as directed by the Owner's Field Representative. Fill shall be protected following disposal with mulch, temporary and/or permanent vegetation and be completely circumscribed on the downhill side by silt fence.
4. Rake all exposed areas parallel to the slope during earthwork operations.
5. Following final grading, the disturbed area shall be stabilized with a permanent surface treatment (i.e. turf grass, pavement or sidewalk). During rough grading, areas which are not to be disturbed for fourteen or more days shall be stabilized with the temporary seed mixture, as defined on the plans. Seed all piles of dirt in exposed soil areas that will not receive a permanent surface treatment.

Concrete Material and Equipment Management

Concrete washouts shall be used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery. The washout facilities consolidate solid for easier disposal and prevent runoff of liquids. The wash water is alkaline and contains high levels of chromium, which can leach into the ground and contaminate groundwater. It can also migrate to a storm drain, which can increase the pH of area waters and harm aquatic life. Solids that are improperly disposed of can clog storm drain pipes and cause flooding.

Installing concrete washout facilities not only prevents pollution but also is a matter of good housekeeping at your construction site.

Prefabricated concrete washout containers can be delivered to the site to provide maintenance and disposal of materials. Regular pick-ups of solid and liquid waste materials will be necessary. To prevent leaks on the job site, ensure that prefabricated washout containers are watertight. A self installed concrete washout facility can be utilized although they are much less reliable than prefabricated containers and are prone to leaks. There are many design options for the washout, but they are preferably built below-grade to prevent breaches and reduce the likelihood of runoff. Above-grade structures can also be used if they are sized and constructed correctly and are diligently maintained. One of the most common problems with self-installed concrete washout facilities is that they can leak or be breached as a result of constant use, therefore the contractor shall be sure to use quality materials and inspect the facilities on a daily basis.

Washouts must be sized to handle solids, wash water, and rainfall to prevent overflow. Concrete Washout Systems, Inc. estimates that 7 gallons of wash water are used to wash one truck chute and 50 gallons are used to wash out the hopper of a concrete pump truck.

For larger sites, a below-grade washout should be at least 10 feet wide and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 12-inches of freeboard must be provided. The pit must be lined with plastic sheeting of at least 10-mil thickness without holes or tears to prevent leaching of liquids into the ground. Concrete wash water should never be placed in a pit that is connected to the storm drain system or that drains to nearby waterways.

An above-grade washout can be constructed at least 10 feet wide by 10 feet long and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 4-inches of freeboard must be provided. The washout structures can be constructed with staked straw bales or sandbags double-or triple lined with plastic sheeting of at least 10-mil thickness without holes or tears.

Concrete washout facilities shall not be located within 50 feet of storm drains, open ditches, or water bodies and should be placed in locations that allow for convenient access for concrete trucks. The contractor shall check all concrete washout facilities daily to determine if they have been filled to 75 percent capacity, which is when materials need to be removed. Both above-and below-ground self-installed washouts should be inspected daily to ensure that plastic linings are intact and sidewalls have not been damaged by construction activities. Prefabricated washout containers should be inspected daily as well as to ensure the container is not leaking or nearing 75 percent capacity. Inspectors should also note whether the facilities are being used regularly. Additional signage for washouts may be needed in more convenient locations if concrete truck operators are not utilizing them.

The washout structures must be drained or covered prior to predicted rainstorms to prevent overflows. Hardened solids either whole or broken must be removed and then they may be reused onsite or hauled away for recycling.

Once materials are removed from the concrete washout, a new structure must be built or excavated, or if the previous structure is still intact, inspect it for signs of weakening or damage and make any necessary repairs. Line the structure with new plastic that is free of holes or tears and replace signage if necessary. It is very important that new plastic be used after every cleaning because pumps and concrete removal equipment can damage the existing liner.

Construction Site Chemical Control

The purpose of this management measure is to prevent the generation of nonpoint source pollution from construction sites due to improper handling and usage of nutrients and toxic substances, and to prevent the movement of toxic substances from the construction site.

Many potential pollutants other than sediment are associated with construction activities. These pollutants include pesticides; fertilizers used for vegetative stabilization; petrochemicals; construction chemicals such as concrete products, sealers, and paints; wash water associated with these products; paper; wood; garbage; and sanitary waste.

Disposal of excess pesticides and pesticide-related wastes should conform to registered label directions for the disposal and storage of pesticides and pesticide containers set forth in applicable Federal, State and local regulations that govern their usage, handling, storage, and disposal.

Pesticides should be disposed of through either a licensed waste management firm or a treatment, storage and disposal (TSD) facility. Containers should be triple-rinsed before disposal, and rinse waters should be reused as product.

Other practices include setting aside a locked storage area, tightly closing lids, storing in a cool, dry place, checking containers periodically for leaks or deterioration, maintaining a list of products in storage, using plastic sheeting to line the storage areas, and notifying neighboring property owners prior to spraying.

When storing petroleum products, follow these guidelines:

- Create a shelter around the area with cover and wind protection;
- Line the storage area with a double layer of plastic sheeting or similar material;
- Create an impervious berm around the perimeter with a capacity of 110 percent greater than that of the largest container;
- Clearly label all products;
- Keep tanks off the ground; and
- Keep lids securely fastened.

Post spill procedure information and have persons trained in spill handling on site or on call at all times. Materials for cleaning up spills should be kept on site and easily available. Spills should be cleaned up immediately and the contaminated material properly disposed of. Maintain and wash equipment and machinery in confined areas specifically designed to control runoff.

Thinners or solvents should not be discharged into sanitary or storm systems when cleaning machinery. Use alternative methods for cleaning larger equipment parts, such as high-pressure, high-temperature water washes, or steam cleaning. Equipment-washing detergents can be used,

and wash water may be discharged into sanitary sewers if solids are removed from the solution first. (This practice should be verified with the local sewer authority.) Small parts can be cleaned with degreasing solvents, which can then be reused or recycled.

Solid Waste Management and Portable Sanitary Management

The purpose of this management measure is to prevent the potential for solid waste such as construction debris, trash, etc. from construction sites due to improper handling and storage. Debris and litter should be removed periodically from the BMP's and surrounding areas to prevent clogging of pipes and structures. All construction material shall be stored in designated staging areas. Roll-off containers shall be placed on site and all empty containers, construction debris and litter shall be placed in the containers.

Portable sanitary units may be utilized on-site or bathrooms will be provided within construction trailers. A sanitation removal company will be hired to pump/remove any sanitary waste. In the event that portable sanitary units are used and then cleaned after being emptied, the rinse water may not be disposed of to the storm drain system. It shall be contained for later disposal if it can't be disposed of on-site. Remove paper and trash before cleaning the portable sanitary units. The portable sanitary units shall be located away from the storm drain system if possible. Provide overhead cover for wash areas if possible. Maintain spill response material and equipment on site to eliminate the potential for contaminants and wash water from entering the storm drain system.

Permanent Control Measures and Facilities for Long Term Protection

Towards the completion of construction, permanent sediment and erosion control measures will be developed for long term erosion protection. The following permanent control measures and facilities have been proposed to be implemented for the project:

1. Vegetated Swales will function to provide additional treatment of stormwater runoff by removal of pollutants and will promote a reduction of peak flows and provide runoff infiltration.

2. Infiltration Basins will be used to treat the runoff volume generated from the developed area and provide improvement to water quality control. The proposed basins will provide 110% of the water quality for 90% of the average annual stormwater runoff volume. The water quality volume will be retained and higher storms will be released gradually. Refer to the water quality volume calculations, in Appendix C.

3. CDS Water Quality Structure will be used to provide pretreatment of the water quality flow rate for separating sediment, debris, floatables, etc. from the runoff prior to discharge to the SMP's.

4. Catch Basins will be used to remove some of the coarse sand and grit sediment before entering the drainage system. Each catch basin will be constructed with a 16 inch deep sump.

5. Seeding of at least 70% perennial vegetative cover will be used to produce a permanent uniform erosion resistant surface. The seeded areas will be mulched with straw at a rate of 3 tons per acre such that the mulch forms a continuous blanket.

Specifications for Soil Restoration

Prior to the final stabilization of the disturbed areas, soil restoration will be required for all vegetated areas to recover the original properties and porosity of the soil. Soil Restoration Requirements are provided on Table 7 below:

Table 7

Soil Restoration Requirements

Type of Soil Disturbance	Soil Restoration Requirement		Comments/Examples
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only – no change in grade	HSG A&B	HSG C&D	Protect area from any ongoing construction activities
	apply 6 inches of topsoil	Aerate* and apply 6 inches of topsoil	

Areas of cut or fill	HSG A&B	HSG C&D	Clearing and grubbing
	Aerate and apply 6 inches of topsoil	Apply full Soil Restoration**	
Heavy traffic areas on site (especially) in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)	Apply full Soil Restoration (decompaction and compost enhancement)		
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area.

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.

** Per "Deep Ripping and De-compaction, DEC 2008."

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following full soil restoration steps applied:

1. Apply 3 inches of compost over subsoil.
2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing, and circulating air and compost into subsoils.
3. Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site.

Specifications for Final Stabilization of Graded Areas

Final stabilization of graded areas consists of the placement of topsoil and installation of landscaping (unless the area is to be paved, or a building is to be constructed in the location).

Topsoil is to be spread as soon as grading operations are completed. Topsoil is to be placed to a minimum depth of six inches on all embankments, planting areas and seeding/sod areas. The subgrade is to be scarified to a depth of two inches to provide a bond of the topsoil with the subsoil. Topsoil is to be raked to an even surface and cleared of all debris, roots, stones and other unsatisfactory material.

Planting operations shall be conducted under favorable weather conditions as follows:

- Permanent Lawns - April 15 (provided soil is frost-free and not excessively moist) to May 15; August 15 to October 15.
- Temporary Lawn Seeding - if outside of the time periods noted above, the areas shall be seeded immediately on completion of topsoil operations with annual ryegrass (Italian rye) at a rate of six pounds per 1,000 square feet. Temporary lawn installation is permitted provided the soil is frost-free and not excessively moist. The permanent lawn is to be installed the next planting season.

On slopes with a grade of 3 horizontal to 1 vertical or greater, and in swales, a geotextile netting or mat shall be installed for stabilization purposes as shown on the Plans. Seeded areas are to be mulched with straw or hay at an application rate of 70-90 pounds per 1,000 s.f. Straw or hay mulch must be spread uniformly and anchored immediately after spreading to prevent wind blowing. Mulches must be inspected periodically and in particular after rainstorms to check for erosion. If erosion is observed, additional mulch must be applied. Netting shall be inspected after rainstorms for dislocation or failure; any damage shall be repaired immediately.

All denuded surfaces which will be exposed for a period of over two months or more shall be temporarily hydroseeded with (a) perennial ryegrass at a rate of 40 lbs per acre (1.0 lb per 1000 square feet); (b) Certified "Aroostook" winter rye (cereal rye) @ 100 lb per acre (2.5 lb/1000 s.f.) to be used in the months of October and November.

Permanent turfgrass cover is to consist of a seed mixture as follows:

(a) Sunny sites

Kentucky Bluegrass	2.0-2.6 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	0.4-0.6 pounds/1000 square feet

(b) Shady sites

Kentucky Bluegrass	0.8-1.0 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	2.6-3.3 pounds/1000 square feet

All plant materials shall comply with the standards of the American Association Of Nurserymen with respect to height and caliper as described in its publication American Standard for Nursery Stock, latest edition.

VII. CONSTRUCTION PHASE AND POST-CONSTRUCTION MAINTENANCE

During the construction phase and following construction of the project, a number of maintenance measures will be taken with respect to the site maintenance. Measures to be taken included the following:

1. During Construction

A comprehensive sediment and erosion control plan will be in place during the construction period. Maintenance measures for sediment and erosion controls will include:

A qualified professional acceptable to the municipality will be hired by the owner or operator to monitor the installation and maintenance of the sediment and erosion control plans. The qualified professional shall report directly to the Engineering Consultant and shall be responsible for ensuring compliance with the design of the sediment and erosion control plans.

The qualified professional so hired will inspect all sediment and erosion control measures at least every seven calendar days. In the event that there has been a variance with the design of the sediment and erosion control measures so that the ability of the measures to adequately perform the intended function is lessened or compromised and/or the facilities are not adequately maintained, the qualified professional shall be required to report such variance to the Engineering Consultant within 48 hours and shall be empowered to order immediate repairs to the sediment and erosion control measures.

The qualified professional will also be responsible for observing the adequacy of the vegetation growth (trees, shrubs, groundcovers and turfgrasses) in newly graded areas and for ordering additional plantings in the event that the established plant materials do not adequately protect the ground surface from erosion.

2. Following Construction

Site maintenance activities on the property will include:

- Grounds maintenance, including mowing of lawns;
- Planting of trees, shrubs and groundcovers; pruning of trees and shrubs;
- Application of fertilizer and herbicides;
- Maintenance of stormwater management area;

Grounds maintenance on the site will be performed by landscaping contractor.

Fertilizer is typically applied twice in the year - once in the spring and once in the fall. The application of fertilizer is usually necessary to maintain healthy lawn growth due to competition for nutrients with trees and shrubs and since the clippings are often removed. It is not recommended that fertilizer be applied during the summer. It is at this time that lawns are typically dormant.

Fertilizers come in three basic types: (1) Organic; (2) Soluble synthetic and (3) Slow release.

Organic fertilizers are derived from plant or animal waste. Since they are heavier and bulkier than other fertilizers, it is necessary to apply a much greater amount at one time. Soluble synthetic fertilizers are predictable with determining the exact impact on a lawn. However more applications are necessary since their effect is often short term. Slow release fertilizers have a high percentage of nitrogen so quantities that need be handled at one time are smaller. Slow release fertilizers will be utilized by the project.

A complete fertilizer contains all three of the primary nutrients - nitrogen (N), phosphorus (P) and potassium in the form of potash (K). Typically, a 3-1-2 ratio of nutrients (N-P-K) is used for lawn applications.

Fertilizer shall be applied by the landscape contractor in accordance with the manufacturer's instructions. The application of fertilizer does require some skill on the part of the operator. Should there be a spill of fertilizer, the landscape contractor shall be required to scrape or vacuum it up. The area will then be watered in accordance with the manufacturer's instructions to ensure that the fertilizer becomes soluble and available to plants and does not run off.

Route 17 Cars, LLC will be responsible for the long-term operation and maintenance of the permanent stormwater management practices. The permanent stormwater management practices shall be maintained in accordance with the Maintenance Inspection Checklists provided in Appendix G.

VIII. CONCLUSION

This Stormwater Pollution Prevention Plan has been prepared to describe the project's pre and post-development stormwater management improvements and its sediment and erosion control improvements to be utilized during construction. The proposed permanent improvements and the interim improvements to be utilized during construction have been designed in accordance with the requirements of the:

- New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-10-001, effective January 29, 2010.
- Chapter 157 "Stormwater Management" of the Town of Newburgh Zoning Code.
- New York State Stormwater Management Design Manual.

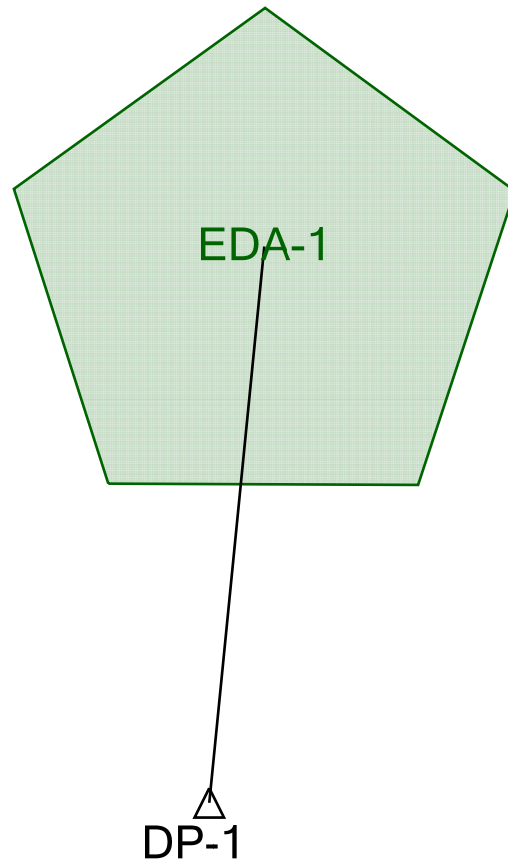
The project employs a variety of practices to enhance stormwater quality and reduce peak rates of runoff associated with the proposed improvements. These measures include vegetated swale and stormwater infiltration basin.

Based on the foregoing, it is our professional opinion that the proposed improvements will provide water quantity and quality enhancements and are not anticipated to have any adverse impacts to the site or any surrounding areas.

APPENDIX A

EXISTING HYDROLOGIC CALCULATIONS

Scenario: Pre-Development



Project Summary

Title	Volkswagen of Newburgh
Engineer	Nirali Dharani
Company	John Meyer Consulting, PC
Date	3/21/2014

Notes

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Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
EDA-1	Pre-Development-1 yr	1	18,937.000	12.150	4.54
EDA-1	Pre-Development-10 yr	10	57,591.000	12.150	14.43
EDA-1	Pre-Development-25 yr	25	74,097.000	12.150	18.53
EDA-1	Pre-Development-100 yr	100	99,727.000	12.150	24.77

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
DP-1	Pre-Development-1 yr	1	18,937.000	12.150	4.54
DP-1	Pre-Development-10 yr	10	57,591.000	12.150	14.43
DP-1	Pre-Development-25 yr	25	74,097.000	12.150	18.53
DP-1	Pre-Development-100 yr	100	99,727.000	12.150	24.77

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 1 years
 Storm Event: 1 YR

Time-Depth Curve: 1 YR

Label	1 YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.2	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.3	0.3
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.3	0.3	0.3
8.000	0.3	0.3	0.3	0.4	0.4
8.500	0.4	0.4	0.4	0.4	0.4
9.000	0.4	0.4	0.4	0.5	0.5
9.500	0.5	0.5	0.5	0.5	0.5
10.000	0.5	0.6	0.6	0.6	0.6
10.500	0.6	0.6	0.7	0.7	0.7
11.000	0.7	0.7	0.8	0.8	0.8
11.500	0.9	0.9	1.0	1.1	1.2
12.000	1.4	1.7	1.8	1.9	2.0
12.500	2.0	2.1	2.1	2.1	2.2
13.000	2.2	2.2	2.2	2.2	2.3
13.500	2.3	2.3	2.3	2.3	2.3
14.000	2.4	2.4	2.4	2.4	2.4
14.500	2.4	2.4	2.4	2.5	2.5
15.000	2.5	2.5	2.5	2.5	2.5
15.500	2.5	2.5	2.5	2.6	2.6
16.000	2.6	2.6	2.6	2.6	2.6
16.500	2.6	2.6	2.6	2.6	2.6
17.000	2.6	2.6	2.6	2.7	2.7
17.500	2.7	2.7	2.7	2.7	2.7

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 1 years
 Storm Event: 1 YR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
18.000	2.7	2.7	2.7	2.7	2.7
18.500	2.7	2.7	2.7	2.7	2.7
19.000	2.7	2.7	2.7	2.7	2.8
19.500	2.8	2.8	2.8	2.8	2.8
20.000	2.8	2.8	2.8	2.8	2.8
20.500	2.8	2.8	2.8	2.8	2.8
21.000	2.8	2.8	2.8	2.8	2.8
21.500	2.8	2.8	2.8	2.8	2.8
22.000	2.8	2.8	2.9	2.9	2.9
22.500	2.9	2.9	2.9	2.9	2.9
23.000	2.9	2.9	2.9	2.9	2.9
23.500	2.9	2.9	2.9	2.9	2.9
24.000	2.9	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 10 years
 Storm Event: 10 YR

Time-Depth Curve: 10 YR

Label	10 YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.4	0.4	0.4	0.4	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.5	0.5	0.5	0.5
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.6	0.6	0.6	0.6	0.6
8.000	0.6	0.6	0.7	0.7	0.7
8.500	0.7	0.7	0.7	0.8	0.8
9.000	0.8	0.8	0.8	0.9	0.9
9.500	0.9	0.9	1.0	1.0	1.0
10.000	1.0	1.1	1.1	1.1	1.2
10.500	1.2	1.2	1.3	1.3	1.3
11.000	1.4	1.4	1.5	1.5	1.6
11.500	1.6	1.7	1.9	2.1	2.3
12.000	2.7	3.2	3.4	3.6	3.8
12.500	3.9	3.9	4.0	4.0	4.1
13.000	4.1	4.2	4.2	4.2	4.3
13.500	4.3	4.3	4.4	4.4	4.4
14.000	4.5	4.5	4.5	4.5	4.6
14.500	4.6	4.6	4.6	4.7	4.7
15.000	4.7	4.7	4.7	4.8	4.8
15.500	4.8	4.8	4.8	4.8	4.9
16.000	4.9	4.9	4.9	4.9	4.9
16.500	4.9	5.0	5.0	5.0	5.0
17.000	5.0	5.0	5.0	5.0	5.0
17.500	5.1	5.1	5.1	5.1	5.1

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 10 years
 Storm Event: 10 YR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
18.000	5.1	5.1	5.1	5.1	5.1
18.500	5.1	5.2	5.2	5.2	5.2
19.000	5.2	5.2	5.2	5.2	5.2
19.500	5.2	5.2	5.2	5.2	5.3
20.000	5.3	5.3	5.3	5.3	5.3
20.500	5.3	5.3	5.3	5.3	5.3
21.000	5.3	5.3	5.3	5.4	5.4
21.500	5.4	5.4	5.4	5.4	5.4
22.000	5.4	5.4	5.4	5.4	5.4
22.500	5.4	5.4	5.4	5.4	5.4
23.000	5.5	5.5	5.5	5.5	5.5
23.500	5.5	5.5	5.5	5.5	5.5
24.000	5.5	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 100 years
 Storm Event: 100 YR

Time-Depth Curve: 100 YR

Label	100 YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.2	0.2	0.2
3.000	0.2	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.3	0.3	0.3
4.000	0.3	0.4	0.4	0.4	0.4
4.500	0.4	0.4	0.4	0.4	0.4
5.000	0.5	0.5	0.5	0.5	0.5
5.500	0.5	0.5	0.5	0.6	0.6
6.000	0.6	0.6	0.6	0.6	0.6
6.500	0.6	0.7	0.7	0.7	0.7
7.000	0.7	0.7	0.8	0.8	0.8
7.500	0.8	0.8	0.9	0.9	0.9
8.000	0.9	0.9	1.0	1.0	1.0
8.500	1.0	1.1	1.1	1.1	1.1
9.000	1.2	1.2	1.2	1.3	1.3
9.500	1.3	1.4	1.4	1.4	1.5
10.000	1.5	1.6	1.6	1.6	1.7
10.500	1.7	1.8	1.8	1.9	1.9
11.000	2.0	2.1	2.1	2.2	2.3
11.500	2.4	2.5	2.7	3.0	3.3
12.000	4.0	4.7	5.0	5.3	5.5
12.500	5.6	5.7	5.8	5.9	5.9
13.000	6.0	6.1	6.1	6.2	6.2
13.500	6.3	6.3	6.4	6.4	6.4
14.000	6.5	6.5	6.6	6.6	6.6
14.500	6.7	6.7	6.7	6.8	6.8
15.000	6.8	6.9	6.9	6.9	6.9
15.500	7.0	7.0	7.0	7.0	7.1
16.000	7.1	7.1	7.1	7.1	7.2
16.500	7.2	7.2	7.2	7.2	7.3
17.000	7.3	7.3	7.3	7.3	7.3
17.500	7.4	7.4	7.4	7.4	7.4

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 100 years
 Storm Event: 100 YR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
18.000	7.4	7.4	7.4	7.5	7.5
18.500	7.5	7.5	7.5	7.5	7.5
19.000	7.5	7.6	7.6	7.6	7.6
19.500	7.6	7.6	7.6	7.6	7.6
20.000	7.7	7.7	7.7	7.7	7.7
20.500	7.7	7.7	7.7	7.7	7.7
21.000	7.8	7.8	7.8	7.8	7.8
21.500	7.8	7.8	7.8	7.8	7.8
22.000	7.8	7.9	7.9	7.9	7.9
22.500	7.9	7.9	7.9	7.9	7.9
23.000	7.9	7.9	7.9	8.0	8.0
23.500	8.0	8.0	8.0	8.0	8.0
24.000	8.0	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 25 years
 Storm Event: 25 YR

Time-Depth Curve: 25 YR

Label	25 YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.2
2.500	0.2	0.2	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.3	0.3	0.3
4.000	0.3	0.3	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.4	0.4
5.000	0.4	0.4	0.4	0.4	0.4
5.500	0.4	0.4	0.4	0.4	0.5
6.000	0.5	0.5	0.5	0.5	0.5
6.500	0.5	0.5	0.5	0.6	0.6
7.000	0.6	0.6	0.6	0.6	0.6
7.500	0.7	0.7	0.7	0.7	0.7
8.000	0.7	0.8	0.8	0.8	0.8
8.500	0.8	0.9	0.9	0.9	0.9
9.000	0.9	1.0	1.0	1.0	1.1
9.500	1.1	1.1	1.1	1.2	1.2
10.000	1.2	1.3	1.3	1.3	1.4
10.500	1.4	1.4	1.5	1.5	1.6
11.000	1.6	1.7	1.7	1.8	1.9
11.500	1.9	2.0	2.2	2.4	2.7
12.000	3.2	3.8	4.1	4.3	4.5
12.500	4.6	4.6	4.7	4.8	4.8
13.000	4.9	4.9	5.0	5.0	5.1
13.500	5.1	5.1	5.2	5.2	5.2
14.000	5.3	5.3	5.3	5.4	5.4
14.500	5.4	5.4	5.5	5.5	5.5
15.000	5.6	5.6	5.6	5.6	5.6
15.500	5.7	5.7	5.7	5.7	5.7
16.000	5.8	5.8	5.8	5.8	5.8
16.500	5.8	5.9	5.9	5.9	5.9
17.000	5.9	5.9	5.9	6.0	6.0
17.500	6.0	6.0	6.0	6.0	6.0

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 25 years
 Storm Event: 25 YR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
18.000	6.0	6.0	6.1	6.1	6.1
18.500	6.1	6.1	6.1	6.1	6.1
19.000	6.1	6.1	6.1	6.2	6.2
19.500	6.2	6.2	6.2	6.2	6.2
20.000	6.2	6.2	6.2	6.2	6.3
20.500	6.3	6.3	6.3	6.3	6.3
21.000	6.3	6.3	6.3	6.3	6.3
21.500	6.3	6.3	6.4	6.4	6.4
22.000	6.4	6.4	6.4	6.4	6.4
22.500	6.4	6.4	6.4	6.4	6.4
23.000	6.4	6.4	6.5	6.5	6.5
23.500	6.5	6.5	6.5	6.5	6.5
24.000	6.5	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time of Concentration Calculations
Label: EDA-1

Return Event: 1 years
Storm Event: 1 YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	19.00 ft
Manning's n	0.400
Slope	0.053 ft/ft
2 Year 24 Hour Depth	3.2 in
Average Velocity	0.08 ft/s
Segment Time of Concentration	0.065 hours

Segment #2: TR-55 Sheet Flow	
Hydraulic Length	131.00 ft
Manning's n	0.150
Slope	0.069 ft/ft
2 Year 24 Hour Depth	3.2 in
Average Velocity	0.29 ft/s
Segment Time of Concentration	0.124 hours

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	204.00 ft
Is Paved?	False
Slope	0.103 ft/ft
Average Velocity	5.18 ft/s
Segment Time of Concentration	0.011 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.200 hours

Subsection: Time of Concentration Calculations
Label: EDA-1

Return Event: 1 years
Storm Event: 1 YR

==== SCS Channel Flow

$R = Qa / Wp$
 $V = (1.49 * (R^{2/3}) * (Sf^{0.5})) / n$
 $Tc = (Lf / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Unpaved surface:
 $V = 16.1345 * (Sf^{0.5})$
Tc = Paved Surface:
 $V = 20.3282 * (Sf^{0.5})$
 $(Lf / V) / 3600$
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Subsection: Runoff CN-Area
 Label: EDA-1

Return Event: 1 years
 Storm Event: 1 YR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft ²)	C (%)	UC (%)	Adjusted CN
Open space -Soil C	74.000	152,966.000	0.0	0.0	74.000
Woods - fair - Soil C	73.000	14,939.733	0.0	0.0	73.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	24,337.000	0.0	0.0	98.000
Open space - Soil D	80.000	14,170.876	0.0	0.0	80.000
Woods - fair - Soil D	79.000	6,101.369	0.0	0.0	79.000
IMP AREAS	98.000	1,430.299	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	13,346.000	0.0	0.0	74.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	227,291.277	(N/A)	(N/A)	77.163

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: EDA-1

Return Event: 1 years
 Storm Event: 1 YR

Storm Event	1 YR
Return Event	1 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	227,291.277 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
10.400	0.00	0.00	0.00	0.01	0.01
10.650	0.02	0.02	0.03	0.04	0.04
10.900	0.05	0.06	0.06	0.07	0.08
11.150	0.09	0.10	0.12	0.13	0.15
11.400	0.17	0.19	0.21	0.24	0.29
11.650	0.36	0.46	0.60	0.78	0.99
11.900	1.25	1.64	2.33	3.21	4.04
12.150	4.54	4.46	4.00	3.49	3.09
12.400	2.74	2.41	2.08	1.76	1.48
12.650	1.26	1.10	1.00	0.93	0.88
12.900	0.84	0.80	0.76	0.72	0.69
13.150	0.66	0.64	0.63	0.62	0.61
13.400	0.60	0.59	0.58	0.57	0.56
13.650	0.55	0.54	0.53	0.52	0.51
13.900	0.50	0.49	0.48	0.47	0.46
14.150	0.46	0.45	0.44	0.44	0.43
14.400	0.43	0.42	0.42	0.42	0.41
14.650	0.41	0.40	0.40	0.39	0.39
14.900	0.38	0.38	0.37	0.37	0.36
15.150	0.36	0.35	0.35	0.34	0.34
15.400	0.33	0.33	0.32	0.32	0.31
15.650	0.31	0.30	0.30	0.29	0.29
15.900	0.28	0.28	0.27	0.26	0.26
16.150	0.26	0.25	0.25	0.25	0.24
16.400	0.24	0.24	0.24	0.24	0.23
16.650	0.23	0.23	0.23	0.22	0.22
16.900	0.22	0.22	0.21	0.21	0.21
17.150	0.21	0.21	0.20	0.20	0.20
17.400	0.20	0.19	0.19	0.19	0.19
17.650	0.18	0.18	0.18	0.18	0.17
17.900	0.17	0.17	0.17	0.17	0.16
18.150	0.16	0.16	0.16	0.16	0.16
18.400	0.16	0.16	0.16	0.15	0.15
18.650	0.15	0.15	0.15	0.15	0.15
18.900	0.15	0.15	0.15	0.15	0.15

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: EDA-1

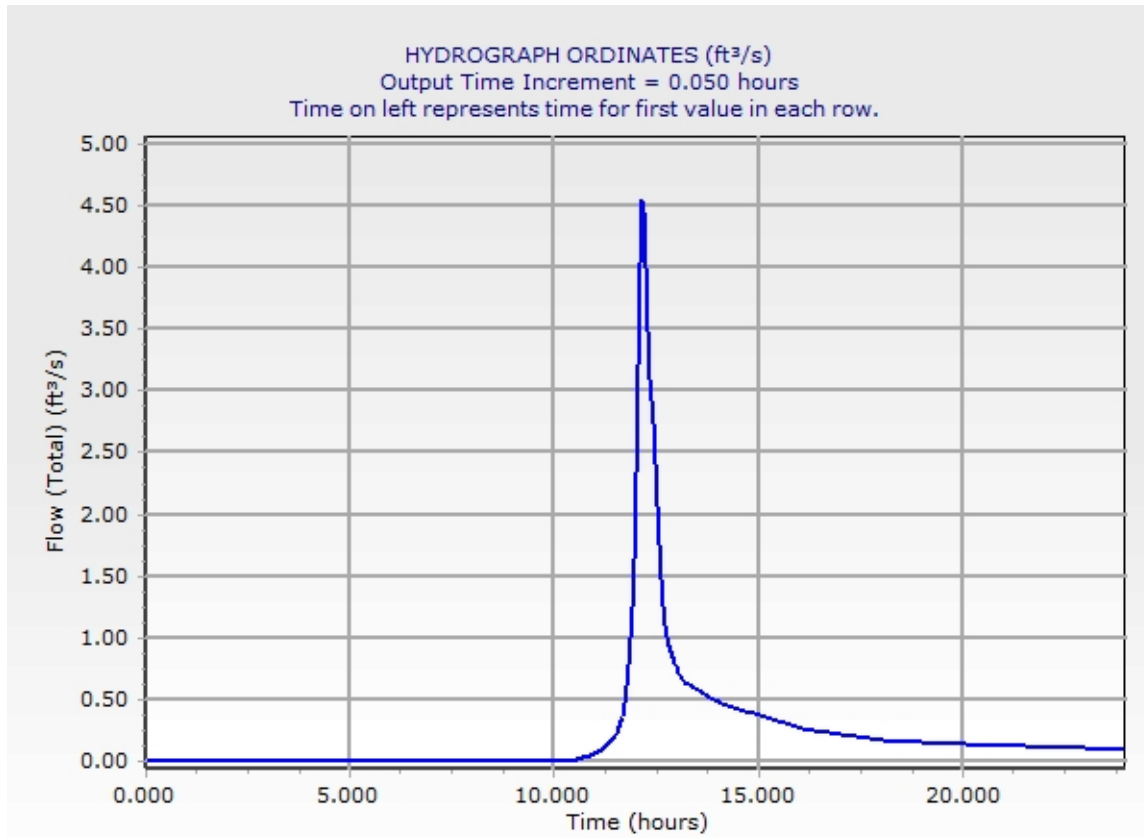
Return Event: 1 years
 Storm Event: 1 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
19.150	0.15	0.15	0.14	0.14	0.14
19.400	0.14	0.14	0.14	0.14	0.14
19.650	0.14	0.14	0.14	0.14	0.14
19.900	0.14	0.13	0.13	0.13	0.13
20.150	0.13	0.13	0.13	0.13	0.13
20.400	0.13	0.13	0.13	0.13	0.13
20.650	0.13	0.13	0.13	0.13	0.12
20.900	0.12	0.12	0.12	0.12	0.12
21.150	0.12	0.12	0.12	0.12	0.12
21.400	0.12	0.12	0.12	0.12	0.12
21.650	0.12	0.12	0.11	0.11	0.11
21.900	0.11	0.11	0.11	0.11	0.11
22.150	0.11	0.11	0.11	0.11	0.11
22.400	0.11	0.11	0.11	0.11	0.11
22.650	0.11	0.10	0.10	0.10	0.10
22.900	0.10	0.10	0.10	0.10	0.10
23.150	0.10	0.10	0.10	0.10	0.10
23.400	0.10	0.10	0.10	0.10	0.09
23.650	0.09	0.09	0.09	0.09	0.09
23.900	0.09	0.09	0.09	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: EDA-1

Return Event: 1 years
Storm Event: 1 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: EDA-1

Return Event: 10 years
 Storm Event: 10 YR

Storm Event	10 YR
Return Event	10 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	227,291.277 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
7.900	0.00	0.00	0.00	0.01	0.01
8.150	0.01	0.02	0.02	0.03	0.03
8.400	0.04	0.04	0.05	0.05	0.06
8.650	0.06	0.07	0.08	0.08	0.09
8.900	0.10	0.10	0.11	0.12	0.13
9.150	0.13	0.14	0.15	0.16	0.17
9.400	0.18	0.19	0.20	0.21	0.22
9.650	0.23	0.24	0.25	0.26	0.27
9.900	0.28	0.29	0.30	0.32	0.33
10.150	0.34	0.36	0.38	0.39	0.41
10.400	0.43	0.45	0.47	0.49	0.51
10.650	0.53	0.56	0.58	0.60	0.63
10.900	0.65	0.67	0.70	0.73	0.76
11.150	0.80	0.86	0.91	0.98	1.05
11.400	1.12	1.20	1.28	1.40	1.60
11.650	1.90	2.35	2.90	3.57	4.31
11.900	5.16	6.39	8.56	11.17	13.38
12.150	14.43	13.73	12.00	10.26	8.92
12.400	7.77	6.74	5.75	4.84	4.03
12.650	3.41	2.97	2.69	2.49	2.34
12.900	2.22	2.10	2.00	1.90	1.81
13.150	1.74	1.68	1.64	1.61	1.58
13.400	1.55	1.52	1.50	1.47	1.44
13.650	1.42	1.39	1.37	1.34	1.31
13.900	1.29	1.26	1.23	1.21	1.18
14.150	1.16	1.14	1.13	1.11	1.10
14.400	1.09	1.08	1.06	1.05	1.04
14.650	1.02	1.01	1.00	0.99	0.97
14.900	0.96	0.95	0.93	0.92	0.91
15.150	0.89	0.88	0.87	0.86	0.84
15.400	0.83	0.82	0.80	0.79	0.78
15.650	0.76	0.75	0.74	0.72	0.71
15.900	0.70	0.68	0.67	0.66	0.64
16.150	0.63	0.62	0.62	0.61	0.60
16.400	0.60	0.59	0.59	0.58	0.57

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: EDA-1

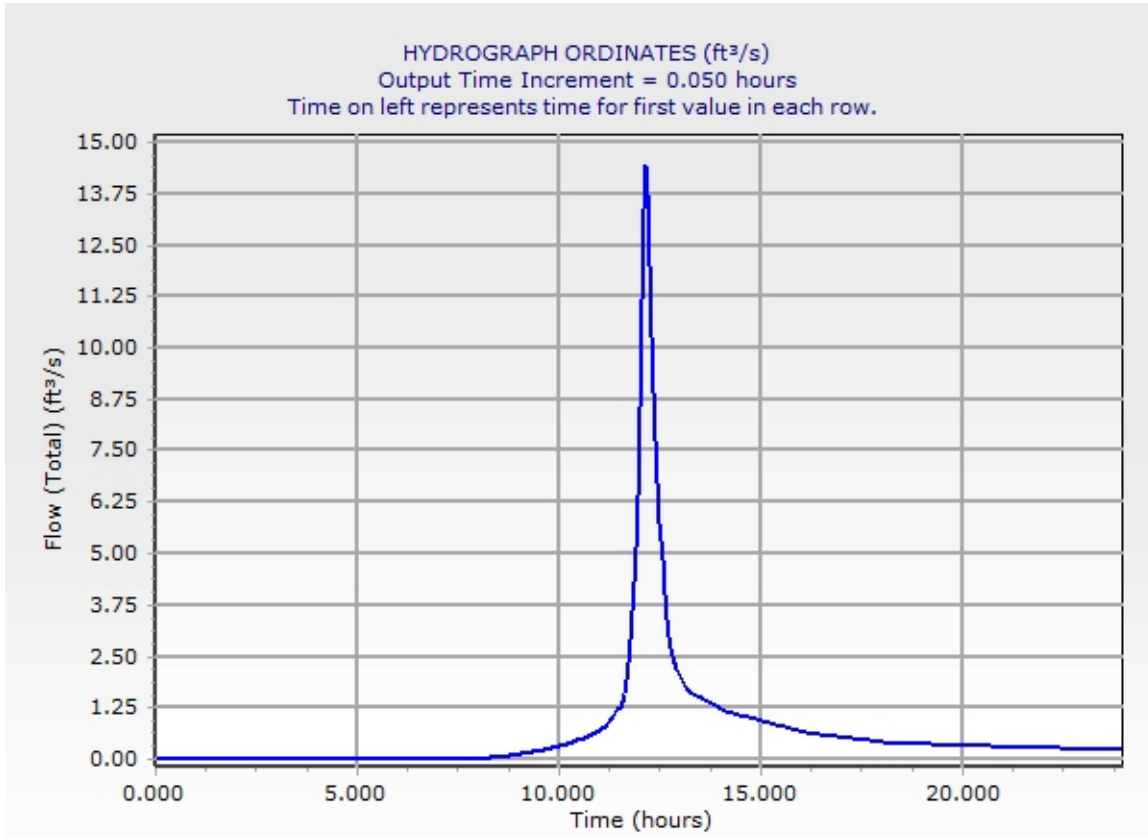
Return Event: 10 years
 Storm Event: 10 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
16.650	0.57	0.56	0.56	0.55	0.54
16.900	0.54	0.53	0.53	0.52	0.52
17.150	0.51	0.50	0.50	0.49	0.49
17.400	0.48	0.47	0.47	0.46	0.46
17.650	0.45	0.44	0.44	0.43	0.43
17.900	0.42	0.41	0.41	0.40	0.40
18.150	0.39	0.39	0.39	0.39	0.38
18.400	0.38	0.38	0.38	0.38	0.37
18.650	0.37	0.37	0.37	0.37	0.37
18.900	0.36	0.36	0.36	0.36	0.36
19.150	0.35	0.35	0.35	0.35	0.35
19.400	0.35	0.34	0.34	0.34	0.34
19.650	0.34	0.34	0.33	0.33	0.33
19.900	0.33	0.33	0.32	0.32	0.32
20.150	0.32	0.32	0.32	0.32	0.31
20.400	0.31	0.31	0.31	0.31	0.31
20.650	0.31	0.30	0.30	0.30	0.30
20.900	0.30	0.30	0.30	0.30	0.29
21.150	0.29	0.29	0.29	0.29	0.29
21.400	0.29	0.28	0.28	0.28	0.28
21.650	0.28	0.28	0.28	0.27	0.27
21.900	0.27	0.27	0.27	0.27	0.27
22.150	0.27	0.26	0.26	0.26	0.26
22.400	0.26	0.26	0.26	0.25	0.25
22.650	0.25	0.25	0.25	0.25	0.25
22.900	0.25	0.24	0.24	0.24	0.24
23.150	0.24	0.24	0.24	0.23	0.23
23.400	0.23	0.23	0.23	0.23	0.23
23.650	0.22	0.22	0.22	0.22	0.22
23.900	0.22	0.22	0.21	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: EDA-1

Return Event: 10 years
Storm Event: 10 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: EDA-1

Return Event: 25 years
 Storm Event: 25 YR

Storm Event	25 YR
Return Event	25 years
Duration	24.000 hours
Depth	6.5 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	227,291.277 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
7.150	0.00	0.00	0.00	0.01	0.01
7.400	0.01	0.02	0.02	0.02	0.03
7.650	0.03	0.04	0.04	0.05	0.05
7.900	0.05	0.06	0.06	0.07	0.07
8.150	0.08	0.09	0.09	0.10	0.11
8.400	0.11	0.12	0.13	0.14	0.14
8.650	0.15	0.16	0.17	0.18	0.19
8.900	0.20	0.21	0.22	0.23	0.24
9.150	0.25	0.26	0.28	0.29	0.30
9.400	0.31	0.33	0.34	0.35	0.37
9.650	0.38	0.39	0.41	0.42	0.44
9.900	0.45	0.47	0.48	0.50	0.52
10.150	0.54	0.56	0.58	0.60	0.63
10.400	0.65	0.68	0.71	0.73	0.76
10.650	0.79	0.82	0.85	0.88	0.91
10.900	0.94	0.98	1.01	1.04	1.09
11.150	1.14	1.21	1.29	1.38	1.47
11.400	1.57	1.67	1.78	1.93	2.20
11.650	2.60	3.20	3.94	4.82	5.78
11.900	6.87	8.46	11.23	14.53	17.28
12.150	18.53	17.54	15.27	13.01	11.27
12.400	9.79	8.48	7.21	6.06	5.05
12.650	4.27	3.72	3.36	3.11	2.92
12.900	2.76	2.62	2.48	2.36	2.25
13.150	2.16	2.09	2.04	2.00	1.96
13.400	1.92	1.89	1.86	1.82	1.79
13.650	1.76	1.73	1.69	1.66	1.63
13.900	1.59	1.56	1.53	1.50	1.47
14.150	1.44	1.42	1.40	1.38	1.36
14.400	1.35	1.33	1.31	1.30	1.28
14.650	1.27	1.25	1.23	1.22	1.20
14.900	1.19	1.17	1.15	1.14	1.12
15.150	1.10	1.09	1.07	1.05	1.04
15.400	1.02	1.01	0.99	0.97	0.96
15.650	0.94	0.92	0.91	0.89	0.87

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: EDA-1

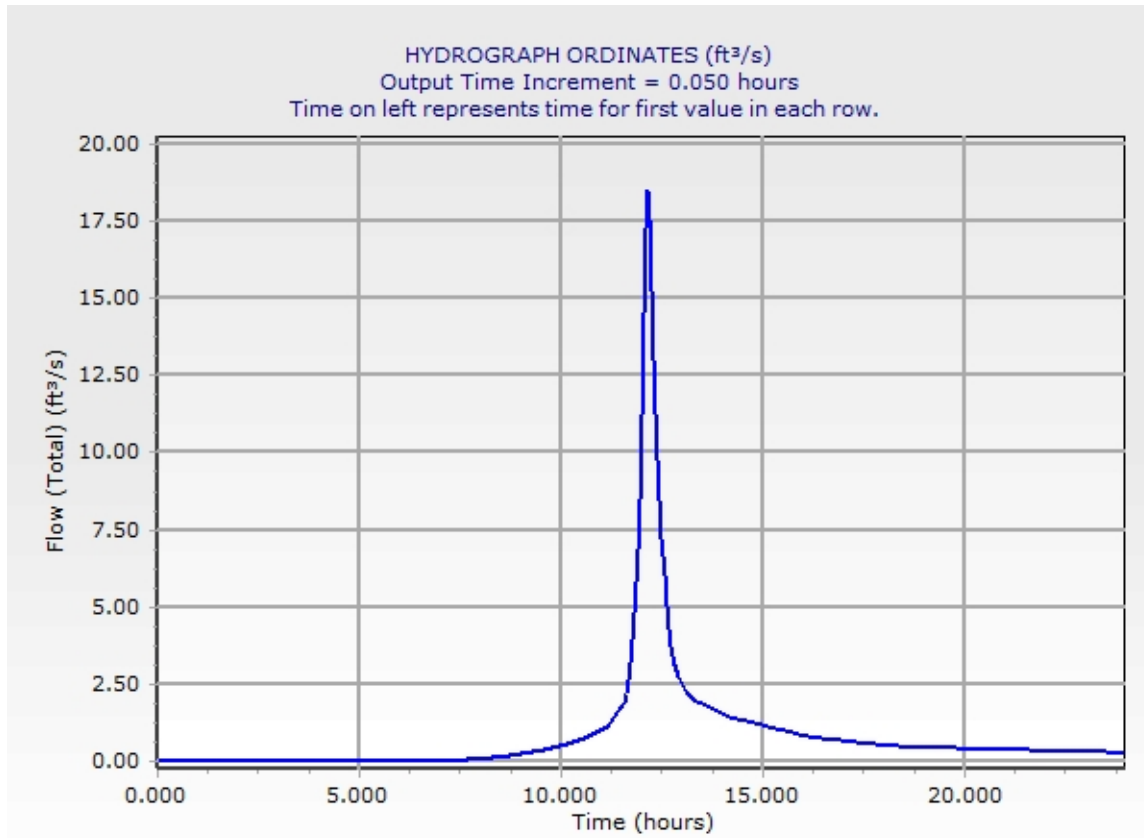
Return Event: 25 years
 Storm Event: 25 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
15.900	0.86	0.84	0.82	0.81	0.79
16.150	0.78	0.77	0.76	0.75	0.74
16.400	0.74	0.73	0.72	0.71	0.71
16.650	0.70	0.69	0.68	0.68	0.67
16.900	0.66	0.66	0.65	0.64	0.63
17.150	0.63	0.62	0.61	0.60	0.60
17.400	0.59	0.58	0.58	0.57	0.56
17.650	0.55	0.55	0.54	0.53	0.52
17.900	0.52	0.51	0.50	0.49	0.49
18.150	0.48	0.48	0.48	0.47	0.47
18.400	0.47	0.47	0.46	0.46	0.46
18.650	0.46	0.45	0.45	0.45	0.45
18.900	0.45	0.44	0.44	0.44	0.44
19.150	0.44	0.43	0.43	0.43	0.43
19.400	0.42	0.42	0.42	0.42	0.42
19.650	0.41	0.41	0.41	0.41	0.40
19.900	0.40	0.40	0.40	0.40	0.39
20.150	0.39	0.39	0.39	0.39	0.39
20.400	0.38	0.38	0.38	0.38	0.38
20.650	0.38	0.37	0.37	0.37	0.37
20.900	0.37	0.36	0.36	0.36	0.36
21.150	0.36	0.36	0.36	0.35	0.35
21.400	0.35	0.35	0.35	0.34	0.34
21.650	0.34	0.34	0.34	0.34	0.34
21.900	0.33	0.33	0.33	0.33	0.33
22.150	0.33	0.32	0.32	0.32	0.32
22.400	0.32	0.32	0.31	0.31	0.31
22.650	0.31	0.31	0.31	0.30	0.30
22.900	0.30	0.30	0.30	0.30	0.29
23.150	0.29	0.29	0.29	0.29	0.28
23.400	0.28	0.28	0.28	0.28	0.28
23.650	0.27	0.27	0.27	0.27	0.27
23.900	0.27	0.26	0.26	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: EDA-1

Return Event: 25 years
Storm Event: 25 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: EDA-1

Return Event: 100 years
 Storm Event: 100 YR

Storm Event	100 YR
Return Event	100 years
Duration	24.000 hours
Depth	8.0 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	227,291.277 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

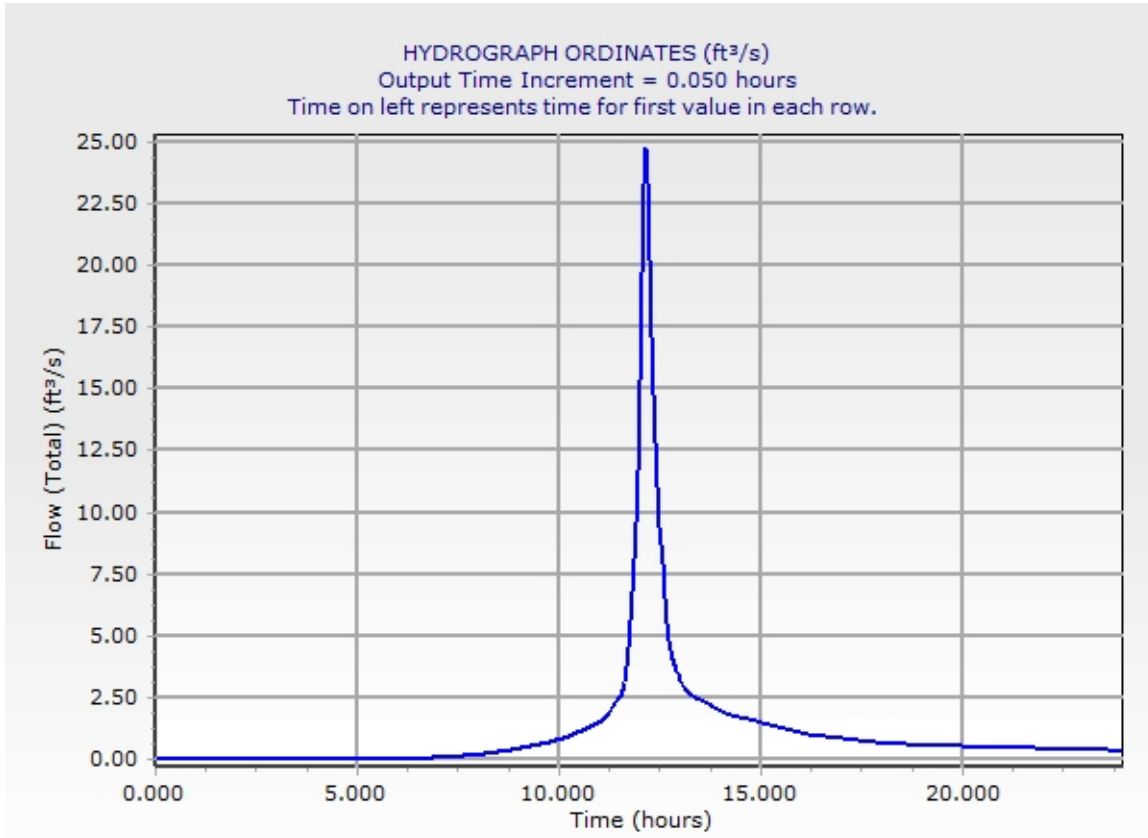
Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
6.250	0.00	0.00	0.00	0.01	0.01
6.500	0.01	0.02	0.02	0.02	0.03
6.750	0.03	0.04	0.04	0.05	0.05
7.000	0.05	0.06	0.06	0.07	0.07
7.250	0.08	0.09	0.09	0.10	0.10
7.500	0.11	0.12	0.12	0.13	0.13
7.750	0.14	0.15	0.15	0.16	0.17
8.000	0.18	0.18	0.19	0.20	0.21
8.250	0.22	0.23	0.24	0.25	0.26
8.500	0.28	0.29	0.30	0.31	0.33
8.750	0.34	0.35	0.37	0.38	0.40
9.000	0.41	0.43	0.45	0.46	0.48
9.250	0.50	0.51	0.53	0.55	0.57
9.500	0.58	0.60	0.62	0.64	0.66
9.750	0.68	0.70	0.72	0.74	0.76
10.000	0.79	0.81	0.83	0.86	0.89
10.250	0.92	0.95	0.99	1.02	1.06
10.500	1.10	1.13	1.17	1.21	1.25
10.750	1.29	1.34	1.38	1.42	1.46
11.000	1.51	1.56	1.62	1.69	1.79
11.250	1.90	2.03	2.15	2.29	2.43
11.500	2.58	2.78	3.15	3.72	4.55
11.750	5.57	6.78	8.08	9.54	11.66
12.000	15.34	19.70	23.26	24.77	23.33
12.250	20.23	17.16	14.82	12.84	11.10
12.500	9.42	7.91	6.57	5.55	4.83
12.750	4.36	4.04	3.79	3.58	3.40
13.000	3.22	3.06	2.91	2.80	2.71
13.250	2.64	2.58	2.53	2.49	2.44
13.500	2.40	2.35	2.31	2.27	2.23
13.750	2.18	2.14	2.10	2.05	2.01
14.000	1.97	1.93	1.89	1.85	1.82
14.250	1.80	1.77	1.75	1.73	1.71
14.500	1.69	1.67	1.65	1.63	1.61
14.750	1.58	1.56	1.54	1.52	1.50

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: EDA-1

Return Event: 100 years
 Storm Event: 100 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
15.000	1.48	1.46	1.44	1.42	1.40
15.250	1.37	1.35	1.33	1.31	1.29
15.500	1.27	1.25	1.23	1.20	1.18
15.750	1.16	1.14	1.12	1.10	1.08
16.000	1.05	1.03	1.02	1.00	0.98
16.250	0.97	0.96	0.95	0.94	0.93
16.500	0.92	0.91	0.90	0.89	0.88
16.750	0.88	0.87	0.86	0.85	0.84
17.000	0.83	0.82	0.81	0.80	0.79
17.250	0.78	0.77	0.76	0.75	0.74
17.500	0.74	0.73	0.72	0.71	0.70
17.750	0.69	0.68	0.67	0.66	0.65
18.000	0.64	0.63	0.62	0.62	0.61
18.250	0.61	0.60	0.60	0.60	0.60
18.500	0.59	0.59	0.59	0.58	0.58
18.750	0.58	0.58	0.57	0.57	0.57
19.000	0.56	0.56	0.56	0.56	0.55
19.250	0.55	0.55	0.54	0.54	0.54
19.500	0.54	0.53	0.53	0.53	0.52
19.750	0.52	0.52	0.52	0.51	0.51
20.000	0.51	0.51	0.50	0.50	0.50
20.250	0.50	0.49	0.49	0.49	0.49
20.500	0.48	0.48	0.48	0.48	0.48
20.750	0.47	0.47	0.47	0.47	0.47
21.000	0.46	0.46	0.46	0.46	0.45
21.250	0.45	0.45	0.45	0.45	0.44
21.500	0.44	0.44	0.44	0.44	0.43
21.750	0.43	0.43	0.43	0.43	0.42
22.000	0.42	0.42	0.42	0.41	0.41
22.250	0.41	0.41	0.40	0.40	0.40
22.500	0.40	0.40	0.40	0.39	0.39
22.750	0.39	0.39	0.38	0.38	0.38
23.000	0.38	0.38	0.37	0.37	0.37
23.250	0.37	0.37	0.36	0.36	0.36
23.500	0.36	0.35	0.35	0.35	0.35
23.750	0.35	0.34	0.34	0.34	0.34
24.000	0.33	(N/A)	(N/A)	(N/A)	(N/A)



Subsection: Addition Summary
Label: DP-1

Return Event: 1 years
Storm Event: 1 YR

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	EDA-1	18,937.399	12.150	4.54
Flow (In)	DP-1	18,937.399	12.150	4.54

Subsection: Addition Summary
Label: DP-1

Return Event: 10 years
Storm Event: 10 YR

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	EDA-1	57,590.792	12.150	14.43
Flow (In)	DP-1	57,590.792	12.150	14.43

Subsection: Addition Summary
Label: DP-1

Return Event: 25 years
Storm Event: 25 YR

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	EDA-1	74,097.443	12.150	18.53
Flow (In)	DP-1	74,097.443	12.150	18.53

Subsection: Addition Summary
Label: DP-1

Return Event: 100 years
Storm Event: 100 YR

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	EDA-1	99,727.360	12.150	24.77
Flow (In)	DP-1	99,727.360	12.150	24.77

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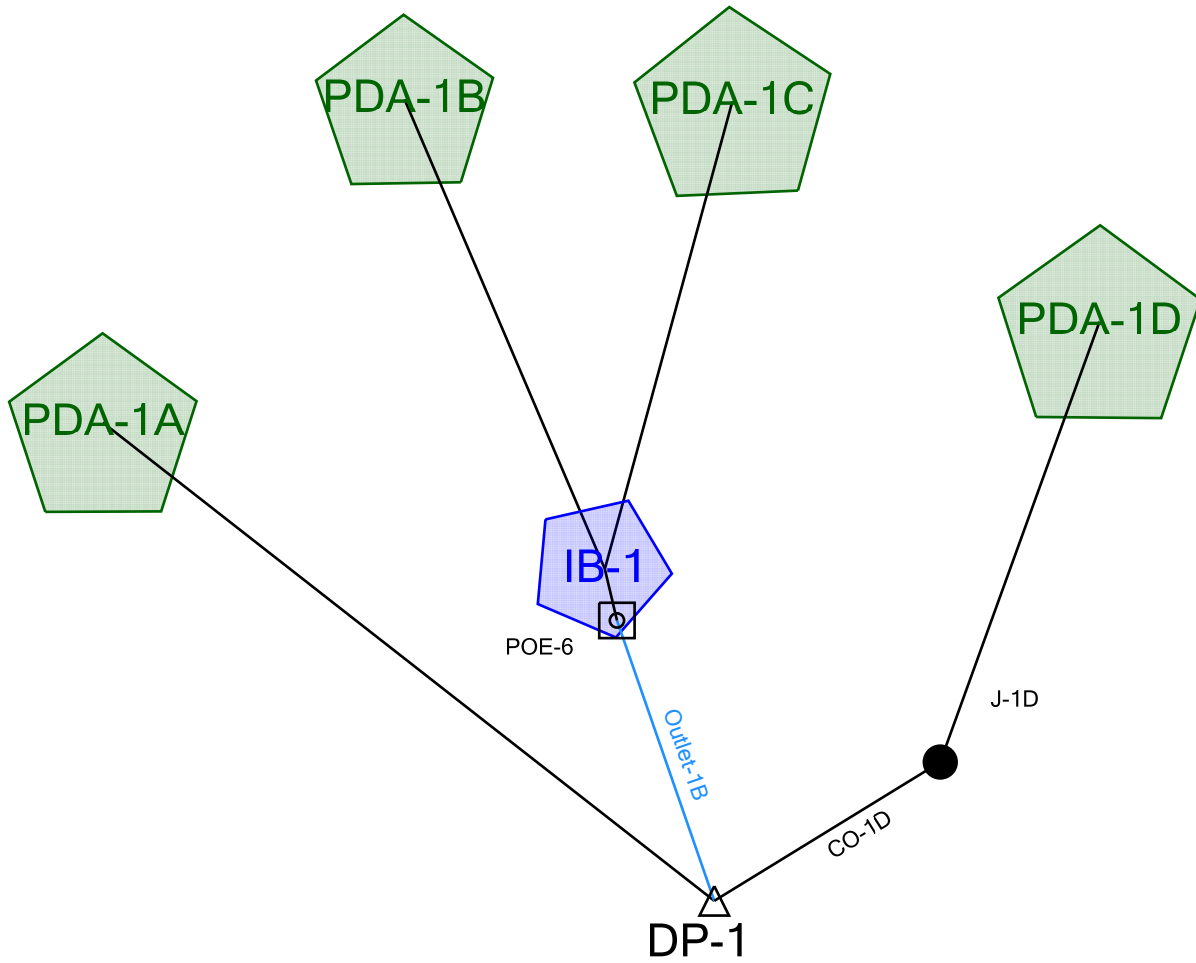
M

Master Network Summary...2

APPENDIX B

PROPOSED HYDROLOGIC CALCULATIONS

Scenario: POST-DEVELOPMENT



Project Summary

Title	Volkswagen of Newburgh
Engineer	Nirali Dharani
Company	John Meyer Consulting, PC
Date	3/21/2014

Notes

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Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
PDA-1A	POST-DEVELOPMENT -1 YR	1	1,318.000	12.100	0.35
PDA-1A	POST-DEVELOPMENT -10 YR	10	4,210.000	12.100	1.18
PDA-1A	POST-DEVELOPMENT -25 YR	25	5,463.000	12.100	1.53
PDA-1A	POST-DEVELOPMENT -100 YR	100	7,420.000	12.100	2.06
PDA-1D	POST-DEVELOPMENT -1 YR	1	2,701.000	12.100	0.76
PDA-1D	POST-DEVELOPMENT -10 YR	10	8,211.000	12.100	2.35
PDA-1D	POST-DEVELOPMENT -25 YR	25	10,565.000	12.100	3.00
PDA-1D	POST-DEVELOPMENT -100 YR	100	14,218.000	12.100	3.99
PDA-1C	POST-DEVELOPMENT -1 YR	1	10,115.000	12.100	2.61
PDA-1C	POST-DEVELOPMENT -10 YR	10	21,977.000	12.100	5.44
PDA-1C	POST-DEVELOPMENT -25 YR	25	26,603.000	12.100	6.52
PDA-1C	POST-DEVELOPMENT -100 YR	100	33,568.000	12.100	8.12
PDA-1B	POST-DEVELOPMENT -1 YR	1	17,416.000	12.100	4.96
PDA-1B	POST-DEVELOPMENT -10 YR	10	41,751.000	12.100	11.38
PDA-1B	POST-DEVELOPMENT -25 YR	25	51,449.000	12.100	13.84
PDA-1B	POST-DEVELOPMENT -100 YR	100	66,151.000	12.100	17.51

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
DP-1	POST-DEVELOPMENT -1 YR	1	4,019.000	12.100	1.12
DP-1	POST-DEVELOPMENT -10 YR	10	34,647.000	12.250	4.59
DP-1	POST-DEVELOPMENT -25 YR	25	49,790.000	12.350	7.78
DP-1	POST-DEVELOPMENT -100 YR	100	73,610.000	12.150	14.04
J-1D	POST-DEVELOPMENT -1 YR	1	2,701.000	12.100	0.76

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
J-1D	POST-DEVELOPMENT -10 YR	10	8,211.000	12.100	2.35
J-1D	POST-DEVELOPMENT -25 YR	25	10,565.000	12.100	3.00
J-1D	POST-DEVELOPMENT -100 YR	100	14,218.000	12.100	3.99

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
IB-1 (IN)	POST-DEVELOPMENT T-1 YR	1	27,530.000	12.100	7.57	(N/A)	(N/A)
IB-1 (OUT)	POST-DEVELOPMENT T-1 YR	1	0.000	0.000	0.00	407.58	13,343.000
IB-1 (IN)	POST-DEVELOPMENT T-10 YR	10	63,728.000	12.100	16.83	(N/A)	(N/A)
IB-1 (OUT)	POST-DEVELOPMENT T-10 YR	10	22,226.000	12.500	3.19	409.27	27,644.000
IB-1 (IN)	POST-DEVELOPMENT T-25 YR	25	78,052.000	12.100	20.36	(N/A)	(N/A)
IB-1 (OUT)	POST-DEVELOPMENT T-25 YR	25	33,762.000	12.400	6.12	409.72	32,336.000
IB-1 (IN)	POST-DEVELOPMENT T-100 YR	100	99,719.000	12.100	25.63	(N/A)	(N/A)
IB-1 (OUT)	POST-DEVELOPMENT T-100 YR	100	51,972.000	12.300	10.85	410.20	37,693.000

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 1 years
 Storm Event: 1 YR

Time-Depth Curve: 1 YR

Label	1 YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.2	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.3	0.3
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.3	0.3	0.3
8.000	0.3	0.3	0.3	0.4	0.4
8.500	0.4	0.4	0.4	0.4	0.4
9.000	0.4	0.4	0.4	0.5	0.5
9.500	0.5	0.5	0.5	0.5	0.5
10.000	0.5	0.6	0.6	0.6	0.6
10.500	0.6	0.6	0.7	0.7	0.7
11.000	0.7	0.7	0.8	0.8	0.8
11.500	0.9	0.9	1.0	1.1	1.2
12.000	1.4	1.7	1.8	1.9	2.0
12.500	2.0	2.1	2.1	2.1	2.2
13.000	2.2	2.2	2.2	2.2	2.3
13.500	2.3	2.3	2.3	2.3	2.3
14.000	2.4	2.4	2.4	2.4	2.4
14.500	2.4	2.4	2.4	2.5	2.5
15.000	2.5	2.5	2.5	2.5	2.5
15.500	2.5	2.5	2.5	2.6	2.6
16.000	2.6	2.6	2.6	2.6	2.6
16.500	2.6	2.6	2.6	2.6	2.6
17.000	2.6	2.6	2.6	2.7	2.7
17.500	2.7	2.7	2.7	2.7	2.7

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 1 years
 Storm Event: 1 YR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
18.000	2.7	2.7	2.7	2.7	2.7
18.500	2.7	2.7	2.7	2.7	2.7
19.000	2.7	2.7	2.7	2.7	2.8
19.500	2.8	2.8	2.8	2.8	2.8
20.000	2.8	2.8	2.8	2.8	2.8
20.500	2.8	2.8	2.8	2.8	2.8
21.000	2.8	2.8	2.8	2.8	2.8
21.500	2.8	2.8	2.8	2.8	2.8
22.000	2.8	2.8	2.9	2.9	2.9
22.500	2.9	2.9	2.9	2.9	2.9
23.000	2.9	2.9	2.9	2.9	2.9
23.500	2.9	2.9	2.9	2.9	2.9
24.000	2.9	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time of Concentration Calculations
Label: PDA-1A

Return Event: 1 years
Storm Event: 1 YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	59.00 ft
Manning's n	0.240
Slope	0.136 ft/ft
2 Year 24 Hour Depth	3.2 in
Average Velocity	0.22 ft/s
Segment Time of Concentration	0.073 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	193.00 ft
Is Paved?	False
Slope	0.032 ft/ft
Average Velocity	2.89 ft/s
Segment Time of Concentration	0.019 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft ²
Hydraulic Length	278.00 ft
Manning's n	0.012
Slope	0.021 ft/ft
Wetted Perimeter	3.93 ft
Average Velocity	8.19 ft/s
Segment Time of Concentration	0.009 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.101 hours

Subsection: Time of Concentration Calculations
Label: PDA-1A

Return Event: 1 years
Storm Event: 1 YR

==== SCS Channel Flow

$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n}$
 $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Where: Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Unpaved surface:
 $V = 16.1345 * (S_f^{0.5})$
Tc = Paved Surface:
 $V = 20.3282 * (S_f^{0.5})$
 $(L_f / V) / 3600$
V= Velocity, ft/sec
Where: Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

$T_c = \frac{(0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (S_f^{0.4}))}{T_c = \text{Time of concentration, hours}}$
n= Manning's n
Where: Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: PDA-1B

Return Event: 1 years
Storm Event: 1 YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	70.00 ft
Manning's n	0.011
Slope	0.070 ft/ft
2 Year 24 Hour Depth	3.2 in
Average Velocity	2.10 ft/s
Segment Time of Concentration	0.009 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	221.00 ft
Is Paved?	True
Slope	0.020 ft/ft
Average Velocity	2.87 ft/s
Segment Time of Concentration	0.021 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft ²
Hydraulic Length	200.00 ft
Manning's n	0.010
Slope	0.040 ft/ft
Wetted Perimeter	3.93 ft
Average Velocity	13.51 ft/s
Segment Time of Concentration	0.004 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

Subsection: Time of Concentration Calculations
Label: PDA-1B

Return Event: 1 years
Storm Event: 1 YR

==== SCS Channel Flow

$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n}$
 $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Where: Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Unpaved surface:
 $V = 16.1345 * (S_f^{0.5})$
Tc = Paved Surface:
 $V = 20.3282 * (S_f^{0.5})$
 $(L_f / V) / 3600$
V= Velocity, ft/sec
Where: Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

$T_c = \frac{(0.007 * ((n * L_f)^{0.8}) / ((P^{0.5}) * (S_f^{0.4}))}{T_c = \text{Time of concentration, hours}}$
n= Manning's n
Where: Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: PDA-1C

Return Event: 1 years
Storm Event: 1 YR

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	59.00 ft
Manning's n	0.011
Slope	0.021 ft/ft
2 Year 24 Hour Depth	3.2 in
Average Velocity	1.25 ft/s
Segment Time of Concentration	0.013 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	108.00 ft
Is Paved?	True
Slope	0.028 ft/ft
Average Velocity	3.38 ft/s
Segment Time of Concentration	0.009 hours

Segment #3: TR-55 Channel Flow	
Flow Area	10.0 ft ²
Hydraulic Length	112.00 ft
Manning's n	0.030
Slope	0.040 ft/ft
Wetted Perimeter	14.25 ft
Average Velocity	7.84 ft/s
Segment Time of Concentration	0.004 hours

Segment #4: TR-55 Sheet Flow	
Hydraulic Length	41.00 ft
Manning's n	0.240
Slope	0.021 ft/ft
2 Year 24 Hour Depth	3.2 in
Average Velocity	0.10 ft/s
Segment Time of Concentration	0.114 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.140 hours

Subsection: Time of Concentration Calculations
Label: PDA-1C

Return Event: 1 years
Storm Event: 1 YR

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n}$$

$(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
Where: V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

$(L_f / V) / 3600$
V= Velocity, ft/sec
Where: Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8})) / ((P^{0.5}) * (S_f^{0.4}))}{T_c = \text{Time of concentration, hours}}$$

n= Manning's n
Where: Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: PDA-1D

Return Event: 1 years
Storm Event: 1 YR

Time of Concentration Results

Segment #1: TR-55 Shallow Concentrated Flow

Hydraulic Length	483.00 ft
Is Paved?	False
Slope	0.017 ft/ft
Average Velocity	2.08 ft/s
Segment Time of Concentration	0.065 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.083 hours
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Subsection: Time of Concentration Calculations
Label: PDA-1D

Return Event: 1 years
Storm Event: 1 YR

==== SCS TR-55 Shallow Concentration Flow

Unpaved surface:
 $V = 16.1345 * (Sf^{**0.5})$

Tc = Paved Surface:
 $V = 20.3282 * (Sf^{**0.5})$

$(Lf / V) / 3600$

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Subsection: Runoff CN-Area
 Label: PDA-1A

Return Event: 1 years
 Storm Event: 1 YR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft ²)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	17,053.700	0.0	0.0	74.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	625.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	17,678.700	(N/A)	(N/A)	74.848

Subsection: Runoff CN-Area
Label: PDA-1B

Return Event: 1 years
Storm Event: 1 YR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft ²)	C (%)	UC (%)	Adjusted CN
Open space - Soil C	74.000	49,783.000	0.0	0.0	74.000
Impervious Areas	98.000	70,463.000	0.0	0.0	98.000
Woods - good - Soil C	70.000	695.500	0.0	0.0	70.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	120,941.500	(N/A)	(N/A)	87.960

Subsection: Runoff CN-Area
 Label: PDA-1C

Return Event: 1 years
 Storm Event: 1 YR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft ²)	C (%)	UC (%)	Adjusted CN
Porous Pavement-Soil C	86.000	8,992.000	0.0	0.0	86.000
Porous Pavement-Soil D	89.000	1,054.000	0.0	0.0	89.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	7,664.000	0.0	0.0	74.000
Impervious Areas	98.000	38,583.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	56,293.000	(N/A)	(N/A)	92.647

Subsection: Runoff CN-Area
 Label: PDA-1D

Return Event: 1 years
 Storm Event: 1 YR

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft ²)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	348.000	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	9,160.000	0.0	0.0	74.000
Woods - fair - Soil C	73.000	5,920.000	0.0	0.0	73.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil D	80.000	10,902.000	0.0	0.0	80.000
Woods - fair - Soil D	79.000	6,046.000	0.0	0.0	79.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	32,376.000	(N/A)	(N/A)	77.029

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1A

Return Event: 1 years
 Storm Event: 1 YR

Storm Event	1 YR
Return Event	1 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	0.101 hours
Area (User Defined)	17,678.700 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
10.850	0.00	0.00	0.00	0.00	0.00
11.100	0.00	0.00	0.01	0.01	0.01
11.350	0.01	0.01	0.01	0.01	0.02
11.600	0.02	0.03	0.04	0.05	0.07
11.850	0.08	0.11	0.16	0.25	0.31
12.100	0.35	0.34	0.26	0.22	0.20
12.350	0.18	0.15	0.13	0.11	0.09
12.600	0.08	0.07	0.07	0.06	0.06
12.850	0.06	0.05	0.05	0.05	0.05
13.100	0.05	0.04	0.04	0.04	0.04
13.350	0.04	0.04	0.04	0.04	0.04
13.600	0.04	0.04	0.04	0.04	0.04
13.850	0.04	0.04	0.03	0.03	0.03
14.100	0.03	0.03	0.03	0.03	0.03
14.350	0.03	0.03	0.03	0.03	0.03
14.600	0.03	0.03	0.03	0.03	0.03
14.850	0.03	0.03	0.03	0.03	0.03
15.100	0.03	0.03	0.02	0.02	0.02
15.350	0.02	0.02	0.02	0.02	0.02
15.600	0.02	0.02	0.02	0.02	0.02
15.850	0.02	0.02	0.02	0.02	0.02
16.100	0.02	0.02	0.02	0.02	0.02
16.350	0.02	0.02	0.02	0.02	0.02
16.600	0.02	0.02	0.02	0.02	0.02
16.850	0.02	0.02	0.02	0.02	0.02
17.100	0.02	0.01	0.01	0.01	0.01
17.350	0.01	0.01	0.01	0.01	0.01
17.600	0.01	0.01	0.01	0.01	0.01
17.850	0.01	0.01	0.01	0.01	0.01
18.100	0.01	0.01	0.01	0.01	0.01
18.350	0.01	0.01	0.01	0.01	0.01
18.600	0.01	0.01	0.01	0.01	0.01
18.850	0.01	0.01	0.01	0.01	0.01
19.100	0.01	0.01	0.01	0.01	0.01
19.350	0.01	0.01	0.01	0.01	0.01

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1A

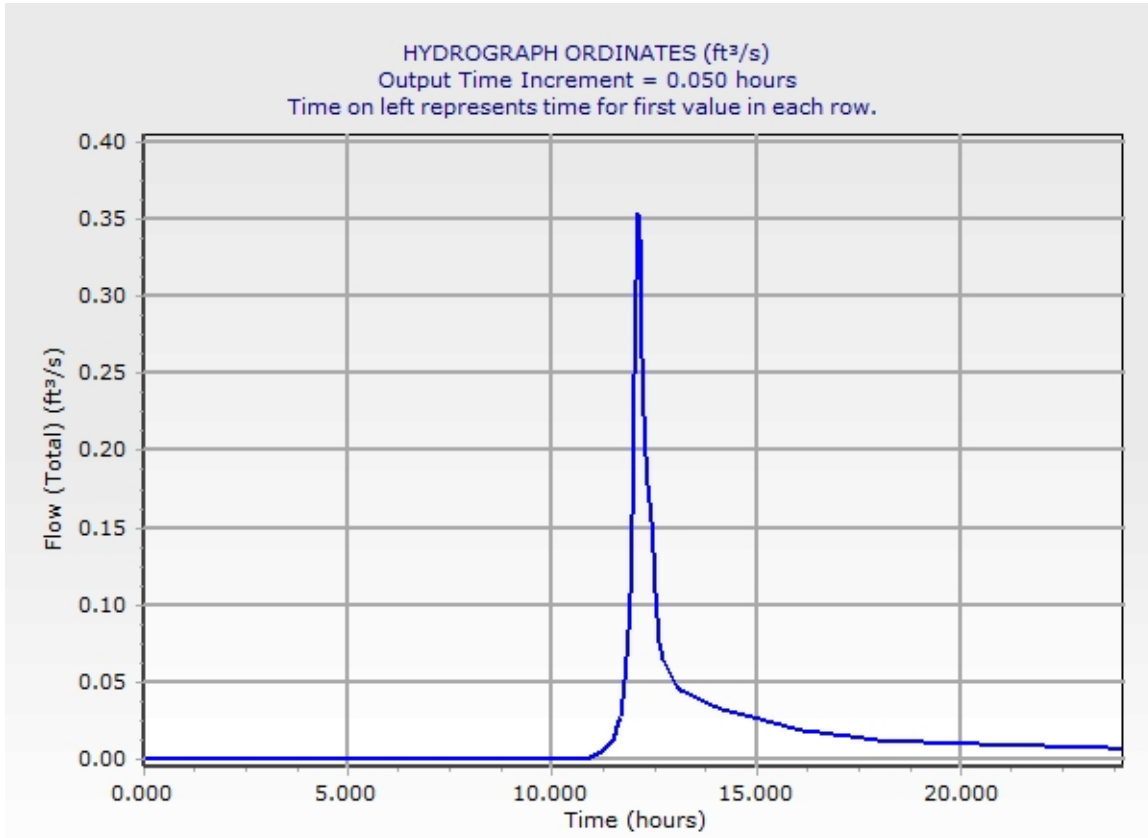
Return Event: 1 years
 Storm Event: 1 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
19.600	0.01	0.01	0.01	0.01	0.01
19.850	0.01	0.01	0.01	0.01	0.01
20.100	0.01	0.01	0.01	0.01	0.01
20.350	0.01	0.01	0.01	0.01	0.01
20.600	0.01	0.01	0.01	0.01	0.01
20.850	0.01	0.01	0.01	0.01	0.01
21.100	0.01	0.01	0.01	0.01	0.01
21.350	0.01	0.01	0.01	0.01	0.01
21.600	0.01	0.01	0.01	0.01	0.01
21.850	0.01	0.01	0.01	0.01	0.01
22.100	0.01	0.01	0.01	0.01	0.01
22.350	0.01	0.01	0.01	0.01	0.01
22.600	0.01	0.01	0.01	0.01	0.01
22.850	0.01	0.01	0.01	0.01	0.01
23.100	0.01	0.01	0.01	0.01	0.01
23.350	0.01	0.01	0.01	0.01	0.01
23.600	0.01	0.01	0.01	0.01	0.01
23.850	0.01	0.01	0.01	0.01	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1A

Return Event: 1 years
Storm Event: 1 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1B

Return Event: 1 years
 Storm Event: 1 YR

Storm Event	1 YR
Return Event	1 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	120,941.500 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
7.250	0.00	0.00	0.00	0.00	0.00
7.500	0.00	0.01	0.01	0.01	0.01
7.750	0.01	0.01	0.01	0.01	0.01
8.000	0.02	0.02	0.02	0.02	0.02
8.250	0.02	0.02	0.03	0.03	0.03
8.500	0.03	0.03	0.04	0.04	0.04
8.750	0.04	0.04	0.05	0.05	0.05
9.000	0.05	0.06	0.06	0.06	0.06
9.250	0.07	0.07	0.07	0.08	0.08
9.500	0.08	0.09	0.09	0.09	0.10
9.750	0.10	0.10	0.11	0.11	0.11
10.000	0.12	0.12	0.13	0.13	0.14
10.250	0.14	0.15	0.16	0.16	0.17
10.500	0.17	0.18	0.19	0.20	0.20
10.750	0.21	0.22	0.22	0.23	0.24
11.000	0.25	0.26	0.27	0.29	0.32
11.250	0.34	0.36	0.38	0.41	0.43
11.500	0.46	0.55	0.66	0.84	1.06
11.750	1.29	1.54	1.80	2.09	3.04
12.000	4.26	4.71	4.96	4.16	3.03
12.250	2.57	2.26	1.99	1.71	1.44
12.500	1.16	0.97	0.81	0.74	0.71
12.750	0.68	0.65	0.62	0.59	0.56
13.000	0.53	0.51	0.49	0.48	0.47
13.250	0.46	0.45	0.45	0.44	0.43
13.500	0.42	0.42	0.41	0.40	0.39
13.750	0.39	0.38	0.37	0.36	0.35
14.000	0.35	0.34	0.33	0.33	0.33
14.250	0.32	0.32	0.31	0.31	0.31
14.500	0.30	0.30	0.30	0.29	0.29
14.750	0.28	0.28	0.28	0.27	0.27
15.000	0.27	0.26	0.26	0.25	0.25
15.250	0.25	0.24	0.24	0.23	0.23
15.500	0.23	0.22	0.22	0.21	0.21
15.750	0.21	0.20	0.20	0.19	0.19

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1B

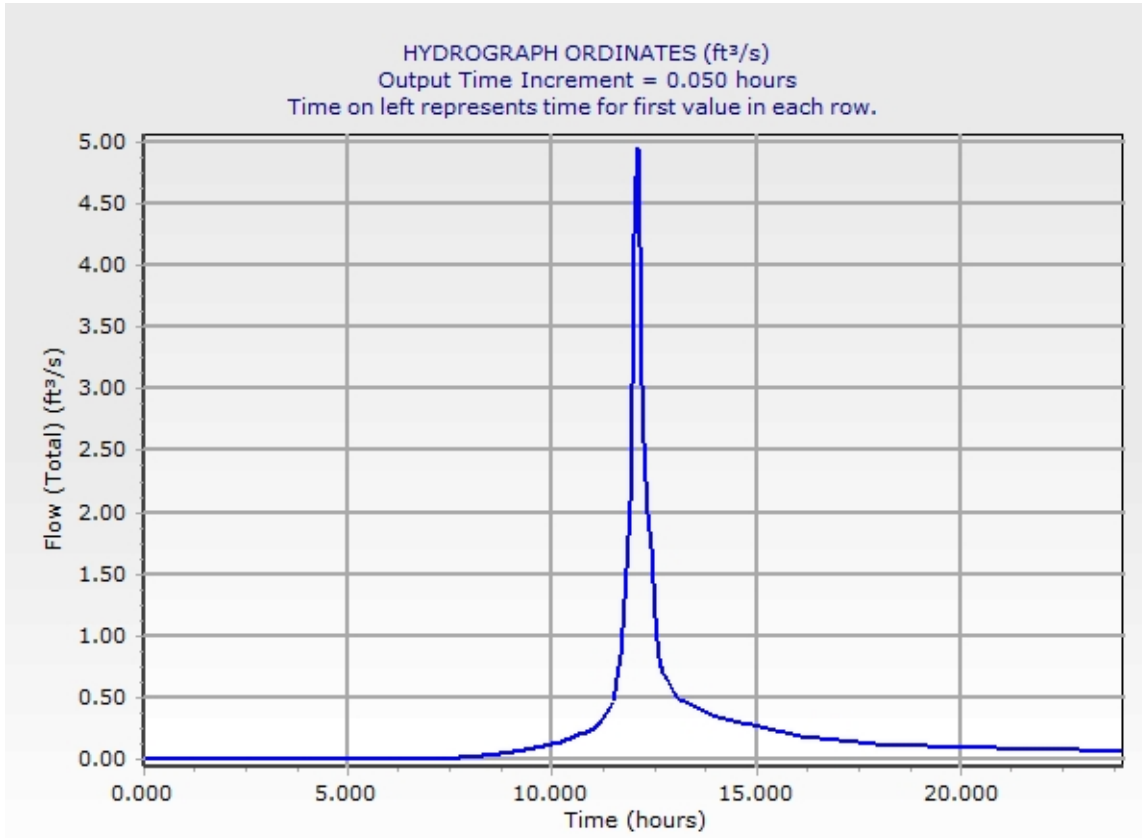
Return Event: 1 years
 Storm Event: 1 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
16.000	0.19	0.18	0.18	0.18	0.18
16.250	0.18	0.17	0.17	0.17	0.17
16.500	0.17	0.17	0.16	0.16	0.16
16.750	0.16	0.16	0.16	0.15	0.15
17.000	0.15	0.15	0.15	0.14	0.14
17.250	0.14	0.14	0.14	0.14	0.13
17.500	0.13	0.13	0.13	0.13	0.13
17.750	0.12	0.12	0.12	0.12	0.12
18.000	0.12	0.11	0.11	0.11	0.11
18.250	0.11	0.11	0.11	0.11	0.11
18.500	0.11	0.11	0.11	0.11	0.11
18.750	0.11	0.11	0.11	0.10	0.10
19.000	0.10	0.10	0.10	0.10	0.10
19.250	0.10	0.10	0.10	0.10	0.10
19.500	0.10	0.10	0.10	0.10	0.10
19.750	0.10	0.10	0.09	0.09	0.09
20.000	0.09	0.09	0.09	0.09	0.09
20.250	0.09	0.09	0.09	0.09	0.09
20.500	0.09	0.09	0.09	0.09	0.09
20.750	0.09	0.09	0.09	0.09	0.09
21.000	0.09	0.08	0.08	0.08	0.08
21.250	0.08	0.08	0.08	0.08	0.08
21.500	0.08	0.08	0.08	0.08	0.08
21.750	0.08	0.08	0.08	0.08	0.08
22.000	0.08	0.08	0.08	0.08	0.08
22.250	0.08	0.07	0.07	0.07	0.07
22.500	0.07	0.07	0.07	0.07	0.07
22.750	0.07	0.07	0.07	0.07	0.07
23.000	0.07	0.07	0.07	0.07	0.07
23.250	0.07	0.07	0.07	0.07	0.07
23.500	0.07	0.06	0.06	0.06	0.06
23.750	0.06	0.06	0.06	0.06	0.06
24.000	0.06	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1B

Return Event: 1 years
Storm Event: 1 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1C

Return Event: 1 years
 Storm Event: 1 YR

Storm Event	1 YR
Return Event	1 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	0.140 hours
Area (User Defined)	56,293.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
4.950	0.00	0.00	0.00	0.00	0.00
5.200	0.00	0.00	0.00	0.00	0.00
5.450	0.00	0.00	0.00	0.01	0.01
5.700	0.01	0.01	0.01	0.01	0.01
5.950	0.01	0.01	0.01	0.01	0.01
6.200	0.01	0.01	0.01	0.01	0.01
6.450	0.01	0.01	0.01	0.01	0.01
6.700	0.01	0.01	0.02	0.02	0.02
6.950	0.02	0.02	0.02	0.02	0.02
7.200	0.02	0.02	0.02	0.02	0.02
7.450	0.02	0.02	0.03	0.03	0.03
7.700	0.03	0.03	0.03	0.03	0.03
7.950	0.03	0.03	0.03	0.03	0.04
8.200	0.04	0.04	0.04	0.04	0.04
8.450	0.04	0.05	0.05	0.05	0.05
8.700	0.05	0.05	0.05	0.06	0.06
8.950	0.06	0.06	0.06	0.06	0.07
9.200	0.07	0.07	0.07	0.07	0.08
9.450	0.08	0.08	0.08	0.08	0.09
9.700	0.09	0.09	0.09	0.09	0.10
9.950	0.10	0.10	0.10	0.11	0.11
10.200	0.11	0.12	0.12	0.12	0.13
10.450	0.13	0.14	0.14	0.14	0.15
10.700	0.15	0.16	0.16	0.16	0.17
10.950	0.17	0.18	0.18	0.19	0.20
11.200	0.21	0.23	0.24	0.25	0.27
11.450	0.28	0.30	0.33	0.38	0.46
11.700	0.58	0.70	0.84	0.98	1.14
11.950	1.42	1.96	2.40	2.61	2.55
12.200	2.10	1.69	1.42	1.23	1.06
12.450	0.91	0.75	0.62	0.51	0.44
12.700	0.40	0.38	0.36	0.34	0.32
12.950	0.31	0.29	0.28	0.26	0.26
13.200	0.25	0.24	0.24	0.24	0.23
13.450	0.23	0.22	0.22	0.22	0.21

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1C

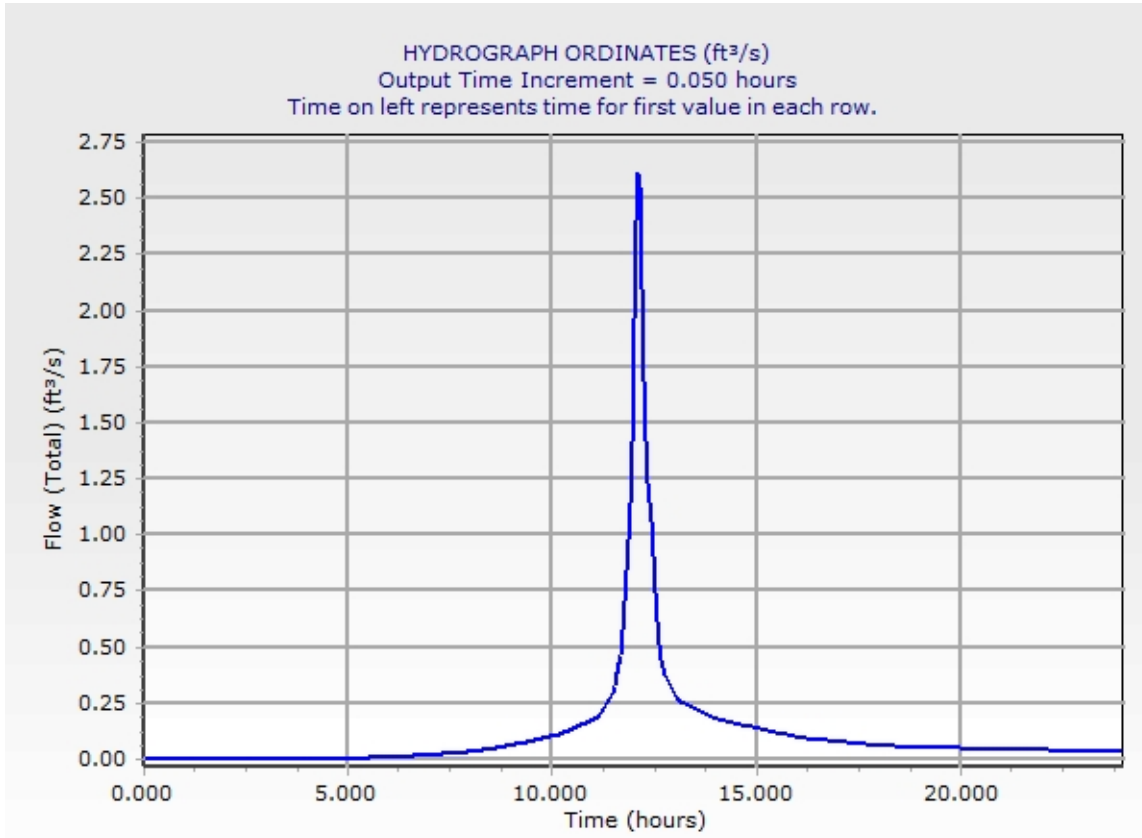
Return Event: 1 years
 Storm Event: 1 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
13.700	0.21	0.20	0.20	0.20	0.19
13.950	0.19	0.18	0.18	0.18	0.17
14.200	0.17	0.17	0.17	0.16	0.16
14.450	0.16	0.16	0.16	0.15	0.15
14.700	0.15	0.15	0.15	0.14	0.14
14.950	0.14	0.14	0.14	0.13	0.13
15.200	0.13	0.13	0.13	0.12	0.12
15.450	0.12	0.12	0.12	0.11	0.11
15.700	0.11	0.11	0.11	0.10	0.10
15.950	0.10	0.10	0.10	0.09	0.09
16.200	0.09	0.09	0.09	0.09	0.09
16.450	0.09	0.09	0.09	0.08	0.08
16.700	0.08	0.08	0.08	0.08	0.08
16.950	0.08	0.08	0.08	0.08	0.07
17.200	0.07	0.07	0.07	0.07	0.07
17.450	0.07	0.07	0.07	0.07	0.07
17.700	0.06	0.06	0.06	0.06	0.06
17.950	0.06	0.06	0.06	0.06	0.06
18.200	0.06	0.06	0.06	0.06	0.06
18.450	0.06	0.06	0.05	0.05	0.05
18.700	0.05	0.05	0.05	0.05	0.05
18.950	0.05	0.05	0.05	0.05	0.05
19.200	0.05	0.05	0.05	0.05	0.05
19.450	0.05	0.05	0.05	0.05	0.05
19.700	0.05	0.05	0.05	0.05	0.05
19.950	0.05	0.05	0.05	0.05	0.05
20.200	0.05	0.05	0.05	0.05	0.05
20.450	0.05	0.05	0.04	0.04	0.04
20.700	0.04	0.04	0.04	0.04	0.04
20.950	0.04	0.04	0.04	0.04	0.04
21.200	0.04	0.04	0.04	0.04	0.04
21.450	0.04	0.04	0.04	0.04	0.04
21.700	0.04	0.04	0.04	0.04	0.04
21.950	0.04	0.04	0.04	0.04	0.04
22.200	0.04	0.04	0.04	0.04	0.04
22.450	0.04	0.04	0.04	0.04	0.04
22.700	0.04	0.04	0.04	0.04	0.04
22.950	0.04	0.04	0.03	0.03	0.03
23.200	0.03	0.03	0.03	0.03	0.03
23.450	0.03	0.03	0.03	0.03	0.03
23.700	0.03	0.03	0.03	0.03	0.03
23.950	0.03	0.03	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1C

Return Event: 1 years
Storm Event: 1 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1D

Return Event: 1 years
 Storm Event: 1 YR

Storm Event	1 YR
Return Event	1 years
Duration	24.000 hours
Depth	2.9 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	32,376.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
10.450	0.00	0.00	0.00	0.00	0.00
10.700	0.00	0.01	0.01	0.01	0.01
10.950	0.01	0.01	0.01	0.01	0.02
11.200	0.02	0.02	0.02	0.03	0.03
11.450	0.03	0.04	0.04	0.06	0.08
11.700	0.10	0.13	0.16	0.20	0.25
11.950	0.39	0.58	0.69	0.76	0.67
12.200	0.50	0.43	0.39	0.35	0.30
12.450	0.25	0.21	0.17	0.15	0.13
12.700	0.13	0.12	0.12	0.11	0.11
12.950	0.10	0.10	0.09	0.09	0.09
13.200	0.09	0.09	0.09	0.08	0.08
13.450	0.08	0.08	0.08	0.08	0.08
13.700	0.07	0.07	0.07	0.07	0.07
13.950	0.07	0.07	0.06	0.06	0.06
14.200	0.06	0.06	0.06	0.06	0.06
14.450	0.06	0.06	0.06	0.06	0.06
14.700	0.06	0.06	0.05	0.05	0.05
14.950	0.05	0.05	0.05	0.05	0.05
15.200	0.05	0.05	0.05	0.05	0.05
15.450	0.05	0.04	0.04	0.04	0.04
15.700	0.04	0.04	0.04	0.04	0.04
15.950	0.04	0.04	0.04	0.04	0.04
16.200	0.04	0.03	0.03	0.03	0.03
16.450	0.03	0.03	0.03	0.03	0.03
16.700	0.03	0.03	0.03	0.03	0.03
16.950	0.03	0.03	0.03	0.03	0.03
17.200	0.03	0.03	0.03	0.03	0.03
17.450	0.03	0.03	0.03	0.03	0.03
17.700	0.03	0.02	0.02	0.02	0.02
17.950	0.02	0.02	0.02	0.02	0.02
18.200	0.02	0.02	0.02	0.02	0.02
18.450	0.02	0.02	0.02	0.02	0.02
18.700	0.02	0.02	0.02	0.02	0.02
18.950	0.02	0.02	0.02	0.02	0.02

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1D

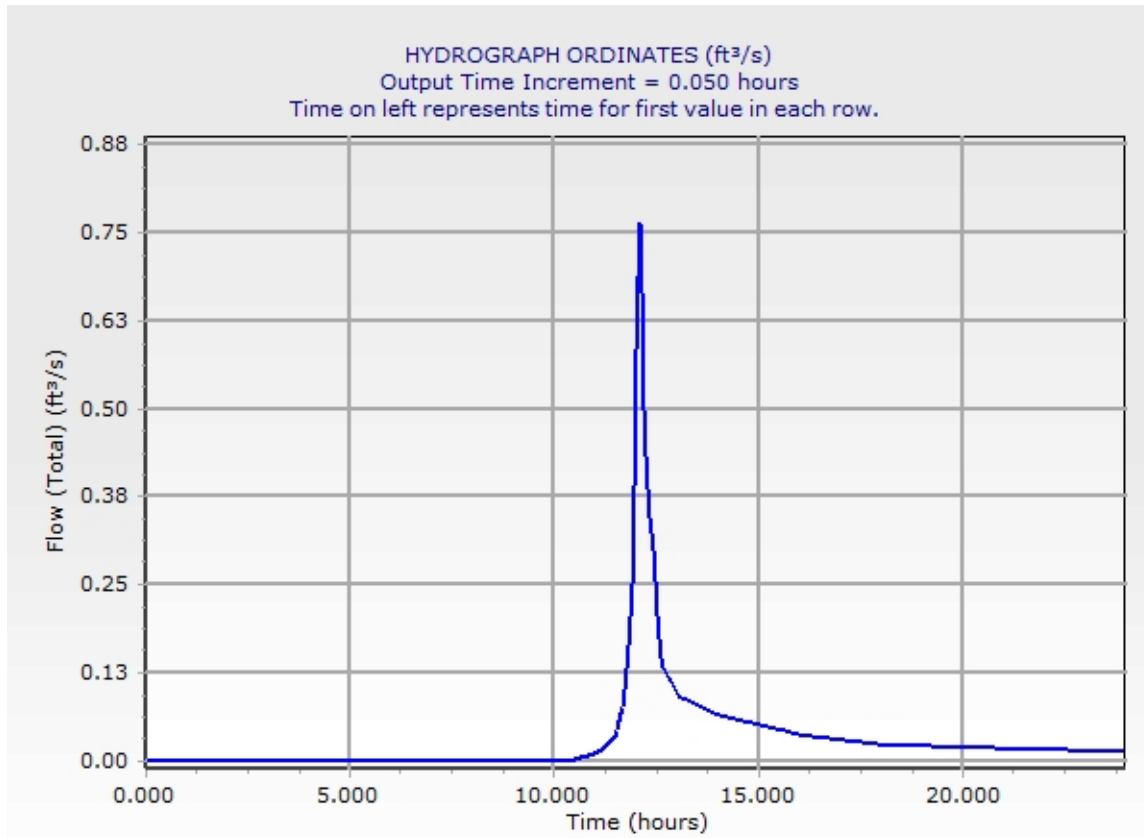
Return Event: 1 years
 Storm Event: 1 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
19.200	0.02	0.02	0.02	0.02	0.02
19.450	0.02	0.02	0.02	0.02	0.02
19.700	0.02	0.02	0.02	0.02	0.02
19.950	0.02	0.02	0.02	0.02	0.02
20.200	0.02	0.02	0.02	0.02	0.02
20.450	0.02	0.02	0.02	0.02	0.02
20.700	0.02	0.02	0.02	0.02	0.02
20.950	0.02	0.02	0.02	0.02	0.02
21.200	0.02	0.02	0.02	0.02	0.02
21.450	0.02	0.02	0.02	0.02	0.02
21.700	0.02	0.02	0.02	0.02	0.02
21.950	0.02	0.02	0.02	0.02	0.02
22.200	0.02	0.02	0.02	0.02	0.02
22.450	0.02	0.02	0.01	0.01	0.01
22.700	0.01	0.01	0.01	0.01	0.01
22.950	0.01	0.01	0.01	0.01	0.01
23.200	0.01	0.01	0.01	0.01	0.01
23.450	0.01	0.01	0.01	0.01	0.01
23.700	0.01	0.01	0.01	0.01	0.01
23.950	0.01	0.01	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1D

Return Event: 1 years
Storm Event: 1 YR



Subsection: Addition Summary
 Label: DP-1

Return Event: 1 years
 Storm Event: 1 YR

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Outlet-1B	IB-1
CO-1D	J-1D
<Catchment to Outflow Node>	PDA-1A

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-1B	0.000	0.000	0.00
Flow (From)	J-1D	2,700.867	12.100	0.76
Flow (From)	PDA-1A	1,318.057	12.100	0.35
Flow (In)	DP-1	4,018.924	12.100	1.12

Subsection: Addition Summary
Label: J-1D

Return Event: 1 years
Storm Event: 1 YR

Summary for Hydrograph Addition at 'J-1D'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1D

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PDA-1D	2,700.867	12.100	0.76
Flow (In)	J-1D	2,700.867	12.100	0.76

Subsection: Elevation-Area Volume Curve
 Label: IB-1

Return Event: 1 years
 Storm Event: 1 YR

Elevation (ft)	Planimeter (ft ²)	Area (ft ²)	A1+A2+sqr(A1*A 2) (ft ²)	Volume (ft ³)	Volume (Total) (ft ³)
405.00	0.0	3,429.000	0.000	0.000	0.000
406.00	0.0	4,707.000	12,153.500	4,051.000	4,051.000
408.00	0.0	7,831.000	18,609.286	12,406.000	16,457.000
410.00	0.0	11,172.000	28,356.498	18,904.000	35,362.000
411.15	0.0	14,100.000	37,822.904	14,499.000	49,860.000

Subsection: Outlet Input Data
 Label: OCS-IB

Return Event: 1 years
 Storm Event: 1 YR

Requested Pond Water Surface Elevations	
Minimum (Headwater)	405.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	411.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	408.00	411.00
Rectangular Weir	Weir - 1	Forward	Culvert - 1	409.50	411.00
Culvert-Circular	Culvert - 1	Forward	TW	407.50	411.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Subsection: Outlet Input Data
Label: OCS-IB

Return Event: 1 years
Storm Event: 1 YR

Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
<hr/>	
Number of Openings	1
Elevation	408.00 ft
Orifice Diameter	12.0 in
Orifice Coefficient	0.600

Subsection: Outlet Input Data
 Label: OCS-IB

Return Event: 1 years
 Storm Event: 1 YR

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	18.0 in
Length	15.00 ft
Length (Computed Barrel)	15.03 ft
Slope (Computed)	0.067 ft/ft
Outlet Control Data	
Manning's n	0.012
Ke	0.200
Kb	0.016
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	0.000
T2 ratio (HW/D)	1.164
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	407.50 ft	T1 Flow	7.58 ft ³ /s
T2 Elevation	409.25 ft	T2 Flow	8.66 ft ³ /s

Subsection: Outlet Input Data
 Label: OCS-IB

Return Event: 1 years
 Storm Event: 1 YR

Structure ID: Weir - 1	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	409.50 ft
Weir Length	6.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Subsection: Individual Outlet Curves
 Label: OCS-IB

Return Event: 1 years
 Storm Event: 1 YR

RATING TABLE FOR ONE OUTLET TYPE
 Structure ID = Orifice - 1 (Orifice-Circular)

Upstream ID = (Pond Water Surface)
 Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft ³ /s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft ³ /s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
405.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
405.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
406.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
406.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
407.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
407.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
408.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
408.50	0.76	408.50	Free Outfall	407.96	0.00	0.00	(N/A)	0.00
409.00	2.67	409.00	408.40	408.40	0.00	0.00	(N/A)	0.00
409.50	3.65	409.50	408.57	408.57	0.00	0.00	(N/A)	0.00
410.00	2.95	410.00	409.39	409.39	0.00	0.00	(N/A)	0.00
410.50	1.84	410.50	410.26	410.26	0.00	0.00	(N/A)	0.00
411.00	1.34	411.00	410.87	410.87	0.00	0.00	(N/A)	0.00

Message

WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 CRIT.DEPTH CONTROL Vh= .135ft
 Dcr= .365ft CRIT.DEPTH Hev= .00ft
 H =.50
 H =.93
 H =.61
 H =.24
 H =.13

Subsection: Individual Outlet Curves
 Label: OCS-IB

Return Event: 1 years
 Storm Event: 1 YR

RATING TABLE FOR ONE OUTLET TYPE
 Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 31.60 ft³/s
 Upstream ID = Orifice - 1, Weir - 1
 Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft ³ /s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft ³ /s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
405.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
405.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
406.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
406.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
407.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
407.50	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
408.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
408.50	0.76	407.96	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
409.00	2.67	408.40	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
409.50	3.64	408.57	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
410.00	9.20	409.39	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
410.50	13.24	410.26	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
411.00	15.34	410.87	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00

Message

WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 CRIT.DEPTH CONTROL Vh= .114ft
 Dcr= .325ft CRIT.DEPTH Hev= .00ft
 CRIT.DEPTH CONTROL Vh= .233ft
 Dcr= .620ft CRIT.DEPTH Hev= .00ft
 CRIT.DEPTH CONTROL Vh= .284ft
 Dcr= .729ft CRIT.DEPTH Hev= .00ft
 CRIT.DEPTH CONTROL Vh= .599ft
 Dcr= 1.173ft CRIT.DEPTH Hev= .00ft
 INLET CONTROL... Submerged: HW =2.76
 INLET CONTROL... Submerged: HW =3.37

Subsection: Individual Outlet Curves
 Label: OCS-IB

Return Event: 1 years
 Storm Event: 1 YR

RATING TABLE FOR ONE OUTLET TYPE
 Structure ID = Weir - 1 (Rectangular Weir)

Upstream ID = (Pond Water Surface)
 Downstream ID = Culvert - 1 (Culvert-Circular)

Water Surface Elevation (ft)	Device Flow (ft ³ /s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft ³ /s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
405.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
405.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
406.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
406.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
407.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
407.50	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
408.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
408.50	0.00	0.00	0.00	407.96	0.00	0.00	(N/A)	0.00
409.00	0.00	0.00	0.00	408.40	0.00	0.00	(N/A)	0.00
409.50	0.00	0.00	0.00	408.57	0.00	0.00	(N/A)	0.00
410.00	6.26	410.00	Free Outfall	409.39	0.00	0.00	(N/A)	0.00
410.50	11.39	410.50	410.26	410.26	0.00	0.00	(N/A)	0.00
411.00	14.01	411.00	410.87	410.87	0.00	0.00	(N/A)	0.00

Message

WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.
 H=.50; Htw=.00; Qfree=6.26;
 H=1.00; Htw=.76; Qfree=17.40;
 H=1.50; Htw=1.37; Qfree=31.41;

Subsection: Composite Rating Curve
 Label: OCS-IB

Return Event: 1 years
 Storm Event: 1 YR

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
405.00	0.00	(N/A)	0.00
405.50	0.00	(N/A)	0.00
406.00	0.00	(N/A)	0.00
406.50	0.00	(N/A)	0.00
407.00	0.00	(N/A)	0.00
407.50	0.00	(N/A)	0.00
408.00	0.00	(N/A)	0.00
408.50	0.76	(N/A)	0.00
409.00	2.67	(N/A)	0.00
409.50	3.64	(N/A)	0.00
410.00	9.20	(N/A)	0.00
410.50	13.24	(N/A)	0.00
411.00	15.34	(N/A)	0.00

Contributing Structures

(no Q: Orifice - 1,Weir - 1,Culvert - 1)
(no Q: Orifice - 1,Weir - 1,Culvert - 1)
(no Q: Orifice - 1,Weir - 1,Culvert - 1)
(no Q: Orifice - 1,Weir - 1,Culvert - 1)
(no Q: Orifice - 1,Weir - 1,Culvert - 1)
(no Q: Orifice - 1,Weir - 1,Culvert - 1)
(no Q: Orifice - 1,Weir - 1,Culvert - 1)
Orifice - 1,Culvert - 1 (no Q: Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Weir - 1)
Orifice - 1,Weir - 1,Culvert - 1
Orifice - 1,Weir - 1,Culvert - 1
Orifice - 1,Weir - 1,Culvert - 1

Subsection: Elevation-Volume-Flow Table (Pond)
 Label: IB-1

Return Event: 1 years
 Storm Event: 1 YR

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	0.56 ft ³ /s

Initial Conditions	
Elevation (Water Surface, Initial)	405.00 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (ft ²)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
405.00	0.00	0.000	3,429.000	0.00	0.00	0.00
405.50	0.00	1,865.833	4,042.750	0.56	0.56	21.29
406.00	0.00	4,051.167	4,707.000	0.56	0.56	45.57
406.50	0.00	6,579.321	5,413.857	0.56	0.56	73.66
407.00	0.00	9,473.262	6,170.143	0.56	0.56	105.82
407.50	0.00	12,757.703	6,975.857	0.56	0.56	142.31
408.00	0.00	16,457.357	7,831.000	0.56	0.56	183.42
408.50	0.76	20,566.253	8,610.749	0.56	1.32	229.84
409.00	2.67	25,074.274	9,427.499	0.56	3.23	281.83
409.50	3.64	29,999.919	10,281.249	0.56	4.20	337.54
410.00	9.20	35,361.690	11,172.000	0.56	9.76	402.67
410.50	13.24	41,252.813	12,403.220	0.56	13.80	472.16
411.00	15.34	47,775.633	13,698.784	0.56	15.90	546.74

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
2.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
3.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
4.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
4.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
5.000	0.00	0.01	0.01	0.00	0.00	0.000	405.00
5.050	0.00	0.01	0.01	0.00	0.00	1.000	405.00
5.100	0.00	0.01	0.01	0.00	0.00	1.000	405.00
5.150	0.00	0.01	0.02	0.00	0.00	1.000	405.00
5.200	0.00	0.02	0.02	0.00	0.00	2.000	405.00
5.250	0.00	0.02	0.02	0.00	0.00	2.000	405.00
5.300	0.00	0.03	0.03	0.00	0.00	2.000	405.00
5.350	0.00	0.03	0.03	0.00	0.00	3.000	405.00
5.400	0.00	0.04	0.04	0.00	0.00	3.000	405.00
5.450	0.00	0.04	0.04	0.00	0.00	4.000	405.00
5.500	0.00	0.05	0.05	0.00	0.00	4.000	405.00
5.550	0.00	0.05	0.06	0.00	0.00	5.000	405.00
5.600	0.01	0.06	0.06	0.00	0.00	5.000	405.00
5.650	0.01	0.07	0.07	0.00	0.00	6.000	405.00
5.700	0.01	0.07	0.08	0.00	0.00	6.000	405.00
5.750	0.01	0.08	0.09	0.00	0.00	7.000	405.00
5.800	0.01	0.09	0.09	0.00	0.00	8.000	405.00
5.850	0.01	0.10	0.10	0.00	0.00	8.000	405.00
5.900	0.01	0.10	0.11	0.00	0.00	9.000	405.00
5.950	0.01	0.11	0.12	0.00	0.00	10.000	405.00
6.000	0.01	0.12	0.13	0.00	0.00	10.000	405.00
6.050	0.01	0.13	0.14	0.00	0.00	11.000	405.00
6.100	0.01	0.14	0.15	0.00	0.00	12.000	405.00
6.150	0.01	0.15	0.15	0.00	0.00	12.000	405.00
6.200	0.01	0.16	0.16	0.00	0.00	13.000	405.00
6.250	0.01	0.17	0.17	0.00	0.00	14.000	405.00
6.300	0.01	0.18	0.19	0.00	0.00	15.000	405.00
6.350	0.01	0.19	0.20	0.01	0.00	16.000	405.00
6.400	0.01	0.20	0.21	0.01	0.00	17.000	405.00
6.450	0.01	0.21	0.22	0.01	0.00	18.000	405.01
6.500	0.01	0.22	0.23	0.01	0.00	19.000	405.01
6.550	0.01	0.23	0.24	0.01	0.00	20.000	405.01

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
6.600	0.01	0.24	0.26	0.01	0.00	21.000	405.01
6.650	0.01	0.26	0.27	0.01	0.00	22.000	405.01
6.700	0.01	0.27	0.28	0.01	0.00	23.000	405.01
6.750	0.01	0.28	0.30	0.01	0.00	24.000	405.01
6.800	0.02	0.30	0.31	0.01	0.00	25.000	405.01
6.850	0.02	0.31	0.33	0.01	0.00	26.000	405.01
6.900	0.02	0.32	0.34	0.01	0.00	28.000	405.01
6.950	0.02	0.34	0.36	0.01	0.00	29.000	405.01
7.000	0.02	0.35	0.37	0.01	0.00	30.000	405.01
7.050	0.02	0.37	0.39	0.01	0.00	32.000	405.01
7.100	0.02	0.39	0.41	0.01	0.00	33.000	405.01
7.150	0.02	0.40	0.43	0.01	0.00	34.000	405.01
7.200	0.02	0.42	0.44	0.01	0.00	36.000	405.01
7.250	0.02	0.44	0.46	0.01	0.00	37.000	405.01
7.300	0.02	0.46	0.48	0.01	0.00	39.000	405.01
7.350	0.02	0.48	0.50	0.01	0.00	41.000	405.01
7.400	0.03	0.50	0.53	0.01	0.00	43.000	405.01
7.450	0.03	0.52	0.55	0.01	0.00	45.000	405.01
7.500	0.03	0.55	0.58	0.02	0.00	47.000	405.01
7.550	0.03	0.58	0.61	0.02	0.00	49.000	405.01
7.600	0.03	0.61	0.64	0.02	0.00	52.000	405.02
7.650	0.03	0.64	0.68	0.02	0.00	55.000	405.02
7.700	0.04	0.67	0.71	0.02	0.00	57.000	405.02
7.750	0.04	0.71	0.75	0.02	0.00	61.000	405.02
7.800	0.04	0.75	0.79	0.02	0.00	64.000	405.02
7.850	0.04	0.78	0.83	0.02	0.00	67.000	405.02
7.900	0.04	0.82	0.87	0.02	0.00	70.000	405.02
7.950	0.05	0.87	0.91	0.02	0.00	74.000	405.02
8.000	0.05	0.91	0.96	0.03	0.00	78.000	405.02
8.050	0.05	0.95	1.01	0.03	0.00	81.000	405.02
8.100	0.05	1.00	1.06	0.03	0.00	85.000	405.02
8.150	0.05	1.05	1.11	0.03	0.00	90.000	405.03
8.200	0.06	1.10	1.16	0.03	0.00	94.000	405.03
8.250	0.06	1.15	1.22	0.03	0.00	99.000	405.03
8.300	0.06	1.21	1.28	0.03	0.00	103.000	405.03
8.350	0.07	1.27	1.34	0.04	0.00	109.000	405.03
8.400	0.07	1.33	1.41	0.04	0.00	114.000	405.03
8.450	0.07	1.40	1.47	0.04	0.00	119.000	405.03
8.500	0.08	1.47	1.55	0.04	0.00	125.000	405.04
8.550	0.08	1.54	1.62	0.04	0.00	131.000	405.04
8.600	0.08	1.61	1.70	0.04	0.00	138.000	405.04
8.650	0.09	1.69	1.78	0.05	0.00	144.000	405.04
8.700	0.09	1.77	1.86	0.05	0.00	151.000	405.04
8.750	0.09	1.85	1.95	0.05	0.00	158.000	405.05

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
8.800	0.10	1.94	2.04	0.05	0.00	166.000	405.05
8.850	0.10	2.02	2.14	0.06	0.00	174.000	405.05
8.900	0.11	2.12	2.23	0.06	0.00	182.000	405.05
8.950	0.11	2.21	2.33	0.06	0.00	190.000	405.05
9.000	0.12	2.31	2.44	0.06	0.00	198.000	405.06
9.050	0.12	2.41	2.54	0.07	0.00	207.000	405.06
9.100	0.12	2.51	2.65	0.07	0.00	216.000	405.06
9.150	0.13	2.62	2.77	0.07	0.00	225.000	405.06
9.200	0.13	2.73	2.88	0.08	0.00	235.000	405.07
9.250	0.14	2.84	3.00	0.08	0.00	245.000	405.07
9.300	0.14	2.96	3.13	0.08	0.00	255.000	405.07
9.350	0.15	3.08	3.25	0.09	0.00	265.000	405.08
9.400	0.15	3.20	3.38	0.09	0.00	276.000	405.08
9.450	0.16	3.33	3.51	0.09	0.00	287.000	405.08
9.500	0.16	3.46	3.65	0.10	0.00	298.000	405.09
9.550	0.17	3.59	3.79	0.10	0.00	310.000	405.09
9.600	0.17	3.72	3.93	0.10	0.00	321.000	405.09
9.650	0.18	3.86	4.08	0.11	0.00	334.000	405.10
9.700	0.18	4.00	4.22	0.11	0.00	346.000	405.10
9.750	0.19	4.15	4.38	0.12	0.00	359.000	405.10
9.800	0.20	4.29	4.53	0.12	0.00	371.000	405.11
9.850	0.20	4.44	4.69	0.12	0.00	385.000	405.11
9.900	0.21	4.59	4.85	0.13	0.00	398.000	405.11
9.950	0.21	4.75	5.01	0.13	0.00	412.000	405.12
10.000	0.22	4.91	5.18	0.14	0.00	426.000	405.12
10.050	0.23	5.07	5.35	0.14	0.00	440.000	405.13
10.100	0.23	5.24	5.53	0.15	0.00	455.000	405.13
10.150	0.24	5.41	5.71	0.15	0.00	470.000	405.13
10.200	0.25	5.59	5.90	0.16	0.00	487.000	405.14
10.250	0.26	5.78	6.10	0.16	0.00	503.000	405.14
10.300	0.27	5.98	6.31	0.17	0.00	521.000	405.15
10.350	0.28	6.18	6.52	0.17	0.00	539.000	405.15
10.400	0.29	6.39	6.75	0.18	0.00	558.000	405.16
10.450	0.30	6.62	6.98	0.18	0.00	578.000	405.16
10.500	0.31	6.84	7.22	0.19	0.00	599.000	405.17
10.550	0.32	7.08	7.48	0.20	0.00	620.000	405.18
10.600	0.33	7.33	7.73	0.20	0.00	642.000	405.18
10.650	0.34	7.58	8.00	0.21	0.00	665.000	405.19
10.700	0.35	7.84	8.28	0.22	0.00	689.000	405.19
10.750	0.37	8.11	8.56	0.23	0.00	713.000	405.20
10.800	0.38	8.39	8.85	0.23	0.00	739.000	405.21
10.850	0.39	8.67	9.15	0.24	0.00	765.000	405.21
10.900	0.40	8.96	9.46	0.25	0.00	791.000	405.22
10.950	0.41	9.26	9.78	0.26	0.00	819.000	405.23

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
11.000	0.43	9.57	10.10	0.27	0.00	847.000	405.24
11.050	0.44	9.89	10.44	0.27	0.00	876.000	405.25
11.100	0.47	10.23	10.80	0.28	0.00	908.000	405.25
11.150	0.49	10.60	11.19	0.29	0.00	942.000	405.26
11.200	0.53	11.01	11.62	0.31	0.00	980.000	405.27
11.250	0.56	11.46	12.10	0.32	0.00	1,023.000	405.28
11.300	0.60	11.96	12.63	0.33	0.00	1,069.000	405.30
11.350	0.64	12.51	13.20	0.35	0.00	1,121.000	405.31
11.400	0.68	13.09	13.82	0.36	0.00	1,176.000	405.32
11.450	0.72	13.73	14.49	0.38	0.00	1,236.000	405.34
11.500	0.76	14.40	15.20	0.40	0.00	1,301.000	405.36
11.550	0.88	15.19	16.04	0.42	0.00	1,377.000	405.38
11.600	1.04	16.21	17.11	0.45	0.00	1,475.000	405.40
11.650	1.31	17.59	18.56	0.49	0.00	1,609.000	405.44
11.700	1.64	19.45	20.53	0.54	0.00	1,794.000	405.48
11.750	1.99	21.95	23.07	0.56	0.00	2,015.000	405.54
11.800	2.38	25.20	26.32	0.56	0.00	2,291.000	405.60
11.850	2.78	29.24	30.36	0.56	0.00	2,643.000	405.69
11.900	3.22	34.13	35.25	0.56	0.00	3,081.000	405.79
11.950	4.46	40.69	41.81	0.56	0.00	3,690.000	405.92
12.000	6.22	50.25	51.37	0.56	0.00	4,544.000	406.10
12.050	7.11	62.46	63.58	0.56	0.00	5,631.000	406.32
12.100	7.57	76.02	77.14	0.56	0.00	6,874.000	406.55
12.150	6.71	89.18	90.30	0.56	0.00	8,029.000	406.76
12.200	5.13	99.90	101.02	0.56	0.00	9,018.000	406.93
12.250	4.26	108.17	109.29	0.56	0.00	9,769.000	407.05
12.300	3.68	114.99	116.11	0.56	0.00	10,359.000	407.14
12.350	3.22	120.78	121.90	0.56	0.00	10,871.000	407.22
12.400	2.77	125.65	126.77	0.56	0.00	11,310.000	407.29
12.450	2.35	129.65	130.77	0.56	0.00	11,675.000	407.34
12.500	1.90	132.78	133.90	0.56	0.00	11,965.000	407.38
12.550	1.59	135.15	136.27	0.56	0.00	12,186.000	407.42
12.600	1.32	136.94	138.06	0.56	0.00	12,354.000	407.44
12.650	1.19	138.33	139.45	0.56	0.00	12,485.000	407.46
12.700	1.11	139.50	140.62	0.56	0.00	12,596.000	407.48
12.750	1.05	140.54	141.66	0.56	0.00	12,696.000	407.49
12.800	1.00	141.48	142.60	0.56	0.00	12,782.000	407.50
12.850	0.96	142.32	143.44	0.56	0.00	12,854.000	407.51
12.900	0.91	143.07	144.19	0.56	0.00	12,917.000	407.52
12.950	0.87	143.73	144.85	0.56	0.00	12,974.000	407.53
13.000	0.82	144.29	145.41	0.56	0.00	13,022.000	407.54
13.050	0.78	144.78	145.90	0.56	0.00	13,063.000	407.54
13.100	0.75	145.19	146.31	0.56	0.00	13,099.000	407.55
13.150	0.73	145.56	146.68	0.56	0.00	13,131.000	407.55

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
13.200	0.72	145.89	147.01	0.56	0.00	13,159.000	407.56
13.250	0.71	146.20	147.32	0.56	0.00	13,186.000	407.56
13.300	0.69	146.48	147.60	0.56	0.00	13,210.000	407.56
13.350	0.68	146.74	147.86	0.56	0.00	13,232.000	407.57
13.400	0.67	146.97	148.09	0.56	0.00	13,252.000	407.57
13.450	0.66	147.18	148.30	0.56	0.00	13,271.000	407.57
13.500	0.65	147.37	148.49	0.56	0.00	13,287.000	407.58
13.550	0.64	147.54	148.66	0.56	0.00	13,301.000	407.58
13.600	0.62	147.68	148.80	0.56	0.00	13,313.000	407.58
13.650	0.61	147.79	148.91	0.56	0.00	13,323.000	407.58
13.700	0.60	147.89	149.01	0.56	0.00	13,331.000	407.58
13.750	0.59	147.95	149.07	0.56	0.00	13,337.000	407.58
13.800	0.58	148.00	149.12	0.56	0.00	13,341.000	407.58
13.850	0.56	148.02	149.14	0.56	0.00	13,343.000	407.58
13.900	0.55	148.02	149.14	0.56	0.00	13,343.000	407.58
13.950	0.54	147.99	149.11	0.56	0.00	13,340.000	407.58
14.000	0.53	147.94	149.06	0.56	0.00	13,336.000	407.58
14.050	0.52	147.86	148.98	0.56	0.00	13,329.000	407.58
14.100	0.51	147.77	148.89	0.56	0.00	13,321.000	407.58
14.150	0.50	147.66	148.78	0.56	0.00	13,312.000	407.58
14.200	0.50	147.54	148.66	0.56	0.00	13,301.000	407.58
14.250	0.49	147.40	148.52	0.56	0.00	13,290.000	407.58
14.300	0.48	147.26	148.38	0.56	0.00	13,277.000	407.57
14.350	0.48	147.10	148.22	0.56	0.00	13,263.000	407.57
14.400	0.47	146.93	148.05	0.56	0.00	13,249.000	407.57
14.450	0.47	146.75	147.87	0.56	0.00	13,233.000	407.57
14.500	0.46	146.56	147.68	0.56	0.00	13,216.000	407.57
14.550	0.46	146.35	147.47	0.56	0.00	13,199.000	407.56
14.600	0.45	146.14	147.26	0.56	0.00	13,180.000	407.56
14.650	0.44	145.91	147.03	0.56	0.00	13,161.000	407.56
14.700	0.44	145.67	146.79	0.56	0.00	13,140.000	407.55
14.750	0.43	145.42	146.54	0.56	0.00	13,119.000	407.55
14.800	0.43	145.16	146.28	0.56	0.00	13,096.000	407.55
14.850	0.42	144.88	146.00	0.56	0.00	13,073.000	407.54
14.900	0.41	144.60	145.72	0.56	0.00	13,048.000	407.54
14.950	0.41	144.30	145.42	0.56	0.00	13,023.000	407.54
15.000	0.40	143.99	145.11	0.56	0.00	12,996.000	407.53
15.050	0.40	143.67	144.79	0.56	0.00	12,969.000	407.53
15.100	0.39	143.34	144.46	0.56	0.00	12,941.000	407.53
15.150	0.39	143.00	144.12	0.56	0.00	12,911.000	407.52
15.200	0.38	142.64	143.76	0.56	0.00	12,881.000	407.52
15.250	0.37	142.27	143.39	0.56	0.00	12,850.000	407.51
15.300	0.37	141.90	143.02	0.56	0.00	12,817.000	407.51
15.350	0.36	141.50	142.62	0.56	0.00	12,784.000	407.50

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
15.400	0.36	141.10	142.22	0.56	0.00	12,749.000	407.50
15.450	0.35	140.69	141.81	0.56	0.00	12,709.000	407.49
15.500	0.34	140.26	141.38	0.56	0.00	12,669.000	407.49
15.550	0.34	139.82	140.94	0.56	0.00	12,627.000	407.48
15.600	0.33	139.37	140.49	0.56	0.00	12,584.000	407.48
15.650	0.33	138.91	140.03	0.56	0.00	12,540.000	407.47
15.700	0.32	138.44	139.56	0.56	0.00	12,496.000	407.46
15.750	0.31	137.95	139.07	0.56	0.00	12,450.000	407.46
15.800	0.31	137.45	138.57	0.56	0.00	12,403.000	407.45
15.850	0.30	136.94	138.06	0.56	0.00	12,354.000	407.44
15.900	0.30	136.42	137.54	0.56	0.00	12,305.000	407.43
15.950	0.29	135.89	137.01	0.56	0.00	12,255.000	407.43
16.000	0.28	135.34	136.46	0.56	0.00	12,204.000	407.42
16.050	0.28	134.79	135.91	0.56	0.00	12,152.000	407.41
16.100	0.28	134.22	135.34	0.56	0.00	12,099.000	407.40
16.150	0.27	133.65	134.77	0.56	0.00	12,046.000	407.40
16.200	0.27	133.07	134.19	0.56	0.00	11,991.000	407.39
16.250	0.27	132.48	133.60	0.56	0.00	11,937.000	407.38
16.300	0.26	131.89	133.01	0.56	0.00	11,882.000	407.37
16.350	0.26	131.30	132.42	0.56	0.00	11,827.000	407.36
16.400	0.26	130.69	131.81	0.56	0.00	11,771.000	407.36
16.450	0.26	130.09	131.21	0.56	0.00	11,716.000	407.35
16.500	0.25	129.48	130.60	0.56	0.00	11,659.000	407.34
16.550	0.25	128.86	129.98	0.56	0.00	11,603.000	407.33
16.600	0.25	128.24	129.36	0.56	0.00	11,546.000	407.32
16.650	0.25	127.61	128.73	0.56	0.00	11,488.000	407.31
16.700	0.24	126.98	128.10	0.56	0.00	11,430.000	407.31
16.750	0.24	126.34	127.46	0.56	0.00	11,372.000	407.30
16.800	0.24	125.70	126.82	0.56	0.00	11,314.000	407.29
16.850	0.23	125.05	126.17	0.56	0.00	11,255.000	407.28
16.900	0.23	124.40	125.52	0.56	0.00	11,196.000	407.27
16.950	0.23	123.74	124.86	0.56	0.00	11,137.000	407.26
17.000	0.23	123.08	124.20	0.56	0.00	11,077.000	407.25
17.050	0.22	122.41	123.53	0.56	0.00	11,017.000	407.24
17.100	0.22	121.73	122.85	0.56	0.00	10,956.000	407.23
17.150	0.22	121.06	122.18	0.56	0.00	10,896.000	407.22
17.200	0.22	120.37	121.49	0.56	0.00	10,835.000	407.21
17.250	0.21	119.68	120.80	0.56	0.00	10,773.000	407.21
17.300	0.21	118.99	120.11	0.56	0.00	10,711.000	407.20
17.350	0.21	118.29	119.41	0.56	0.00	10,649.000	407.19
17.400	0.21	117.58	118.70	0.56	0.00	10,587.000	407.18
17.450	0.20	116.87	117.99	0.56	0.00	10,524.000	407.17
17.500	0.20	116.16	117.28	0.56	0.00	10,461.000	407.16
17.550	0.20	115.44	116.56	0.56	0.00	10,398.000	407.15

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
17.600	0.20	114.71	115.83	0.56	0.00	10,334.000	407.14
17.650	0.19	113.98	115.10	0.56	0.00	10,270.000	407.13
17.700	0.19	113.24	114.36	0.56	0.00	10,206.000	407.12
17.750	0.19	112.50	113.62	0.56	0.00	10,142.000	407.11
17.800	0.18	111.75	112.87	0.56	0.00	10,077.000	407.10
17.850	0.18	111.00	112.12	0.56	0.00	10,012.000	407.09
17.900	0.18	110.24	111.36	0.56	0.00	9,946.000	407.08
17.950	0.18	109.48	110.60	0.56	0.00	9,881.000	407.07
18.000	0.17	108.71	109.83	0.56	0.00	9,815.000	407.05
18.050	0.17	107.94	109.06	0.56	0.00	9,749.000	407.04
18.100	0.17	107.16	108.28	0.56	0.00	9,682.000	407.03
18.150	0.17	106.38	107.50	0.56	0.00	9,616.000	407.02
18.200	0.17	105.60	106.72	0.56	0.00	9,549.000	407.01
18.250	0.17	104.81	105.93	0.56	0.00	9,483.000	407.00
18.300	0.17	104.03	105.15	0.56	0.00	9,409.000	406.99
18.350	0.17	103.24	104.36	0.56	0.00	9,334.000	406.98
18.400	0.17	102.45	103.57	0.56	0.00	9,259.000	406.97
18.450	0.16	101.66	102.78	0.56	0.00	9,184.000	406.95
18.500	0.16	100.87	101.99	0.56	0.00	9,109.000	406.94
18.550	0.16	100.08	101.20	0.56	0.00	9,034.000	406.93
18.600	0.16	99.28	100.40	0.56	0.00	8,959.000	406.92
18.650	0.16	98.49	99.61	0.56	0.00	8,885.000	406.90
18.700	0.16	97.69	98.81	0.56	0.00	8,810.000	406.89
18.750	0.16	96.89	98.01	0.56	0.00	8,736.000	406.88
18.800	0.16	96.09	97.21	0.56	0.00	8,661.000	406.87
18.850	0.16	95.29	96.41	0.56	0.00	8,587.000	406.85
18.900	0.16	94.48	95.60	0.56	0.00	8,513.000	406.84
18.950	0.16	93.68	94.80	0.56	0.00	8,439.000	406.83
19.000	0.16	92.87	93.99	0.56	0.00	8,365.000	406.82
19.050	0.16	92.06	93.18	0.56	0.00	8,291.000	406.80
19.100	0.15	91.25	92.37	0.56	0.00	8,217.000	406.79
19.150	0.15	90.44	91.56	0.56	0.00	8,143.000	406.78
19.200	0.15	89.63	90.75	0.56	0.00	8,070.000	406.77
19.250	0.15	88.81	89.93	0.56	0.00	7,996.000	406.75
19.300	0.15	87.99	89.11	0.56	0.00	7,923.000	406.74
19.350	0.15	87.18	88.30	0.56	0.00	7,849.000	406.73
19.400	0.15	86.36	87.48	0.56	0.00	7,776.000	406.71
19.450	0.15	85.54	86.66	0.56	0.00	7,703.000	406.70
19.500	0.15	84.71	85.83	0.56	0.00	7,630.000	406.69
19.550	0.15	83.89	85.01	0.56	0.00	7,557.000	406.68
19.600	0.15	83.06	84.18	0.56	0.00	7,485.000	406.66
19.650	0.15	82.24	83.36	0.56	0.00	7,412.000	406.65
19.700	0.14	81.41	82.53	0.56	0.00	7,339.000	406.64
19.750	0.14	80.58	81.70	0.56	0.00	7,267.000	406.62

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
19.800	0.14	79.74	80.86	0.56	0.00	7,195.000	406.61
19.850	0.14	78.91	80.03	0.56	0.00	7,122.000	406.60
19.900	0.14	78.07	79.19	0.56	0.00	7,050.000	406.59
19.950	0.14	77.24	78.36	0.56	0.00	6,978.000	406.57
20.000	0.14	76.40	77.52	0.56	0.00	6,907.000	406.56
20.050	0.14	75.56	76.68	0.56	0.00	6,835.000	406.55
20.100	0.14	74.72	75.84	0.56	0.00	6,763.000	406.53
20.150	0.14	73.87	74.99	0.56	0.00	6,692.000	406.52
20.200	0.14	73.03	74.15	0.56	0.00	6,620.000	406.51
20.250	0.14	72.19	73.31	0.56	0.00	6,545.000	406.49
20.300	0.14	71.34	72.46	0.56	0.00	6,464.000	406.48
20.350	0.14	70.49	71.61	0.56	0.00	6,383.000	406.46
20.400	0.14	69.64	70.76	0.56	0.00	6,302.000	406.45
20.450	0.13	68.79	69.91	0.56	0.00	6,221.000	406.43
20.500	0.13	67.94	69.06	0.56	0.00	6,141.000	406.42
20.550	0.13	67.09	68.21	0.56	0.00	6,061.000	406.40
20.600	0.13	66.24	67.36	0.56	0.00	5,981.000	406.39
20.650	0.13	65.38	66.50	0.56	0.00	5,901.000	406.37
20.700	0.13	64.53	65.65	0.56	0.00	5,822.000	406.36
20.750	0.13	63.67	64.79	0.56	0.00	5,742.000	406.34
20.800	0.13	62.81	63.93	0.56	0.00	5,663.000	406.33
20.850	0.13	61.95	63.07	0.56	0.00	5,584.000	406.31
20.900	0.13	61.09	62.21	0.56	0.00	5,506.000	406.30
20.950	0.13	60.23	61.35	0.56	0.00	5,428.000	406.28
21.000	0.13	59.37	60.49	0.56	0.00	5,349.000	406.27
21.050	0.13	58.50	59.62	0.56	0.00	5,272.000	406.25
21.100	0.13	57.64	58.76	0.56	0.00	5,194.000	406.23
21.150	0.13	56.77	57.89	0.56	0.00	5,117.000	406.22
21.200	0.13	55.91	57.03	0.56	0.00	5,039.000	406.20
21.250	0.13	55.04	56.16	0.56	0.00	4,962.000	406.19
21.300	0.12	54.17	55.29	0.56	0.00	4,886.000	406.17
21.350	0.12	53.30	54.42	0.56	0.00	4,809.000	406.16
21.400	0.12	52.42	53.54	0.56	0.00	4,733.000	406.14
21.450	0.12	51.55	52.67	0.56	0.00	4,657.000	406.13
21.500	0.12	50.67	51.79	0.56	0.00	4,581.000	406.11
21.550	0.12	49.80	50.92	0.56	0.00	4,505.000	406.10
21.600	0.12	48.92	50.04	0.56	0.00	4,430.000	406.08
21.650	0.12	48.04	49.16	0.56	0.00	4,355.000	406.06
21.700	0.12	47.16	48.28	0.56	0.00	4,280.000	406.05
21.750	0.12	46.28	47.40	0.56	0.00	4,205.000	406.03
21.800	0.12	45.40	46.52	0.56	0.00	4,131.000	406.02
21.850	0.12	44.52	45.64	0.56	0.00	4,057.000	406.00
21.900	0.12	43.64	44.76	0.56	0.00	3,972.000	405.98
21.950	0.12	42.75	43.87	0.56	0.00	3,887.000	405.96

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 1 years
 Storm Event: 1 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
22.000	0.12	41.86	42.98	0.56	0.00	3,802.000	405.95
22.050	0.12	40.98	42.10	0.56	0.00	3,718.000	405.93
22.100	0.12	40.09	41.21	0.56	0.00	3,633.000	405.91
22.150	0.11	39.20	40.32	0.56	0.00	3,550.000	405.89
22.200	0.11	38.31	39.43	0.56	0.00	3,466.000	405.87
22.250	0.11	37.41	38.53	0.56	0.00	3,383.000	405.86
22.300	0.11	36.52	37.64	0.56	0.00	3,300.000	405.84
22.350	0.11	35.62	36.74	0.56	0.00	3,218.000	405.82
22.400	0.11	34.73	35.85	0.56	0.00	3,136.000	405.80
22.450	0.11	33.83	34.95	0.56	0.00	3,054.000	405.78
22.500	0.11	32.93	34.05	0.56	0.00	2,973.000	405.76
22.550	0.11	32.03	33.15	0.56	0.00	2,892.000	405.74
22.600	0.11	31.13	32.25	0.56	0.00	2,811.000	405.73
22.650	0.11	30.23	31.35	0.56	0.00	2,731.000	405.71
22.700	0.11	29.33	30.45	0.56	0.00	2,651.000	405.69
22.750	0.11	28.42	29.54	0.56	0.00	2,571.000	405.67
22.800	0.11	27.52	28.64	0.56	0.00	2,492.000	405.65
22.850	0.11	26.61	27.73	0.56	0.00	2,413.000	405.63
22.900	0.11	25.70	26.82	0.56	0.00	2,335.000	405.61
22.950	0.11	24.79	25.91	0.56	0.00	2,256.000	405.60
23.000	0.10	23.88	25.00	0.56	0.00	2,179.000	405.58
23.050	0.10	22.97	24.09	0.56	0.00	2,101.000	405.56
23.100	0.10	22.06	23.18	0.56	0.00	2,024.000	405.54
23.150	0.10	21.14	22.26	0.56	0.00	1,947.000	405.52
23.200	0.10	20.23	21.35	0.56	0.00	1,871.000	405.50
23.250	0.10	19.36	20.43	0.54	0.00	1,785.000	405.48
23.300	0.10	18.53	19.56	0.51	0.00	1,703.000	405.46
23.350	0.10	17.75	18.73	0.49	0.00	1,625.000	405.44
23.400	0.10	17.00	17.95	0.47	0.00	1,552.000	405.42
23.450	0.10	16.30	17.20	0.45	0.00	1,484.000	405.40
23.500	0.10	15.63	16.50	0.43	0.00	1,419.000	405.39
23.550	0.10	14.99	15.82	0.42	0.00	1,357.000	405.37
23.600	0.10	14.39	15.19	0.40	0.00	1,299.000	405.36
23.650	0.10	13.82	14.58	0.38	0.00	1,245.000	405.34
23.700	0.10	13.27	14.01	0.37	0.00	1,193.000	405.33
23.750	0.10	12.76	13.46	0.35	0.00	1,144.000	405.32
23.800	0.10	12.26	12.95	0.34	0.00	1,098.000	405.30
23.850	0.09	11.80	12.45	0.33	0.00	1,054.000	405.29
23.900	0.09	11.36	11.99	0.32	0.00	1,013.000	405.28
23.950	0.09	10.94	11.54	0.30	0.00	973.000	405.27
24.000	0.09	10.54	11.12	0.29	0.00	936.000	405.26

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 10 years
 Storm Event: 10 YR

Time-Depth Curve: 10 YR

Label	10 YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.4	0.4	0.4	0.4	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.5	0.5	0.5	0.5
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.6	0.6	0.6	0.6	0.6
8.000	0.6	0.6	0.7	0.7	0.7
8.500	0.7	0.7	0.7	0.8	0.8
9.000	0.8	0.8	0.8	0.9	0.9
9.500	0.9	0.9	1.0	1.0	1.0
10.000	1.0	1.1	1.1	1.1	1.2
10.500	1.2	1.2	1.3	1.3	1.3
11.000	1.4	1.4	1.5	1.5	1.6
11.500	1.6	1.7	1.9	2.1	2.3
12.000	2.7	3.2	3.4	3.6	3.8
12.500	3.9	3.9	4.0	4.0	4.1
13.000	4.1	4.2	4.2	4.2	4.3
13.500	4.3	4.3	4.4	4.4	4.4
14.000	4.5	4.5	4.5	4.5	4.6
14.500	4.6	4.6	4.6	4.7	4.7
15.000	4.7	4.7	4.7	4.8	4.8
15.500	4.8	4.8	4.8	4.8	4.9
16.000	4.9	4.9	4.9	4.9	4.9
16.500	4.9	5.0	5.0	5.0	5.0
17.000	5.0	5.0	5.0	5.0	5.0
17.500	5.1	5.1	5.1	5.1	5.1

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 10 years
 Storm Event: 10 YR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
18.000	5.1	5.1	5.1	5.1	5.1
18.500	5.1	5.2	5.2	5.2	5.2
19.000	5.2	5.2	5.2	5.2	5.2
19.500	5.2	5.2	5.2	5.2	5.3
20.000	5.3	5.3	5.3	5.3	5.3
20.500	5.3	5.3	5.3	5.3	5.3
21.000	5.3	5.3	5.3	5.4	5.4
21.500	5.4	5.4	5.4	5.4	5.4
22.000	5.4	5.4	5.4	5.4	5.4
22.500	5.4	5.4	5.4	5.4	5.4
23.000	5.5	5.5	5.5	5.5	5.5
23.500	5.5	5.5	5.5	5.5	5.5
24.000	5.5	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1A

Return Event: 10 years
 Storm Event: 10 YR

Storm Event	10 YR
Return Event	10 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.101 hours
Area (User Defined)	17,678.700 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
8.450	0.00	0.00	0.00	0.00	0.00
8.700	0.00	0.00	0.00	0.00	0.00
8.950	0.01	0.01	0.01	0.01	0.01
9.200	0.01	0.01	0.01	0.01	0.01
9.450	0.01	0.01	0.01	0.01	0.01
9.700	0.01	0.02	0.02	0.02	0.02
9.950	0.02	0.02	0.02	0.02	0.02
10.200	0.02	0.03	0.03	0.03	0.03
10.450	0.03	0.03	0.03	0.04	0.04
10.700	0.04	0.04	0.04	0.04	0.05
10.950	0.05	0.05	0.05	0.06	0.06
11.200	0.06	0.07	0.07	0.08	0.09
11.450	0.09	0.10	0.11	0.14	0.17
11.700	0.22	0.27	0.33	0.39	0.47
11.950	0.64	0.94	1.10	1.18	1.08
12.200	0.81	0.68	0.59	0.52	0.45
12.450	0.38	0.31	0.26	0.21	0.19
12.700	0.18	0.17	0.17	0.16	0.15
12.950	0.14	0.14	0.13	0.13	0.12
13.200	0.12	0.12	0.12	0.11	0.11
13.450	0.11	0.11	0.11	0.11	0.10
13.700	0.10	0.10	0.10	0.10	0.09
13.950	0.09	0.09	0.09	0.09	0.08
14.200	0.08	0.08	0.08	0.08	0.08
14.450	0.08	0.08	0.08	0.08	0.08
14.700	0.07	0.07	0.07	0.07	0.07
14.950	0.07	0.07	0.07	0.07	0.07
15.200	0.06	0.06	0.06	0.06	0.06
15.450	0.06	0.06	0.06	0.06	0.06
15.700	0.05	0.05	0.05	0.05	0.05
15.950	0.05	0.05	0.05	0.05	0.05
16.200	0.05	0.05	0.05	0.04	0.04
16.450	0.04	0.04	0.04	0.04	0.04
16.700	0.04	0.04	0.04	0.04	0.04
16.950	0.04	0.04	0.04	0.04	0.04

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1A

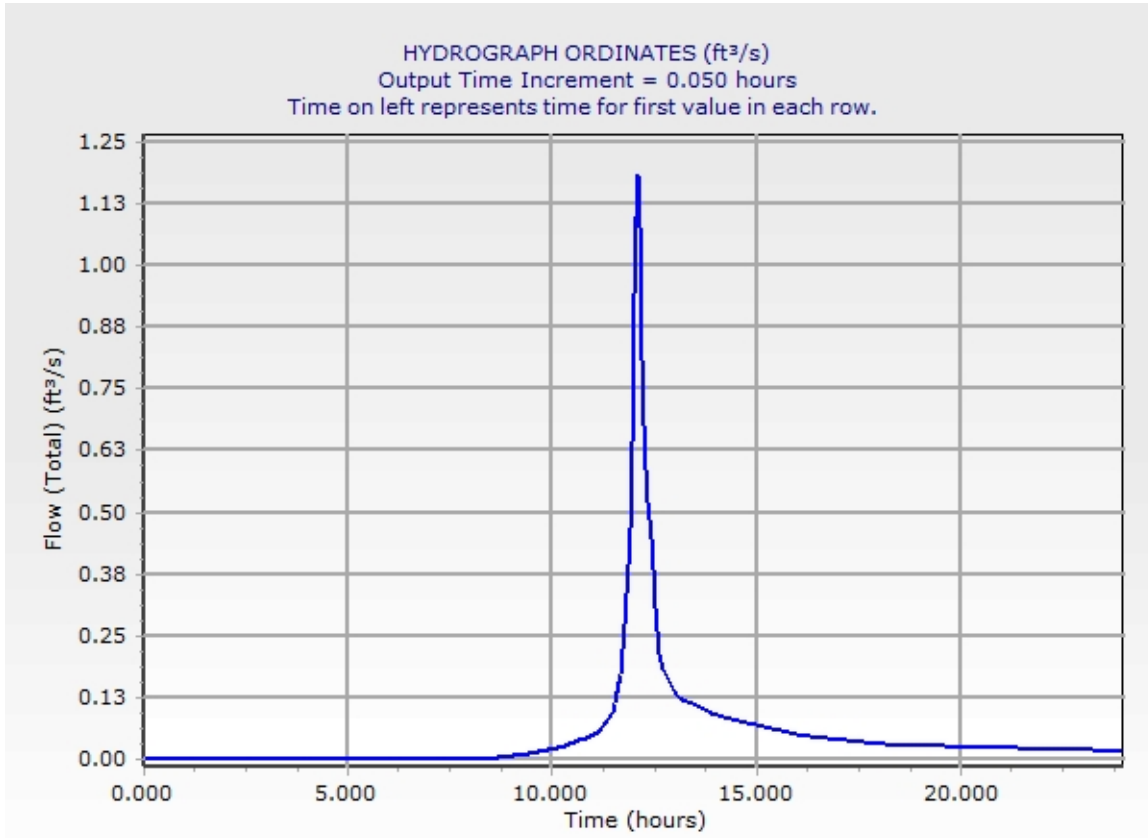
Return Event: 10 years
 Storm Event: 10 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
17.200	0.04	0.04	0.04	0.04	0.04
17.450	0.04	0.03	0.03	0.03	0.03
17.700	0.03	0.03	0.03	0.03	0.03
17.950	0.03	0.03	0.03	0.03	0.03
18.200	0.03	0.03	0.03	0.03	0.03
18.450	0.03	0.03	0.03	0.03	0.03
18.700	0.03	0.03	0.03	0.03	0.03
18.950	0.03	0.03	0.03	0.03	0.03
19.200	0.03	0.03	0.03	0.03	0.03
19.450	0.03	0.03	0.03	0.03	0.03
19.700	0.03	0.02	0.02	0.02	0.02
19.950	0.02	0.02	0.02	0.02	0.02
20.200	0.02	0.02	0.02	0.02	0.02
20.450	0.02	0.02	0.02	0.02	0.02
20.700	0.02	0.02	0.02	0.02	0.02
20.950	0.02	0.02	0.02	0.02	0.02
21.200	0.02	0.02	0.02	0.02	0.02
21.450	0.02	0.02	0.02	0.02	0.02
21.700	0.02	0.02	0.02	0.02	0.02
21.950	0.02	0.02	0.02	0.02	0.02
22.200	0.02	0.02	0.02	0.02	0.02
22.450	0.02	0.02	0.02	0.02	0.02
22.700	0.02	0.02	0.02	0.02	0.02
22.950	0.02	0.02	0.02	0.02	0.02
23.200	0.02	0.02	0.02	0.02	0.02
23.450	0.02	0.02	0.02	0.02	0.02
23.700	0.02	0.02	0.02	0.02	0.02
23.950	0.02	0.02	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1A

Return Event: 10 years
Storm Event: 10 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1B

Return Event: 10 years
 Storm Event: 10 YR

Storm Event	10 YR
Return Event	10 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	120,941.500 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
4.550	0.00	0.00	0.00	0.00	0.00
4.800	0.01	0.01	0.01	0.01	0.01
5.050	0.01	0.01	0.01	0.02	0.02
5.300	0.02	0.02	0.02	0.02	0.02
5.550	0.02	0.03	0.03	0.03	0.03
5.800	0.03	0.03	0.03	0.04	0.04
6.050	0.04	0.04	0.04	0.04	0.05
6.300	0.05	0.05	0.05	0.05	0.06
6.550	0.06	0.06	0.06	0.07	0.07
6.800	0.07	0.07	0.08	0.08	0.08
7.050	0.08	0.09	0.09	0.09	0.10
7.300	0.10	0.10	0.10	0.11	0.11
7.550	0.11	0.12	0.12	0.12	0.13
7.800	0.13	0.13	0.14	0.14	0.14
8.050	0.15	0.15	0.16	0.16	0.17
8.300	0.17	0.18	0.19	0.19	0.20
8.550	0.21	0.21	0.22	0.23	0.23
8.800	0.24	0.25	0.25	0.26	0.27
9.050	0.28	0.28	0.29	0.30	0.31
9.300	0.31	0.32	0.33	0.34	0.35
9.550	0.35	0.36	0.37	0.38	0.39
9.800	0.40	0.41	0.42	0.42	0.43
10.050	0.44	0.46	0.47	0.49	0.50
10.300	0.52	0.53	0.55	0.57	0.58
10.550	0.60	0.62	0.63	0.65	0.67
10.800	0.68	0.70	0.72	0.74	0.76
11.050	0.79	0.82	0.88	0.93	0.99
11.300	1.05	1.11	1.17	1.23	1.29
11.550	1.53	1.81	2.29	2.83	3.40
11.800	3.99	4.60	5.23	7.46	10.21
12.050	11.05	11.38	9.42	6.79	5.70
12.300	4.99	4.36	3.74	3.13	2.51
12.550	2.10	1.74	1.61	1.53	1.46
12.800	1.39	1.33	1.26	1.20	1.13
13.050	1.09	1.04	1.02	1.00	0.99

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1B

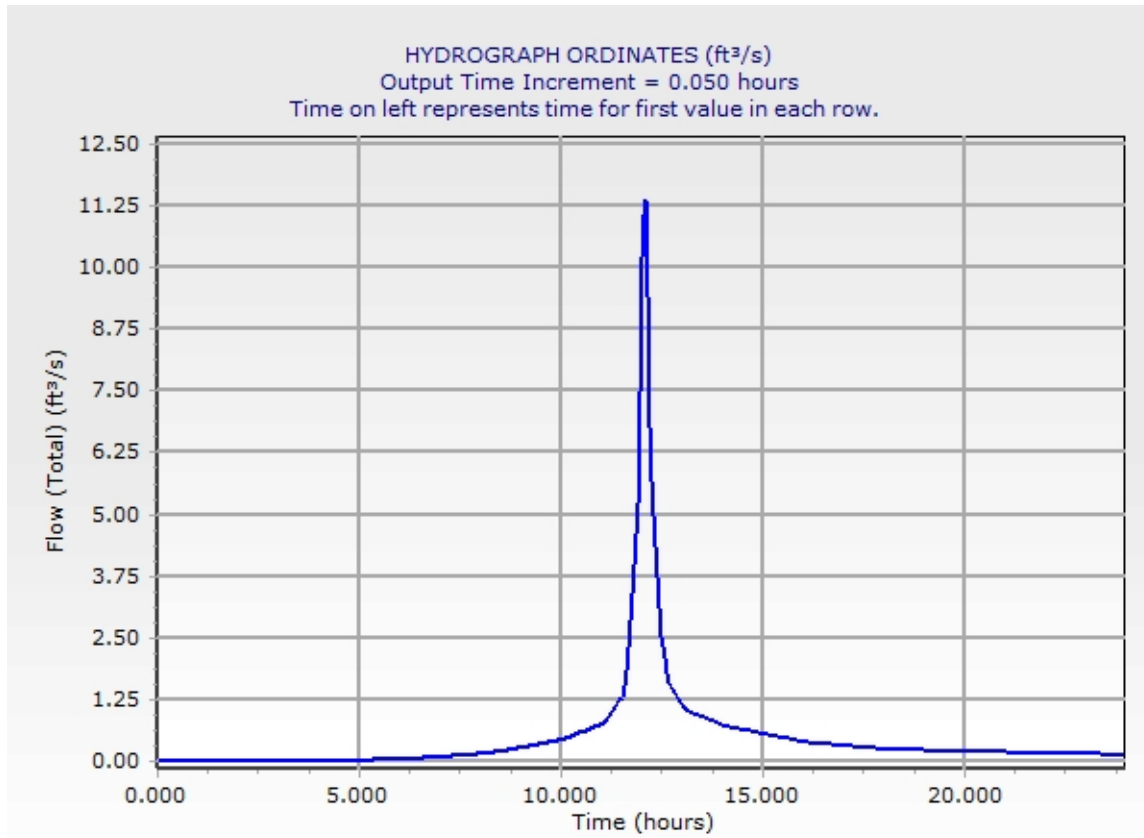
Return Event: 10 years
 Storm Event: 10 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
13.300	0.97	0.95	0.94	0.92	0.90
13.550	0.88	0.87	0.85	0.83	0.82
13.800	0.80	0.78	0.77	0.75	0.73
14.050	0.72	0.70	0.70	0.69	0.68
14.300	0.67	0.66	0.65	0.65	0.64
14.550	0.63	0.62	0.61	0.61	0.60
14.800	0.59	0.58	0.57	0.56	0.56
15.050	0.55	0.54	0.53	0.52	0.52
15.300	0.51	0.50	0.49	0.48	0.47
15.550	0.47	0.46	0.45	0.44	0.43
15.800	0.42	0.42	0.41	0.40	0.39
16.050	0.38	0.38	0.37	0.37	0.37
16.300	0.36	0.36	0.35	0.35	0.35
16.550	0.34	0.34	0.34	0.33	0.33
16.800	0.33	0.32	0.32	0.32	0.31
17.050	0.31	0.31	0.30	0.30	0.29
17.300	0.29	0.29	0.28	0.28	0.28
17.550	0.27	0.27	0.26	0.26	0.26
17.800	0.25	0.25	0.25	0.24	0.24
18.050	0.24	0.23	0.23	0.23	0.23
18.300	0.23	0.23	0.23	0.23	0.22
18.550	0.22	0.22	0.22	0.22	0.22
18.800	0.22	0.22	0.22	0.22	0.21
19.050	0.21	0.21	0.21	0.21	0.21
19.300	0.21	0.21	0.21	0.20	0.20
19.550	0.20	0.20	0.20	0.20	0.20
19.800	0.20	0.20	0.19	0.19	0.19
20.050	0.19	0.19	0.19	0.19	0.19
20.300	0.19	0.19	0.19	0.18	0.18
20.550	0.18	0.18	0.18	0.18	0.18
20.800	0.18	0.18	0.18	0.18	0.18
21.050	0.18	0.17	0.17	0.17	0.17
21.300	0.17	0.17	0.17	0.17	0.17
21.550	0.17	0.17	0.17	0.16	0.16
21.800	0.16	0.16	0.16	0.16	0.16
22.050	0.16	0.16	0.16	0.16	0.15
22.300	0.15	0.15	0.15	0.15	0.15
22.550	0.15	0.15	0.15	0.15	0.15
22.800	0.15	0.15	0.14	0.14	0.14
23.050	0.14	0.14	0.14	0.14	0.14
23.300	0.14	0.14	0.14	0.14	0.13
23.550	0.13	0.13	0.13	0.13	0.13
23.800	0.13	0.13	0.13	0.13	0.13

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1B

Return Event: 10 years
Storm Event: 10 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1C

Return Event: 10 years
 Storm Event: 10 YR

Storm Event	10 YR
Return Event	10 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.140 hours
Area (User Defined)	56,293.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
2.850	0.00	0.00	0.00	0.00	0.00
3.100	0.00	0.00	0.01	0.01	0.01
3.350	0.01	0.01	0.01	0.01	0.01
3.600	0.01	0.01	0.01	0.01	0.01
3.850	0.01	0.02	0.02	0.02	0.02
4.100	0.02	0.02	0.02	0.02	0.02
4.350	0.02	0.02	0.02	0.02	0.02
4.600	0.03	0.03	0.03	0.03	0.03
4.850	0.03	0.03	0.03	0.03	0.03
5.100	0.03	0.03	0.03	0.04	0.04
5.350	0.04	0.04	0.04	0.04	0.04
5.600	0.04	0.04	0.04	0.04	0.04
5.850	0.05	0.05	0.05	0.05	0.05
6.100	0.05	0.05	0.05	0.05	0.05
6.350	0.06	0.06	0.06	0.06	0.06
6.600	0.06	0.07	0.07	0.07	0.07
6.850	0.07	0.07	0.07	0.08	0.08
7.100	0.08	0.08	0.08	0.08	0.09
7.350	0.09	0.09	0.09	0.09	0.10
7.600	0.10	0.10	0.10	0.10	0.10
7.850	0.11	0.11	0.11	0.11	0.11
8.100	0.12	0.12	0.12	0.13	0.13
8.350	0.13	0.14	0.14	0.14	0.15
8.600	0.15	0.16	0.16	0.16	0.17
8.850	0.17	0.17	0.18	0.18	0.19
9.100	0.19	0.19	0.20	0.20	0.21
9.350	0.21	0.22	0.22	0.22	0.23
9.600	0.23	0.24	0.24	0.25	0.25
9.850	0.25	0.26	0.26	0.27	0.27
10.100	0.28	0.28	0.29	0.30	0.31
10.350	0.32	0.32	0.33	0.34	0.35
10.600	0.36	0.37	0.38	0.38	0.39
10.850	0.40	0.41	0.42	0.43	0.44
11.100	0.46	0.48	0.50	0.53	0.56
11.350	0.59	0.62	0.65	0.69	0.75

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

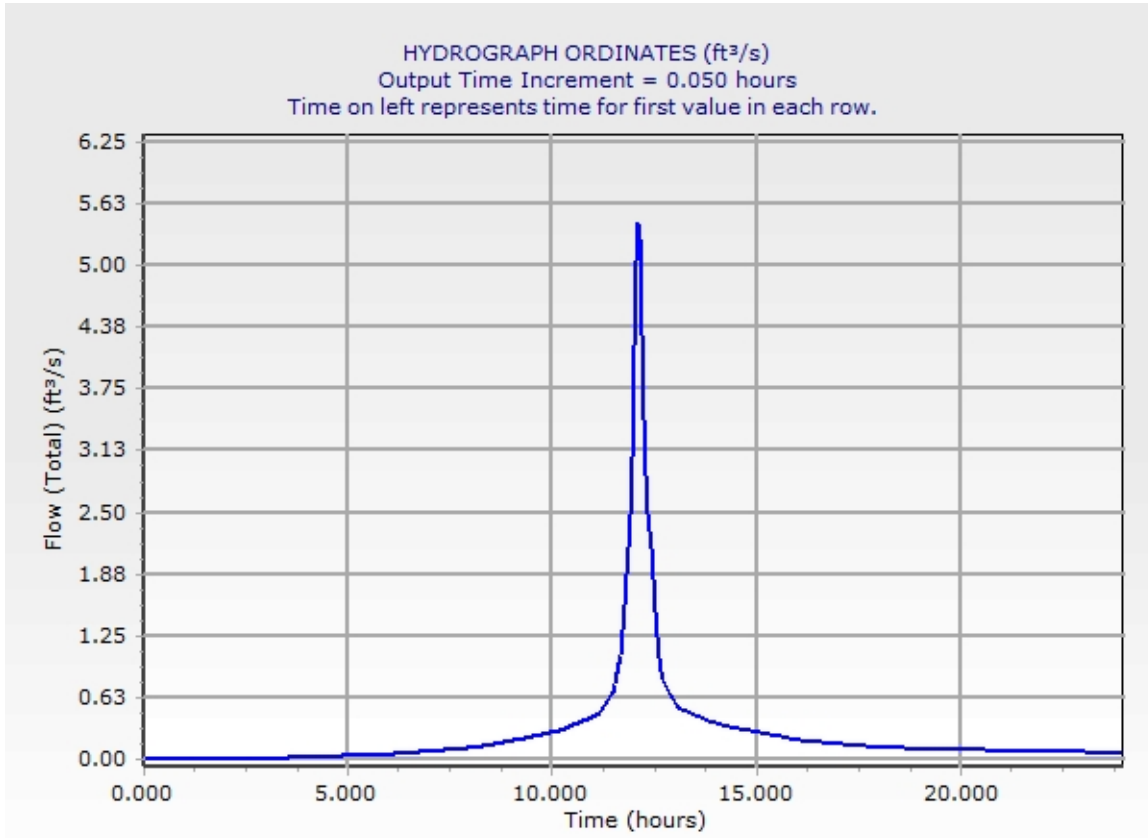
Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
11.600	0.88	1.05	1.30	1.56	1.86
11.850	2.15	2.47	3.05	4.18	5.05
12.100	5.44	5.27	4.31	3.45	2.89
12.350	2.50	2.14	1.83	1.51	1.25
12.600	1.03	0.89	0.80	0.75	0.71
12.850	0.68	0.64	0.61	0.58	0.55
13.100	0.53	0.51	0.50	0.49	0.48
13.350	0.47	0.46	0.45	0.45	0.44
13.600	0.43	0.42	0.41	0.40	0.40
13.850	0.39	0.38	0.37	0.36	0.35
14.100	0.35	0.34	0.34	0.33	0.33
14.350	0.32	0.32	0.32	0.31	0.31
14.600	0.30	0.30	0.30	0.29	0.29
14.850	0.28	0.28	0.28	0.27	0.27
15.100	0.26	0.26	0.26	0.25	0.25
15.350	0.24	0.24	0.24	0.23	0.23
15.600	0.22	0.22	0.22	0.21	0.21
15.850	0.20	0.20	0.20	0.19	0.19
16.100	0.19	0.18	0.18	0.18	0.18
16.350	0.17	0.17	0.17	0.17	0.17
16.600	0.17	0.16	0.16	0.16	0.16
16.850	0.16	0.16	0.15	0.15	0.15
17.100	0.15	0.15	0.14	0.14	0.14
17.350	0.14	0.14	0.14	0.13	0.13
17.600	0.13	0.13	0.13	0.13	0.12
17.850	0.12	0.12	0.12	0.12	0.11
18.100	0.11	0.11	0.11	0.11	0.11
18.350	0.11	0.11	0.11	0.11	0.11
18.600	0.11	0.11	0.11	0.11	0.11
18.850	0.10	0.10	0.10	0.10	0.10
19.100	0.10	0.10	0.10	0.10	0.10
19.350	0.10	0.10	0.10	0.10	0.10
19.600	0.10	0.10	0.10	0.10	0.09
19.850	0.09	0.09	0.09	0.09	0.09
20.100	0.09	0.09	0.09	0.09	0.09
20.350	0.09	0.09	0.09	0.09	0.09
20.600	0.09	0.09	0.09	0.09	0.09
20.850	0.09	0.09	0.08	0.08	0.08
21.100	0.08	0.08	0.08	0.08	0.08
21.350	0.08	0.08	0.08	0.08	0.08
21.600	0.08	0.08	0.08	0.08	0.08
21.850	0.08	0.08	0.08	0.08	0.08
22.100	0.08	0.08	0.08	0.07	0.07
22.350	0.07	0.07	0.07	0.07	0.07

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1C

Return Event: 10 years
Storm Event: 10 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
22.600	0.07	0.07	0.07	0.07	0.07
22.850	0.07	0.07	0.07	0.07	0.07
23.100	0.07	0.07	0.07	0.07	0.07
23.350	0.07	0.07	0.07	0.06	0.06
23.600	0.06	0.06	0.06	0.06	0.06
23.850	0.06	0.06	0.06	0.06	(N/A)



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1D

Return Event: 10 years
 Storm Event: 10 YR

Storm Event	10 YR
Return Event	10 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	32,376.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
7.950	0.00	0.00	0.00	0.00	0.00
8.200	0.00	0.00	0.00	0.01	0.01
8.450	0.01	0.01	0.01	0.01	0.01
8.700	0.01	0.01	0.01	0.01	0.02
8.950	0.02	0.02	0.02	0.02	0.02
9.200	0.02	0.02	0.02	0.03	0.03
9.450	0.03	0.03	0.03	0.03	0.03
9.700	0.04	0.04	0.04	0.04	0.04
9.950	0.04	0.05	0.05	0.05	0.05
10.200	0.06	0.06	0.06	0.06	0.07
10.450	0.07	0.07	0.08	0.08	0.08
10.700	0.09	0.09	0.09	0.10	0.10
10.950	0.10	0.11	0.11	0.12	0.13
11.200	0.14	0.15	0.16	0.17	0.18
11.450	0.19	0.20	0.24	0.29	0.38
11.700	0.48	0.58	0.70	0.83	0.96
11.950	1.41	1.99	2.22	2.35	1.98
12.200	1.45	1.23	1.09	0.96	0.83
12.450	0.69	0.56	0.47	0.39	0.36
12.700	0.34	0.33	0.31	0.30	0.29
12.950	0.27	0.26	0.25	0.24	0.23
13.200	0.23	0.22	0.22	0.22	0.21
13.450	0.21	0.21	0.20	0.20	0.20
13.700	0.19	0.19	0.18	0.18	0.18
13.950	0.17	0.17	0.17	0.16	0.16
14.200	0.16	0.16	0.16	0.15	0.15
14.450	0.15	0.15	0.15	0.14	0.14
14.700	0.14	0.14	0.14	0.14	0.13
14.950	0.13	0.13	0.13	0.13	0.12
15.200	0.12	0.12	0.12	0.12	0.11
15.450	0.11	0.11	0.11	0.11	0.11
15.700	0.10	0.10	0.10	0.10	0.10
15.950	0.09	0.09	0.09	0.09	0.09
16.200	0.09	0.09	0.09	0.08	0.08
16.450	0.08	0.08	0.08	0.08	0.08

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1D

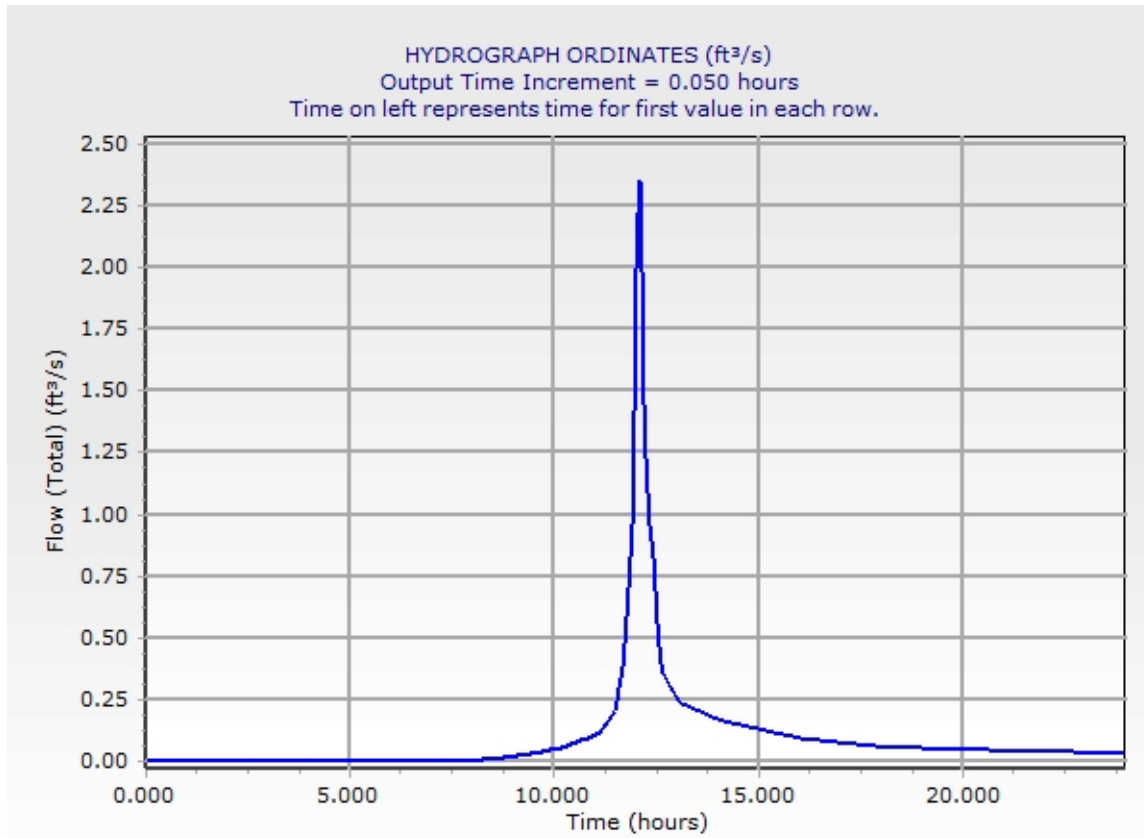
Return Event: 10 years
 Storm Event: 10 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
16.700	0.08	0.08	0.08	0.08	0.08
16.950	0.07	0.07	0.07	0.07	0.07
17.200	0.07	0.07	0.07	0.07	0.07
17.450	0.07	0.07	0.06	0.06	0.06
17.700	0.06	0.06	0.06	0.06	0.06
17.950	0.06	0.06	0.06	0.06	0.06
18.200	0.05	0.05	0.05	0.05	0.05
18.450	0.05	0.05	0.05	0.05	0.05
18.700	0.05	0.05	0.05	0.05	0.05
18.950	0.05	0.05	0.05	0.05	0.05
19.200	0.05	0.05	0.05	0.05	0.05
19.450	0.05	0.05	0.05	0.05	0.05
19.700	0.05	0.05	0.05	0.05	0.05
19.950	0.05	0.05	0.05	0.05	0.05
20.200	0.05	0.04	0.04	0.04	0.04
20.450	0.04	0.04	0.04	0.04	0.04
20.700	0.04	0.04	0.04	0.04	0.04
20.950	0.04	0.04	0.04	0.04	0.04
21.200	0.04	0.04	0.04	0.04	0.04
21.450	0.04	0.04	0.04	0.04	0.04
21.700	0.04	0.04	0.04	0.04	0.04
21.950	0.04	0.04	0.04	0.04	0.04
22.200	0.04	0.04	0.04	0.04	0.04
22.450	0.04	0.04	0.04	0.04	0.04
22.700	0.04	0.04	0.03	0.03	0.03
22.950	0.03	0.03	0.03	0.03	0.03
23.200	0.03	0.03	0.03	0.03	0.03
23.450	0.03	0.03	0.03	0.03	0.03
23.700	0.03	0.03	0.03	0.03	0.03
23.950	0.03	0.03	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1D

Return Event: 10 years
Storm Event: 10 YR



Subsection: Addition Summary
Label: DP-1

Return Event: 10 years
Storm Event: 10 YR

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Outlet-1B	IB-1
CO-1D	J-1D
<Catchment to Outflow Node>	PDA-1A

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-1B	22,225.754	12.500	3.19
Flow (From)	J-1D	8,211.498	12.100	2.35
Flow (From)	PDA-1A	4,209.550	12.100	1.18
Flow (In)	DP-1	34,646.802	12.250	4.59

Subsection: Addition Summary
Label: J-1D

Return Event: 10 years
Storm Event: 10 YR

Summary for Hydrograph Addition at 'J-1D'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1D

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PDA-1D	8,211.498	12.100	2.35
Flow (In)	J-1D	8,211.498	12.100	2.35

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
2.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.950	0.00	0.01	0.01	0.00	0.00	0.000	405.00
3.000	0.00	0.01	0.01	0.00	0.00	1.000	405.00
3.050	0.00	0.01	0.01	0.00	0.00	1.000	405.00
3.100	0.00	0.02	0.02	0.00	0.00	2.000	405.00
3.150	0.00	0.03	0.03	0.00	0.00	2.000	405.00
3.200	0.01	0.03	0.04	0.00	0.00	3.000	405.00
3.250	0.01	0.04	0.05	0.00	0.00	4.000	405.00
3.300	0.01	0.05	0.06	0.00	0.00	4.000	405.00
3.350	0.01	0.06	0.07	0.00	0.00	5.000	405.00
3.400	0.01	0.07	0.08	0.00	0.00	6.000	405.00
3.450	0.01	0.09	0.09	0.00	0.00	7.000	405.00
3.500	0.01	0.10	0.10	0.00	0.00	8.000	405.00
3.550	0.01	0.11	0.12	0.00	0.00	9.000	405.00
3.600	0.01	0.12	0.13	0.00	0.00	11.000	405.00
3.650	0.01	0.14	0.15	0.00	0.00	12.000	405.00
3.700	0.01	0.15	0.16	0.00	0.00	13.000	405.00
3.750	0.01	0.17	0.18	0.00	0.00	14.000	405.00
3.800	0.01	0.19	0.20	0.01	0.00	16.000	405.00
3.850	0.01	0.20	0.21	0.01	0.00	17.000	405.01
3.900	0.02	0.22	0.23	0.01	0.00	19.000	405.01
3.950	0.02	0.24	0.25	0.01	0.00	20.000	405.01
4.000	0.02	0.25	0.27	0.01	0.00	22.000	405.01
4.050	0.02	0.27	0.29	0.01	0.00	23.000	405.01
4.100	0.02	0.29	0.31	0.01	0.00	25.000	405.01
4.150	0.02	0.31	0.33	0.01	0.00	27.000	405.01
4.200	0.02	0.33	0.35	0.01	0.00	28.000	405.01
4.250	0.02	0.35	0.37	0.01	0.00	30.000	405.01
4.300	0.02	0.37	0.39	0.01	0.00	32.000	405.01
4.350	0.02	0.39	0.41	0.01	0.00	33.000	405.01

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
4.400	0.02	0.41	0.44	0.01	0.00	35.000	405.01
4.450	0.02	0.44	0.46	0.01	0.00	37.000	405.01
4.500	0.02	0.46	0.48	0.01	0.00	39.000	405.01
4.550	0.02	0.48	0.51	0.01	0.00	41.000	405.01
4.600	0.03	0.50	0.53	0.01	0.00	43.000	405.01
4.650	0.03	0.53	0.56	0.01	0.00	45.000	405.01
4.700	0.03	0.56	0.59	0.02	0.00	47.000	405.01
4.750	0.03	0.59	0.62	0.02	0.00	50.000	405.01
4.800	0.03	0.62	0.65	0.02	0.00	53.000	405.02
4.850	0.04	0.65	0.69	0.02	0.00	56.000	405.02
4.900	0.04	0.69	0.73	0.02	0.00	59.000	405.02
4.950	0.04	0.73	0.77	0.02	0.00	62.000	405.02
5.000	0.04	0.77	0.81	0.02	0.00	66.000	405.02
5.050	0.04	0.81	0.86	0.02	0.00	69.000	405.02
5.100	0.05	0.85	0.90	0.02	0.00	73.000	405.02
5.150	0.05	0.90	0.95	0.02	0.00	77.000	405.02
5.200	0.05	0.95	1.00	0.03	0.00	81.000	405.02
5.250	0.05	0.99	1.05	0.03	0.00	85.000	405.02
5.300	0.05	1.04	1.10	0.03	0.00	89.000	405.03
5.350	0.06	1.10	1.16	0.03	0.00	94.000	405.03
5.400	0.06	1.15	1.21	0.03	0.00	98.000	405.03
5.450	0.06	1.20	1.27	0.03	0.00	103.000	405.03
5.500	0.06	1.26	1.33	0.03	0.00	107.000	405.03
5.550	0.07	1.31	1.38	0.04	0.00	112.000	405.03
5.600	0.07	1.37	1.44	0.04	0.00	117.000	405.03
5.650	0.07	1.43	1.51	0.04	0.00	122.000	405.04
5.700	0.07	1.49	1.57	0.04	0.00	127.000	405.04
5.750	0.07	1.55	1.63	0.04	0.00	132.000	405.04
5.800	0.08	1.61	1.70	0.04	0.00	138.000	405.04
5.850	0.08	1.67	1.76	0.05	0.00	143.000	405.04
5.900	0.08	1.73	1.83	0.05	0.00	148.000	405.04
5.950	0.08	1.80	1.89	0.05	0.00	154.000	405.04
6.000	0.08	1.86	1.96	0.05	0.00	159.000	405.05
6.050	0.09	1.93	2.03	0.05	0.00	165.000	405.05
6.100	0.09	1.99	2.10	0.06	0.00	171.000	405.05
6.150	0.09	2.06	2.18	0.06	0.00	177.000	405.05
6.200	0.10	2.13	2.25	0.06	0.00	183.000	405.05
6.250	0.10	2.21	2.33	0.06	0.00	189.000	405.05
6.300	0.10	2.28	2.41	0.06	0.00	196.000	405.06
6.350	0.11	2.36	2.49	0.07	0.00	203.000	405.06
6.400	0.11	2.44	2.58	0.07	0.00	210.000	405.06
6.450	0.11	2.52	2.66	0.07	0.00	217.000	405.06
6.500	0.12	2.61	2.76	0.07	0.00	224.000	405.06
6.550	0.12	2.70	2.85	0.07	0.00	232.000	405.07

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
6.600	0.12	2.79	2.95	0.08	0.00	240.000	405.07
6.650	0.13	2.88	3.04	0.08	0.00	248.000	405.07
6.700	0.13	2.98	3.15	0.08	0.00	257.000	405.07
6.750	0.14	3.08	3.25	0.09	0.00	265.000	405.08
6.800	0.14	3.18	3.36	0.09	0.00	274.000	405.08
6.850	0.14	3.28	3.47	0.09	0.00	283.000	405.08
6.900	0.15	3.39	3.58	0.09	0.00	292.000	405.08
6.950	0.15	3.50	3.69	0.10	0.00	302.000	405.09
7.000	0.16	3.61	3.81	0.10	0.00	312.000	405.09
7.050	0.16	3.72	3.93	0.10	0.00	321.000	405.09
7.100	0.17	3.84	4.05	0.11	0.00	332.000	405.10
7.150	0.17	3.96	4.18	0.11	0.00	342.000	405.10
7.200	0.18	4.08	4.30	0.11	0.00	353.000	405.10
7.250	0.18	4.20	4.43	0.12	0.00	363.000	405.10
7.300	0.19	4.33	4.57	0.12	0.00	374.000	405.11
7.350	0.19	4.45	4.70	0.12	0.00	386.000	405.11
7.400	0.19	4.58	4.84	0.13	0.00	397.000	405.11
7.450	0.20	4.71	4.98	0.13	0.00	409.000	405.12
7.500	0.20	4.85	5.12	0.13	0.00	421.000	405.12
7.550	0.21	4.99	5.26	0.14	0.00	433.000	405.12
7.600	0.21	5.12	5.41	0.14	0.00	445.000	405.13
7.650	0.22	5.26	5.56	0.15	0.00	458.000	405.13
7.700	0.22	5.41	5.71	0.15	0.00	470.000	405.13
7.750	0.23	5.55	5.86	0.15	0.00	483.000	405.14
7.800	0.23	5.70	6.02	0.16	0.00	496.000	405.14
7.850	0.24	5.85	6.17	0.16	0.00	510.000	405.14
7.900	0.25	6.00	6.33	0.17	0.00	523.000	405.15
7.950	0.25	6.15	6.50	0.17	0.00	537.000	405.15
8.000	0.26	6.31	6.66	0.18	0.00	551.000	405.16
8.050	0.26	6.47	6.83	0.18	0.00	565.000	405.16
8.100	0.27	6.63	7.00	0.18	0.00	580.000	405.16
8.150	0.28	6.80	7.18	0.19	0.00	595.000	405.17
8.200	0.29	6.97	7.36	0.19	0.00	611.000	405.17
8.250	0.29	7.16	7.56	0.20	0.00	627.000	405.18
8.300	0.30	7.35	7.76	0.20	0.00	644.000	405.18
8.350	0.31	7.55	7.97	0.21	0.00	662.000	405.19
8.400	0.32	7.75	8.18	0.22	0.00	681.000	405.19
8.450	0.33	7.97	8.41	0.22	0.00	700.000	405.20
8.500	0.34	8.19	8.64	0.23	0.00	721.000	405.20
8.550	0.35	8.42	8.89	0.23	0.00	741.000	405.21
8.600	0.36	8.65	9.13	0.24	0.00	763.000	405.21
8.650	0.37	8.90	9.39	0.25	0.00	785.000	405.22
8.700	0.38	9.15	9.66	0.25	0.00	808.000	405.23
8.750	0.40	9.40	9.93	0.26	0.00	832.000	405.23

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
8.800	0.41	9.67	10.21	0.27	0.00	856.000	405.24
8.850	0.42	9.94	10.49	0.28	0.00	881.000	405.25
8.900	0.43	10.22	10.78	0.28	0.00	907.000	405.25
8.950	0.44	10.50	11.08	0.29	0.00	933.000	405.26
9.000	0.45	10.79	11.39	0.30	0.00	960.000	405.27
9.050	0.46	11.09	11.70	0.31	0.00	987.000	405.27
9.100	0.47	11.39	12.02	0.32	0.00	1,016.000	405.28
9.150	0.49	11.70	12.35	0.32	0.00	1,045.000	405.29
9.200	0.50	12.01	12.68	0.33	0.00	1,074.000	405.30
9.250	0.51	12.33	13.02	0.34	0.00	1,104.000	405.31
9.300	0.52	12.66	13.36	0.35	0.00	1,135.000	405.31
9.350	0.53	12.99	13.72	0.36	0.00	1,167.000	405.32
9.400	0.55	13.33	14.07	0.37	0.00	1,199.000	405.33
9.450	0.56	13.68	14.44	0.38	0.00	1,231.000	405.34
9.500	0.57	14.03	14.80	0.39	0.00	1,265.000	405.35
9.550	0.58	14.38	15.18	0.40	0.00	1,299.000	405.36
9.600	0.60	14.74	15.56	0.41	0.00	1,333.000	405.37
9.650	0.61	15.11	15.95	0.42	0.00	1,368.000	405.37
9.700	0.62	15.48	16.34	0.43	0.00	1,404.000	405.38
9.750	0.63	15.85	16.73	0.44	0.00	1,440.000	405.39
9.800	0.65	16.23	17.14	0.45	0.00	1,477.000	405.40
9.850	0.66	16.62	17.54	0.46	0.00	1,515.000	405.41
9.900	0.67	17.01	17.95	0.47	0.00	1,553.000	405.42
9.950	0.69	17.41	18.37	0.48	0.00	1,592.000	405.43
10.000	0.70	17.80	18.79	0.49	0.00	1,631.000	405.44
10.050	0.72	18.21	19.22	0.51	0.00	1,671.000	405.45
10.100	0.73	18.63	19.66	0.52	0.00	1,712.000	405.46
10.150	0.76	19.06	20.12	0.53	0.00	1,755.000	405.47
10.200	0.78	19.51	20.59	0.54	0.00	1,800.000	405.48
10.250	0.80	19.98	21.09	0.55	0.00	1,847.000	405.50
10.300	0.83	20.49	21.61	0.56	0.00	1,892.000	405.51
10.350	0.85	21.04	22.16	0.56	0.00	1,938.000	405.52
10.400	0.87	21.64	22.76	0.56	0.00	1,989.000	405.53
10.450	0.90	22.30	23.42	0.56	0.00	2,044.000	405.54
10.500	0.92	23.00	24.12	0.56	0.00	2,103.000	405.56
10.550	0.95	23.75	24.87	0.56	0.00	2,167.000	405.57
10.600	0.97	24.55	25.67	0.56	0.00	2,236.000	405.59
10.650	1.00	25.40	26.52	0.56	0.00	2,309.000	405.61
10.700	1.03	26.31	27.43	0.56	0.00	2,387.000	405.63
10.750	1.05	27.26	28.38	0.56	0.00	2,470.000	405.65
10.800	1.08	28.27	29.39	0.56	0.00	2,558.000	405.67
10.850	1.10	29.33	30.45	0.56	0.00	2,651.000	405.69
10.900	1.13	30.45	31.57	0.56	0.00	2,750.000	405.71
10.950	1.16	31.61	32.73	0.56	0.00	2,854.000	405.74

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
11.000	1.18	32.83	33.95	0.56	0.00	2,964.000	405.76
11.050	1.23	34.12	35.24	0.56	0.00	3,081.000	405.79
11.100	1.28	35.51	36.63	0.56	0.00	3,208.000	405.82
11.150	1.35	37.02	38.14	0.56	0.00	3,347.000	405.85
11.200	1.43	38.69	39.81	0.56	0.00	3,502.000	405.88
11.250	1.52	40.52	41.64	0.56	0.00	3,675.000	405.92
11.300	1.61	42.53	43.65	0.56	0.00	3,866.000	405.96
11.350	1.70	44.72	45.84	0.56	0.00	4,074.000	406.00
11.400	1.79	47.09	48.21	0.56	0.00	4,274.000	406.05
11.450	1.88	49.65	50.77	0.56	0.00	4,492.000	406.09
11.500	1.98	52.39	53.51	0.56	0.00	4,730.000	406.14
11.550	2.28	55.53	56.65	0.56	0.00	5,006.000	406.20
11.600	2.69	59.37	60.49	0.56	0.00	5,350.000	406.27
11.650	3.34	64.28	65.40	0.56	0.00	5,799.000	406.35
11.700	4.13	70.63	71.75	0.56	0.00	6,396.000	406.47
11.750	4.96	78.60	79.72	0.56	0.00	7,096.000	406.59
11.800	5.85	88.30	89.42	0.56	0.00	7,950.000	406.74
11.850	6.75	99.78	100.90	0.56	0.00	9,006.000	406.92
11.900	7.70	113.11	114.23	0.56	0.00	10,194.000	407.12
11.950	10.51	130.20	131.32	0.56	0.00	11,726.000	407.35
12.000	14.39	153.98	155.10	0.56	0.00	13,863.000	407.66
12.050	16.10	183.30	184.46	0.56	0.02	16,545.000	408.01
12.100	16.83	214.03	216.22	0.56	0.54	19,321.000	408.35
12.150	14.70	241.75	245.55	0.56	1.34	21,885.000	408.65
12.200	11.10	262.13	267.54	0.56	2.15	23,795.000	408.86
12.250	9.15	275.90	282.38	0.56	2.68	25,121.000	409.00
12.300	7.88	286.08	292.93	0.56	2.87	26,022.000	409.10
12.350	6.86	293.69	300.82	0.56	3.00	26,705.000	409.17
12.400	5.88	299.11	306.44	0.56	3.10	27,197.000	409.22
12.450	4.96	302.52	309.96	0.56	3.16	27,508.000	409.25
12.500	4.02	304.00	311.49	0.56	3.19	27,644.000	409.27
12.550	3.35	303.87	311.36	0.56	3.19	27,632.000	409.27
12.600	2.77	302.54	309.99	0.56	3.16	27,511.000	409.25
12.650	2.49	300.44	307.81	0.56	3.12	27,318.000	409.23
12.700	2.33	297.98	305.26	0.56	3.08	27,094.000	409.21
12.750	2.21	295.34	302.52	0.56	3.03	26,854.000	409.19
12.800	2.11	292.57	299.65	0.56	2.98	26,604.000	409.16
12.850	2.01	289.70	296.68	0.56	2.93	26,346.000	409.13
12.900	1.91	286.74	293.62	0.56	2.88	26,081.000	409.11
12.950	1.81	283.70	290.46	0.56	2.82	25,810.000	409.08
13.000	1.71	280.58	287.23	0.56	2.77	25,533.000	409.05
13.050	1.64	277.39	283.93	0.56	2.71	25,252.000	409.02
13.100	1.57	274.23	280.60	0.56	2.63	24,963.000	408.99
13.150	1.53	271.20	277.33	0.56	2.51	24,668.000	408.96

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
13.200	1.50	268.33	274.23	0.56	2.39	24,390.000	408.93
13.250	1.47	265.61	271.30	0.56	2.28	24,128.000	408.90
13.300	1.45	263.05	268.54	0.56	2.18	23,882.000	408.87
13.350	1.42	260.63	265.92	0.56	2.09	23,651.000	408.85
13.400	1.40	258.33	263.45	0.56	2.00	23,433.000	408.82
13.450	1.37	256.16	261.10	0.56	1.91	23,228.000	408.80
13.500	1.35	254.10	258.88	0.56	1.83	23,034.000	408.78
13.550	1.32	252.15	256.77	0.56	1.75	22,851.000	408.76
13.600	1.30	250.29	254.77	0.56	1.68	22,677.000	408.74
13.650	1.27	248.53	252.86	0.56	1.61	22,512.000	408.72
13.700	1.25	246.84	251.04	0.56	1.54	22,356.000	408.70
13.750	1.22	245.23	249.31	0.56	1.48	22,207.000	408.69
13.800	1.20	243.70	247.65	0.56	1.42	22,065.000	408.67
13.850	1.17	242.23	246.06	0.56	1.36	21,929.000	408.66
13.900	1.14	240.82	244.54	0.56	1.30	21,800.000	408.64
13.950	1.12	239.46	243.08	0.56	1.25	21,676.000	408.63
14.000	1.09	238.16	241.68	0.56	1.20	21,557.000	408.61
14.050	1.07	236.91	240.33	0.56	1.15	21,443.000	408.60
14.100	1.05	235.72	239.04	0.56	1.10	21,334.000	408.59
14.150	1.04	234.58	237.80	0.56	1.05	21,231.000	408.58
14.200	1.02	233.49	236.64	0.56	1.01	21,133.000	408.57
14.250	1.01	232.47	235.53	0.56	0.97	21,040.000	408.55
14.300	1.00	231.49	234.48	0.56	0.93	20,952.000	408.54
14.350	0.99	230.57	233.48	0.56	0.90	20,869.000	408.54
14.400	0.98	229.69	232.53	0.56	0.86	20,790.000	408.53
14.450	0.96	228.85	231.62	0.56	0.83	20,715.000	408.52
14.500	0.95	228.05	230.76	0.56	0.80	20,643.000	408.51
14.550	0.94	227.29	229.94	0.56	0.77	20,575.000	408.50
14.600	0.93	226.53	229.15	0.56	0.75	20,503.000	408.49
14.650	0.91	225.77	228.37	0.56	0.74	20,431.000	408.48
14.700	0.90	225.02	227.59	0.56	0.73	20,358.000	408.48
14.750	0.89	224.27	226.81	0.56	0.71	20,286.000	408.47
14.800	0.88	223.51	226.03	0.56	0.70	20,215.000	408.46
14.850	0.87	222.76	225.26	0.56	0.69	20,143.000	408.45
14.900	0.85	222.01	224.48	0.56	0.67	20,072.000	408.44
14.950	0.84	221.26	223.71	0.56	0.66	20,001.000	408.43
15.000	0.83	220.51	222.93	0.56	0.65	19,930.000	408.43
15.050	0.82	219.77	222.16	0.56	0.64	19,860.000	408.42
15.100	0.80	219.02	221.39	0.56	0.62	19,789.000	408.41
15.150	0.79	218.27	220.62	0.56	0.61	19,719.000	408.40
15.200	0.78	217.53	219.85	0.56	0.60	19,649.000	408.39
15.250	0.77	216.78	219.08	0.56	0.59	19,579.000	408.38
15.300	0.75	216.04	218.31	0.56	0.57	19,509.000	408.38
15.350	0.74	215.30	217.54	0.56	0.56	19,439.000	408.37

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
15.400	0.73	214.56	216.77	0.56	0.55	19,370.000	408.36
15.450	0.72	213.81	216.00	0.56	0.54	19,301.000	408.35
15.500	0.71	213.07	215.24	0.56	0.52	19,232.000	408.34
15.550	0.69	212.33	214.47	0.56	0.51	19,163.000	408.33
15.600	0.68	211.59	213.71	0.56	0.50	19,094.000	408.33
15.650	0.67	210.85	212.94	0.56	0.48	19,025.000	408.32
15.700	0.66	210.11	212.18	0.56	0.47	18,957.000	408.31
15.750	0.64	209.37	211.41	0.56	0.46	18,889.000	408.30
15.800	0.63	208.63	210.65	0.56	0.45	18,820.000	408.29
15.850	0.62	207.90	209.89	0.56	0.43	18,752.000	408.29
15.900	0.61	207.16	209.12	0.56	0.42	18,684.000	408.28
15.950	0.59	206.42	208.36	0.56	0.41	18,617.000	408.27
16.000	0.58	205.68	207.60	0.56	0.40	18,549.000	408.26
16.050	0.57	204.95	206.84	0.56	0.38	18,482.000	408.25
16.100	0.56	204.22	206.08	0.56	0.37	18,415.000	408.24
16.150	0.56	203.50	205.34	0.56	0.36	18,349.000	408.24
16.200	0.55	202.79	204.61	0.56	0.35	18,284.000	408.23
16.250	0.54	202.09	203.88	0.56	0.34	18,221.000	408.22
16.300	0.54	201.41	203.17	0.56	0.32	18,158.000	408.21
16.350	0.53	200.73	202.48	0.56	0.31	18,097.000	408.21
16.400	0.53	200.07	201.79	0.56	0.30	18,037.000	408.20
16.450	0.52	199.42	201.12	0.56	0.29	17,978.000	408.19
16.500	0.52	198.78	200.46	0.56	0.28	17,921.000	408.18
16.550	0.51	198.15	199.81	0.56	0.27	17,864.000	408.18
16.600	0.51	197.53	199.17	0.56	0.26	17,808.000	408.17
16.650	0.50	196.92	198.54	0.56	0.25	17,753.000	408.16
16.700	0.50	196.32	197.92	0.56	0.24	17,699.000	408.16
16.750	0.49	195.73	197.31	0.56	0.23	17,646.000	408.15
16.800	0.48	195.15	196.71	0.56	0.22	17,594.000	408.14
16.850	0.48	194.58	196.12	0.56	0.21	17,543.000	408.14
16.900	0.47	194.02	195.54	0.56	0.20	17,492.000	408.13
16.950	0.47	193.46	194.96	0.56	0.19	17,443.000	408.12
17.000	0.46	192.91	194.39	0.56	0.18	17,394.000	408.12
17.050	0.46	192.37	193.84	0.56	0.17	17,346.000	408.11
17.100	0.45	191.84	193.28	0.56	0.16	17,298.000	408.11
17.150	0.45	191.32	192.74	0.56	0.15	17,251.000	408.10
17.200	0.44	190.80	192.20	0.56	0.14	17,205.000	408.09
17.250	0.44	190.28	191.67	0.56	0.14	17,160.000	408.09
17.300	0.43	189.78	191.15	0.56	0.13	17,115.000	408.08
17.350	0.43	189.28	190.64	0.56	0.12	17,071.000	408.08
17.400	0.42	188.78	190.13	0.56	0.11	17,027.000	408.07
17.450	0.41	188.30	189.62	0.56	0.10	16,984.000	408.07
17.500	0.41	187.81	189.12	0.56	0.09	16,941.000	408.06
17.550	0.40	187.34	188.63	0.56	0.09	16,899.000	408.06

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
17.600	0.40	186.87	188.14	0.56	0.08	16,858.000	408.05
17.650	0.39	186.40	187.66	0.56	0.07	16,816.000	408.05
17.700	0.39	185.94	187.18	0.56	0.06	16,776.000	408.04
17.750	0.38	185.48	186.71	0.56	0.05	16,736.000	408.04
17.800	0.38	185.03	186.24	0.56	0.05	16,696.000	408.03
17.850	0.37	184.58	185.78	0.56	0.04	16,657.000	408.03
17.900	0.37	184.14	185.32	0.56	0.03	16,618.000	408.02
17.950	0.36	183.70	184.86	0.56	0.02	16,579.000	408.02
18.000	0.36	183.26	184.41	0.56	0.02	16,541.000	408.01
18.050	0.35	182.83	183.97	0.56	0.01	16,504.000	408.01
18.100	0.35	182.40	183.53	0.56	0.00	16,466.000	408.00
18.150	0.35	181.98	183.10	0.56	0.00	16,427.000	408.00
18.200	0.34	181.54	182.66	0.56	0.00	16,386.000	407.99
18.250	0.34	181.11	182.23	0.56	0.00	16,344.000	407.99
18.300	0.34	180.67	181.79	0.56	0.00	16,303.000	407.98
18.350	0.34	180.23	181.35	0.56	0.00	16,261.000	407.97
18.400	0.34	179.79	180.91	0.56	0.00	16,219.000	407.97
18.450	0.34	179.34	180.46	0.56	0.00	16,176.000	407.96
18.500	0.33	178.89	180.01	0.56	0.00	16,134.000	407.96
18.550	0.33	178.43	179.55	0.56	0.00	16,091.000	407.95
18.600	0.33	177.97	179.09	0.56	0.00	16,048.000	407.95
18.650	0.33	177.51	178.63	0.56	0.00	16,005.000	407.94
18.700	0.33	177.05	178.17	0.56	0.00	15,961.000	407.94
18.750	0.33	176.58	177.70	0.56	0.00	15,917.000	407.93
18.800	0.32	176.11	177.23	0.56	0.00	15,873.000	407.92
18.850	0.32	175.64	176.76	0.56	0.00	15,829.000	407.92
18.900	0.32	175.16	176.28	0.56	0.00	15,784.000	407.91
18.950	0.32	174.68	175.80	0.56	0.00	15,739.000	407.91
19.000	0.32	174.20	175.32	0.56	0.00	15,694.000	407.90
19.050	0.32	173.71	174.83	0.56	0.00	15,649.000	407.90
19.100	0.31	173.22	174.34	0.56	0.00	15,603.000	407.89
19.150	0.31	172.73	173.85	0.56	0.00	15,558.000	407.88
19.200	0.31	172.23	173.35	0.56	0.00	15,512.000	407.88
19.250	0.31	171.73	172.85	0.56	0.00	15,465.000	407.87
19.300	0.31	171.23	172.35	0.56	0.00	15,419.000	407.87
19.350	0.31	170.72	171.84	0.56	0.00	15,372.000	407.86
19.400	0.30	170.21	171.33	0.56	0.00	15,325.000	407.85
19.450	0.30	169.70	170.82	0.56	0.00	15,278.000	407.85
19.500	0.30	169.19	170.31	0.56	0.00	15,231.000	407.84
19.550	0.30	168.67	169.79	0.56	0.00	15,183.000	407.83
19.600	0.30	168.15	169.27	0.56	0.00	15,135.000	407.83
19.650	0.30	167.62	168.74	0.56	0.00	15,087.000	407.82
19.700	0.29	167.09	168.21	0.56	0.00	15,039.000	407.82
19.750	0.29	166.56	167.68	0.56	0.00	14,990.000	407.81

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
19.800	0.29	166.02	167.14	0.56	0.00	14,941.000	407.80
19.850	0.29	165.49	166.61	0.56	0.00	14,892.000	407.80
19.900	0.29	164.95	166.07	0.56	0.00	14,843.000	407.79
19.950	0.29	164.40	165.52	0.56	0.00	14,794.000	407.78
20.000	0.29	163.85	164.97	0.56	0.00	14,744.000	407.78
20.050	0.28	163.30	164.42	0.56	0.00	14,694.000	407.77
20.100	0.28	162.75	163.87	0.56	0.00	14,644.000	407.76
20.150	0.28	162.19	163.31	0.56	0.00	14,594.000	407.76
20.200	0.28	161.63	162.75	0.56	0.00	14,544.000	407.75
20.250	0.28	161.07	162.19	0.56	0.00	14,493.000	407.74
20.300	0.28	160.51	161.63	0.56	0.00	14,443.000	407.73
20.350	0.28	159.94	161.06	0.56	0.00	14,392.000	407.73
20.400	0.27	159.37	160.49	0.56	0.00	14,341.000	407.72
20.450	0.27	158.80	159.92	0.56	0.00	14,290.000	407.71
20.500	0.27	158.23	159.35	0.56	0.00	14,239.000	407.71
20.550	0.27	157.65	158.77	0.56	0.00	14,188.000	407.70
20.600	0.27	157.07	158.19	0.56	0.00	14,136.000	407.69
20.650	0.27	156.49	157.61	0.56	0.00	14,085.000	407.69
20.700	0.27	155.90	157.02	0.56	0.00	14,033.000	407.68
20.750	0.27	155.32	156.44	0.56	0.00	13,981.000	407.67
20.800	0.27	154.73	155.85	0.56	0.00	13,929.000	407.66
20.850	0.26	154.14	155.26	0.56	0.00	13,877.000	407.66
20.900	0.26	153.54	154.66	0.56	0.00	13,825.000	407.65
20.950	0.26	152.95	154.07	0.56	0.00	13,772.000	407.64
21.000	0.26	152.35	153.47	0.56	0.00	13,720.000	407.64
21.050	0.26	151.75	152.87	0.56	0.00	13,667.000	407.63
21.100	0.26	151.15	152.27	0.56	0.00	13,615.000	407.62
21.150	0.26	150.54	151.66	0.56	0.00	13,562.000	407.61
21.200	0.26	149.94	151.06	0.56	0.00	13,509.000	407.61
21.250	0.25	149.33	150.45	0.56	0.00	13,456.000	407.60
21.300	0.25	148.71	149.83	0.56	0.00	13,403.000	407.59
21.350	0.25	148.10	149.22	0.56	0.00	13,349.000	407.58
21.400	0.25	147.48	148.60	0.56	0.00	13,296.000	407.58
21.450	0.25	146.86	147.98	0.56	0.00	13,243.000	407.57
21.500	0.25	146.24	147.36	0.56	0.00	13,189.000	407.56
21.550	0.25	145.61	146.73	0.56	0.00	13,135.000	407.55
21.600	0.25	144.98	146.10	0.56	0.00	13,081.000	407.55
21.650	0.24	144.35	145.47	0.56	0.00	13,027.000	407.54
21.700	0.24	143.72	144.84	0.56	0.00	12,973.000	407.53
21.750	0.24	143.09	144.21	0.56	0.00	12,919.000	407.52
21.800	0.24	142.45	143.57	0.56	0.00	12,865.000	407.52
21.850	0.24	141.81	142.93	0.56	0.00	12,810.000	407.51
21.900	0.24	141.17	142.29	0.56	0.00	12,756.000	407.50
21.950	0.24	140.53	141.65	0.56	0.00	12,694.000	407.49

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 10 years
 Storm Event: 10 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
22.000	0.24	139.88	141.00	0.56	0.00	12,632.000	407.48
22.050	0.23	139.23	140.35	0.56	0.00	12,571.000	407.47
22.100	0.23	138.58	139.70	0.56	0.00	12,509.000	407.46
22.150	0.23	137.92	139.04	0.56	0.00	12,447.000	407.46
22.200	0.23	137.27	138.39	0.56	0.00	12,385.000	407.45
22.250	0.23	136.61	137.73	0.56	0.00	12,323.000	407.44
22.300	0.23	135.95	137.07	0.56	0.00	12,261.000	407.43
22.350	0.23	135.28	136.40	0.56	0.00	12,198.000	407.42
22.400	0.23	134.61	135.73	0.56	0.00	12,136.000	407.41
22.450	0.23	133.95	135.07	0.56	0.00	12,073.000	407.40
22.500	0.22	133.27	134.39	0.56	0.00	12,011.000	407.39
22.550	0.22	132.60	133.72	0.56	0.00	11,948.000	407.38
22.600	0.22	131.93	133.05	0.56	0.00	11,885.000	407.37
22.650	0.22	131.25	132.37	0.56	0.00	11,823.000	407.36
22.700	0.22	130.57	131.69	0.56	0.00	11,760.000	407.35
22.750	0.22	129.89	131.01	0.56	0.00	11,697.000	407.35
22.800	0.22	129.20	130.32	0.56	0.00	11,634.000	407.34
22.850	0.22	128.51	129.63	0.56	0.00	11,571.000	407.33
22.900	0.21	127.82	128.94	0.56	0.00	11,507.000	407.32
22.950	0.21	127.13	128.25	0.56	0.00	11,444.000	407.31
23.000	0.21	126.43	127.55	0.56	0.00	11,381.000	407.30
23.050	0.21	125.73	126.85	0.56	0.00	11,317.000	407.29
23.100	0.21	125.03	126.15	0.56	0.00	11,254.000	407.28
23.150	0.21	124.33	125.45	0.56	0.00	11,190.000	407.27
23.200	0.21	123.62	124.74	0.56	0.00	11,126.000	407.26
23.250	0.21	122.92	124.04	0.56	0.00	11,062.000	407.25
23.300	0.20	122.21	123.33	0.56	0.00	10,999.000	407.24
23.350	0.20	121.49	122.61	0.56	0.00	10,935.000	407.23
23.400	0.20	120.78	121.90	0.56	0.00	10,871.000	407.22
23.450	0.20	120.06	121.18	0.56	0.00	10,807.000	407.21
23.500	0.20	119.34	120.46	0.56	0.00	10,743.000	407.20
23.550	0.20	118.62	119.74	0.56	0.00	10,679.000	407.19
23.600	0.20	117.90	119.02	0.56	0.00	10,615.000	407.18
23.650	0.20	117.17	118.29	0.56	0.00	10,550.000	407.17
23.700	0.19	116.44	117.56	0.56	0.00	10,486.000	407.16
23.750	0.19	115.71	116.83	0.56	0.00	10,422.000	407.15
23.800	0.19	114.97	116.09	0.56	0.00	10,357.000	407.14
23.850	0.19	114.24	115.36	0.56	0.00	10,293.000	407.13
23.900	0.19	113.50	114.62	0.56	0.00	10,228.000	407.12
23.950	0.19	112.75	113.87	0.56	0.00	10,164.000	407.11
24.000	0.19	112.01	113.13	0.56	0.00	10,099.000	407.10

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 25 years
 Storm Event: 25 YR

Time-Depth Curve: 25 YR

Label	25 YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.2
2.500	0.2	0.2	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.3	0.3	0.3
4.000	0.3	0.3	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.4	0.4
5.000	0.4	0.4	0.4	0.4	0.4
5.500	0.4	0.4	0.4	0.4	0.5
6.000	0.5	0.5	0.5	0.5	0.5
6.500	0.5	0.5	0.5	0.6	0.6
7.000	0.6	0.6	0.6	0.6	0.6
7.500	0.7	0.7	0.7	0.7	0.7
8.000	0.7	0.8	0.8	0.8	0.8
8.500	0.8	0.9	0.9	0.9	0.9
9.000	0.9	1.0	1.0	1.0	1.1
9.500	1.1	1.1	1.1	1.2	1.2
10.000	1.2	1.3	1.3	1.3	1.4
10.500	1.4	1.4	1.5	1.5	1.6
11.000	1.6	1.7	1.7	1.8	1.9
11.500	1.9	2.0	2.2	2.4	2.7
12.000	3.2	3.8	4.1	4.3	4.5
12.500	4.6	4.6	4.7	4.8	4.8
13.000	4.9	4.9	5.0	5.0	5.1
13.500	5.1	5.1	5.2	5.2	5.2
14.000	5.3	5.3	5.3	5.4	5.4
14.500	5.4	5.4	5.5	5.5	5.5
15.000	5.6	5.6	5.6	5.6	5.6
15.500	5.7	5.7	5.7	5.7	5.7
16.000	5.8	5.8	5.8	5.8	5.8
16.500	5.8	5.9	5.9	5.9	5.9
17.000	5.9	5.9	5.9	6.0	6.0
17.500	6.0	6.0	6.0	6.0	6.0

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 25 years
 Storm Event: 25 YR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
18.000	6.0	6.0	6.1	6.1	6.1
18.500	6.1	6.1	6.1	6.1	6.1
19.000	6.1	6.1	6.1	6.2	6.2
19.500	6.2	6.2	6.2	6.2	6.2
20.000	6.2	6.2	6.2	6.2	6.3
20.500	6.3	6.3	6.3	6.3	6.3
21.000	6.3	6.3	6.3	6.3	6.3
21.500	6.3	6.3	6.4	6.4	6.4
22.000	6.4	6.4	6.4	6.4	6.4
22.500	6.4	6.4	6.4	6.4	6.4
23.000	6.4	6.4	6.5	6.5	6.5
23.500	6.5	6.5	6.5	6.5	6.5
24.000	6.5	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1A

Return Event: 25 years
 Storm Event: 25 YR

Storm Event	25 YR
Return Event	25 years
Duration	24.000 hours
Depth	6.5 in
Time of Concentration (Composite)	0.101 hours
Area (User Defined)	17,678.700 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
7.750	0.00	0.00	0.00	0.00	0.00
8.000	0.00	0.00	0.00	0.00	0.00
8.250	0.00	0.00	0.01	0.01	0.01
8.500	0.01	0.01	0.01	0.01	0.01
8.750	0.01	0.01	0.01	0.01	0.01
9.000	0.01	0.01	0.02	0.02	0.02
9.250	0.02	0.02	0.02	0.02	0.02
9.500	0.02	0.02	0.02	0.03	0.03
9.750	0.03	0.03	0.03	0.03	0.03
10.000	0.03	0.03	0.04	0.04	0.04
10.250	0.04	0.04	0.04	0.05	0.05
10.500	0.05	0.05	0.05	0.06	0.06
10.750	0.06	0.06	0.07	0.07	0.07
11.000	0.07	0.08	0.08	0.09	0.09
11.250	0.10	0.11	0.11	0.12	0.13
11.500	0.14	0.16	0.19	0.24	0.31
11.750	0.37	0.45	0.53	0.63	0.86
12.000	1.24	1.43	1.53	1.39	1.04
12.250	0.86	0.75	0.66	0.57	0.49
12.500	0.39	0.33	0.27	0.24	0.23
12.750	0.22	0.21	0.20	0.19	0.18
13.000	0.17	0.16	0.16	0.15	0.15
13.250	0.15	0.15	0.14	0.14	0.14
13.500	0.14	0.13	0.13	0.13	0.13
13.750	0.12	0.12	0.12	0.12	0.11
14.000	0.11	0.11	0.11	0.11	0.10
14.250	0.10	0.10	0.10	0.10	0.10
14.500	0.10	0.10	0.09	0.09	0.09
14.750	0.09	0.09	0.09	0.09	0.09
15.000	0.09	0.08	0.08	0.08	0.08
15.250	0.08	0.08	0.08	0.08	0.07
15.500	0.07	0.07	0.07	0.07	0.07
15.750	0.07	0.07	0.06	0.06	0.06
16.000	0.06	0.06	0.06	0.06	0.06
16.250	0.06	0.06	0.06	0.05	0.05

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1A

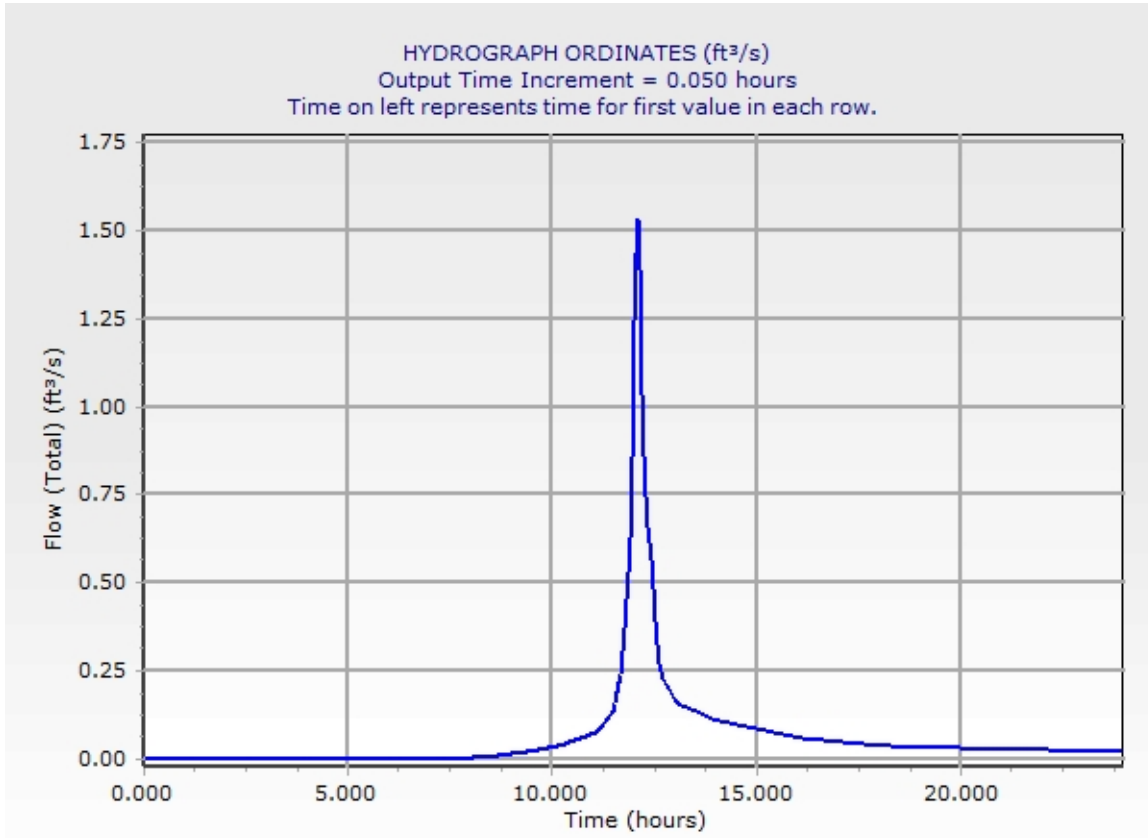
Return Event: 25 years
 Storm Event: 25 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
16.500	0.05	0.05	0.05	0.05	0.05
16.750	0.05	0.05	0.05	0.05	0.05
17.000	0.05	0.05	0.05	0.05	0.05
17.250	0.05	0.05	0.04	0.04	0.04
17.500	0.04	0.04	0.04	0.04	0.04
17.750	0.04	0.04	0.04	0.04	0.04
18.000	0.04	0.04	0.04	0.04	0.04
18.250	0.04	0.04	0.04	0.04	0.04
18.500	0.03	0.03	0.03	0.03	0.03
18.750	0.03	0.03	0.03	0.03	0.03
19.000	0.03	0.03	0.03	0.03	0.03
19.250	0.03	0.03	0.03	0.03	0.03
19.500	0.03	0.03	0.03	0.03	0.03
19.750	0.03	0.03	0.03	0.03	0.03
20.000	0.03	0.03	0.03	0.03	0.03
20.250	0.03	0.03	0.03	0.03	0.03
20.500	0.03	0.03	0.03	0.03	0.03
20.750	0.03	0.03	0.03	0.03	0.03
21.000	0.03	0.03	0.03	0.03	0.03
21.250	0.03	0.03	0.03	0.03	0.03
21.500	0.03	0.03	0.03	0.03	0.03
21.750	0.03	0.03	0.03	0.03	0.03
22.000	0.02	0.02	0.02	0.02	0.02
22.250	0.02	0.02	0.02	0.02	0.02
22.500	0.02	0.02	0.02	0.02	0.02
22.750	0.02	0.02	0.02	0.02	0.02
23.000	0.02	0.02	0.02	0.02	0.02
23.250	0.02	0.02	0.02	0.02	0.02
23.500	0.02	0.02	0.02	0.02	0.02
23.750	0.02	0.02	0.02	0.02	0.02
24.000	0.02	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1A

Return Event: 25 years
Storm Event: 25 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1B

Return Event: 25 years
 Storm Event: 25 YR

Storm Event	25 YR
Return Event	25 years
Duration	24.000 hours
Depth	6.5 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	120,941.500 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
4.000	0.00	0.00	0.00	0.00	0.01
4.250	0.01	0.01	0.01	0.01	0.01
4.500	0.02	0.02	0.02	0.02	0.02
4.750	0.02	0.02	0.03	0.03	0.03
5.000	0.03	0.03	0.03	0.04	0.04
5.250	0.04	0.04	0.04	0.04	0.05
5.500	0.05	0.05	0.05	0.05	0.06
5.750	0.06	0.06	0.06	0.06	0.06
6.000	0.07	0.07	0.07	0.07	0.08
6.250	0.08	0.08	0.08	0.09	0.09
6.500	0.09	0.10	0.10	0.10	0.11
6.750	0.11	0.11	0.12	0.12	0.12
7.000	0.13	0.13	0.13	0.14	0.14
7.250	0.14	0.15	0.15	0.15	0.16
7.500	0.16	0.17	0.17	0.18	0.18
7.750	0.18	0.19	0.19	0.20	0.20
8.000	0.20	0.21	0.22	0.22	0.23
8.250	0.24	0.25	0.25	0.26	0.27
8.500	0.28	0.29	0.29	0.30	0.31
8.750	0.32	0.33	0.34	0.35	0.36
9.000	0.36	0.37	0.38	0.39	0.40
9.250	0.41	0.42	0.43	0.44	0.45
9.500	0.46	0.47	0.48	0.49	0.50
9.750	0.51	0.53	0.54	0.55	0.56
10.000	0.57	0.58	0.60	0.62	0.63
10.250	0.65	0.67	0.69	0.71	0.73
10.500	0.75	0.77	0.79	0.81	0.84
10.750	0.86	0.88	0.90	0.92	0.94
11.000	0.96	1.00	1.05	1.11	1.18
11.250	1.25	1.33	1.40	1.47	1.55
11.500	1.62	1.92	2.27	2.86	3.53
11.750	4.23	4.95	5.69	6.45	9.17
12.000	12.50	13.48	13.84	11.43	8.22
12.250	6.89	6.02	5.26	4.52	3.78
12.500	3.03	2.53	2.10	1.93	1.84

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
12.750	1.75	1.68	1.60	1.52	1.44
13.000	1.36	1.31	1.25	1.23	1.21
13.250	1.18	1.16	1.14	1.12	1.10
13.500	1.08	1.06	1.04	1.02	1.00
13.750	0.98	0.96	0.94	0.92	0.90
14.000	0.88	0.86	0.85	0.83	0.82
14.250	0.81	0.80	0.79	0.79	0.78
14.500	0.77	0.76	0.75	0.74	0.73
14.750	0.72	0.71	0.70	0.69	0.68
15.000	0.67	0.66	0.65	0.64	0.63
15.250	0.62	0.61	0.60	0.59	0.58
15.500	0.57	0.56	0.55	0.54	0.53
15.750	0.52	0.51	0.50	0.49	0.48
16.000	0.47	0.46	0.45	0.45	0.44
16.250	0.44	0.43	0.43	0.42	0.42
16.500	0.42	0.41	0.41	0.40	0.40
16.750	0.40	0.39	0.39	0.38	0.38
17.000	0.37	0.37	0.37	0.36	0.36
17.250	0.35	0.35	0.34	0.34	0.33
17.500	0.33	0.33	0.32	0.32	0.31
17.750	0.31	0.30	0.30	0.30	0.29
18.000	0.29	0.28	0.28	0.28	0.28
18.250	0.28	0.27	0.27	0.27	0.27
18.500	0.27	0.27	0.27	0.27	0.26
18.750	0.26	0.26	0.26	0.26	0.26
19.000	0.26	0.25	0.25	0.25	0.25
19.250	0.25	0.25	0.25	0.25	0.24
19.500	0.24	0.24	0.24	0.24	0.24
19.750	0.24	0.24	0.23	0.23	0.23
20.000	0.23	0.23	0.23	0.23	0.23
20.250	0.23	0.22	0.22	0.22	0.22
20.500	0.22	0.22	0.22	0.22	0.21
20.750	0.21	0.21	0.21	0.21	0.21
21.000	0.21	0.21	0.21	0.21	0.21
21.250	0.21	0.20	0.20	0.20	0.20
21.500	0.20	0.20	0.20	0.20	0.20
21.750	0.20	0.20	0.19	0.19	0.19
22.000	0.19	0.19	0.19	0.19	0.19
22.250	0.19	0.18	0.18	0.18	0.18
22.500	0.18	0.18	0.18	0.18	0.18
22.750	0.18	0.17	0.17	0.17	0.17
23.000	0.17	0.17	0.17	0.17	0.17
23.250	0.17	0.16	0.16	0.16	0.16
23.500	0.16	0.16	0.16	0.16	0.16

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1B

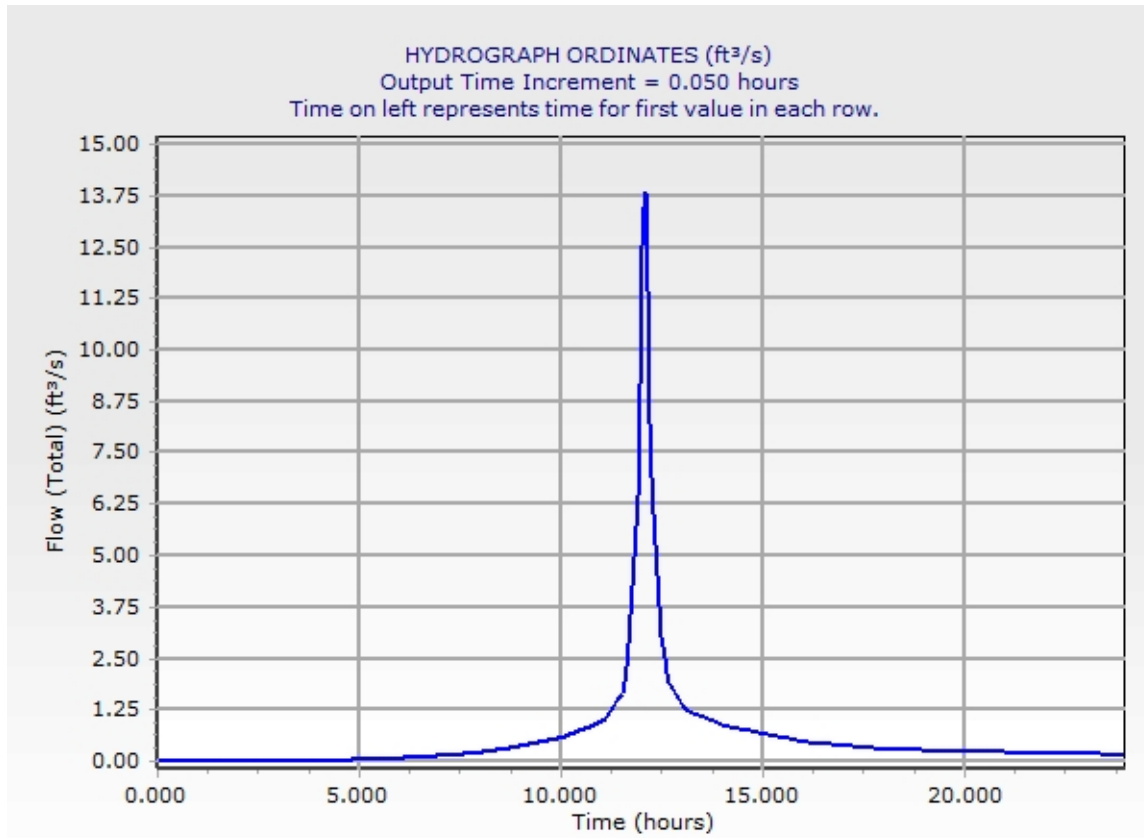
Return Event: 25 years
Storm Event: 25 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
23.750	0.16	0.16	0.15	0.15	0.15
24.000	0.15	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1B

Return Event: 25 years
Storm Event: 25 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1C

Return Event: 25 years
 Storm Event: 25 YR

Storm Event	25 YR
Return Event	25 years
Duration	24.000 hours
Depth	6.5 in
Time of Concentration (Composite)	0.140 hours
Area (User Defined)	56,293.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
2.450	0.00	0.00	0.00	0.00	0.00
2.700	0.00	0.01	0.01	0.01	0.01
2.950	0.01	0.01	0.01	0.01	0.01
3.200	0.01	0.01	0.01	0.02	0.02
3.450	0.02	0.02	0.02	0.02	0.02
3.700	0.02	0.02	0.02	0.02	0.03
3.950	0.03	0.03	0.03	0.03	0.03
4.200	0.03	0.03	0.03	0.03	0.04
4.450	0.04	0.04	0.04	0.04	0.04
4.700	0.04	0.04	0.04	0.04	0.04
4.950	0.05	0.05	0.05	0.05	0.05
5.200	0.05	0.05	0.05	0.05	0.05
5.450	0.06	0.06	0.06	0.06	0.06
5.700	0.06	0.06	0.06	0.06	0.06
5.950	0.07	0.07	0.07	0.07	0.07
6.200	0.07	0.07	0.08	0.08	0.08
6.450	0.08	0.08	0.08	0.09	0.09
6.700	0.09	0.09	0.09	0.10	0.10
6.950	0.10	0.10	0.10	0.11	0.11
7.200	0.11	0.11	0.11	0.12	0.12
7.450	0.12	0.12	0.13	0.13	0.13
7.700	0.13	0.13	0.14	0.14	0.14
7.950	0.14	0.15	0.15	0.15	0.15
8.200	0.16	0.16	0.17	0.17	0.18
8.450	0.18	0.19	0.19	0.19	0.20
8.700	0.20	0.21	0.21	0.22	0.22
8.950	0.23	0.23	0.24	0.24	0.25
9.200	0.25	0.26	0.26	0.27	0.27
9.450	0.28	0.28	0.29	0.29	0.30
9.700	0.30	0.31	0.31	0.32	0.32
9.950	0.33	0.33	0.34	0.35	0.35
10.200	0.36	0.37	0.38	0.39	0.40
10.450	0.41	0.42	0.43	0.44	0.45
10.700	0.46	0.47	0.48	0.49	0.50
10.950	0.51	0.52	0.54	0.56	0.58

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
11.200	0.62	0.65	0.69	0.72	0.76
11.450	0.80	0.84	0.91	1.07	1.27
11.700	1.58	1.89	2.25	2.60	2.98
11.950	3.67	5.02	6.05	6.52	6.31
12.200	5.15	4.12	3.45	2.98	2.55
12.450	2.18	1.79	1.48	1.23	1.05
12.700	0.96	0.90	0.85	0.81	0.77
12.950	0.73	0.69	0.66	0.63	0.61
13.200	0.59	0.58	0.57	0.56	0.55
13.450	0.54	0.53	0.52	0.51	0.50
13.700	0.49	0.48	0.47	0.46	0.45
13.950	0.44	0.43	0.42	0.41	0.41
14.200	0.40	0.40	0.39	0.39	0.38
14.450	0.38	0.37	0.37	0.36	0.36
14.700	0.35	0.35	0.34	0.34	0.33
14.950	0.33	0.32	0.32	0.31	0.31
15.200	0.30	0.30	0.29	0.29	0.29
15.450	0.28	0.28	0.27	0.27	0.26
15.700	0.26	0.25	0.25	0.24	0.24
15.950	0.23	0.23	0.22	0.22	0.22
16.200	0.21	0.21	0.21	0.21	0.21
16.450	0.20	0.20	0.20	0.20	0.19
16.700	0.19	0.19	0.19	0.19	0.18
16.950	0.18	0.18	0.18	0.18	0.17
17.200	0.17	0.17	0.17	0.17	0.16
17.450	0.16	0.16	0.16	0.16	0.15
17.700	0.15	0.15	0.15	0.14	0.14
17.950	0.14	0.14	0.14	0.13	0.13
18.200	0.13	0.13	0.13	0.13	0.13
18.450	0.13	0.13	0.13	0.13	0.13
18.700	0.13	0.13	0.13	0.12	0.12
18.950	0.12	0.12	0.12	0.12	0.12
19.200	0.12	0.12	0.12	0.12	0.12
19.450	0.12	0.12	0.12	0.12	0.11
19.700	0.11	0.11	0.11	0.11	0.11
19.950	0.11	0.11	0.11	0.11	0.11
20.200	0.11	0.11	0.11	0.11	0.11
20.450	0.11	0.11	0.10	0.10	0.10
20.700	0.10	0.10	0.10	0.10	0.10
20.950	0.10	0.10	0.10	0.10	0.10
21.200	0.10	0.10	0.10	0.10	0.10
21.450	0.10	0.10	0.09	0.09	0.09
21.700	0.09	0.09	0.09	0.09	0.09
21.950	0.09	0.09	0.09	0.09	0.09

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1C

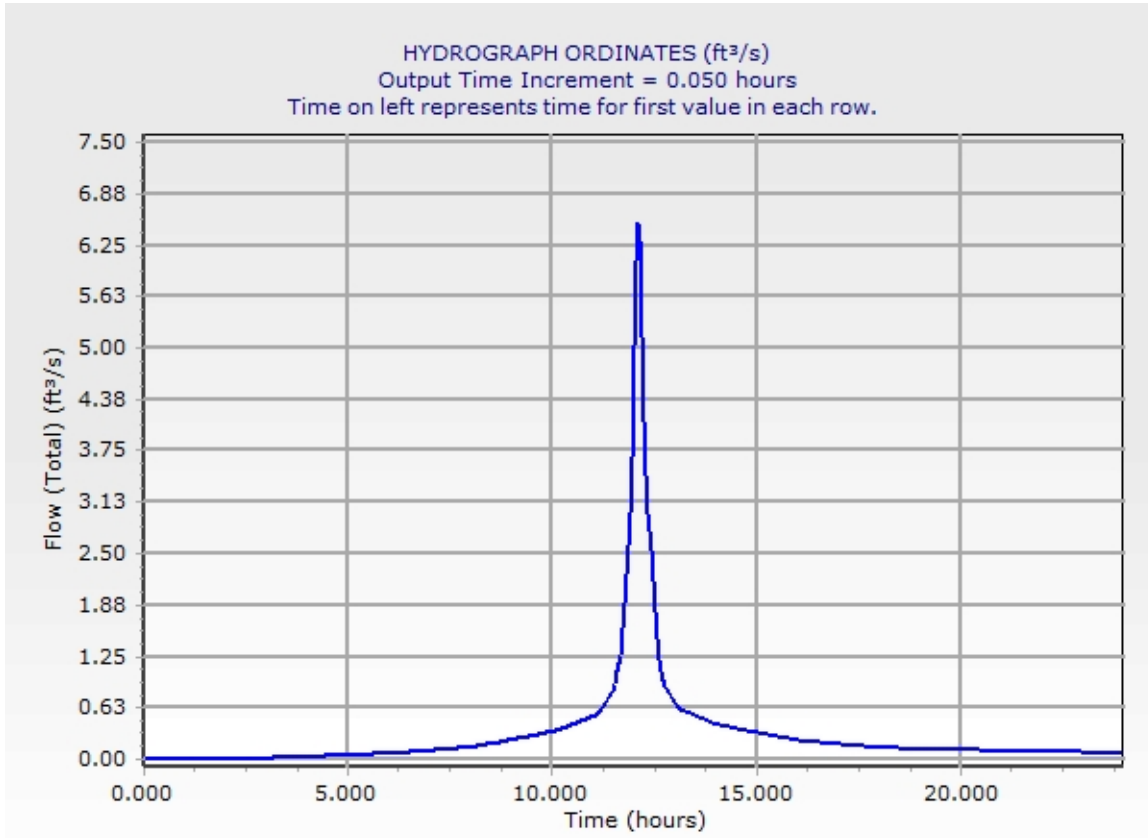
Return Event: 25 years
Storm Event: 25 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
22.200	0.09	0.09	0.09	0.09	0.09
22.450	0.09	0.09	0.09	0.09	0.09
22.700	0.08	0.08	0.08	0.08	0.08
22.950	0.08	0.08	0.08	0.08	0.08
23.200	0.08	0.08	0.08	0.08	0.08
23.450	0.08	0.08	0.08	0.08	0.08
23.700	0.08	0.07	0.07	0.07	0.07
23.950	0.07	0.07	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1C

Return Event: 25 years
Storm Event: 25 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1D

Return Event: 25 years
 Storm Event: 25 YR

Storm Event	25 YR
Return Event	25 years
Duration	24.000 hours
Depth	6.5 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	32,376.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

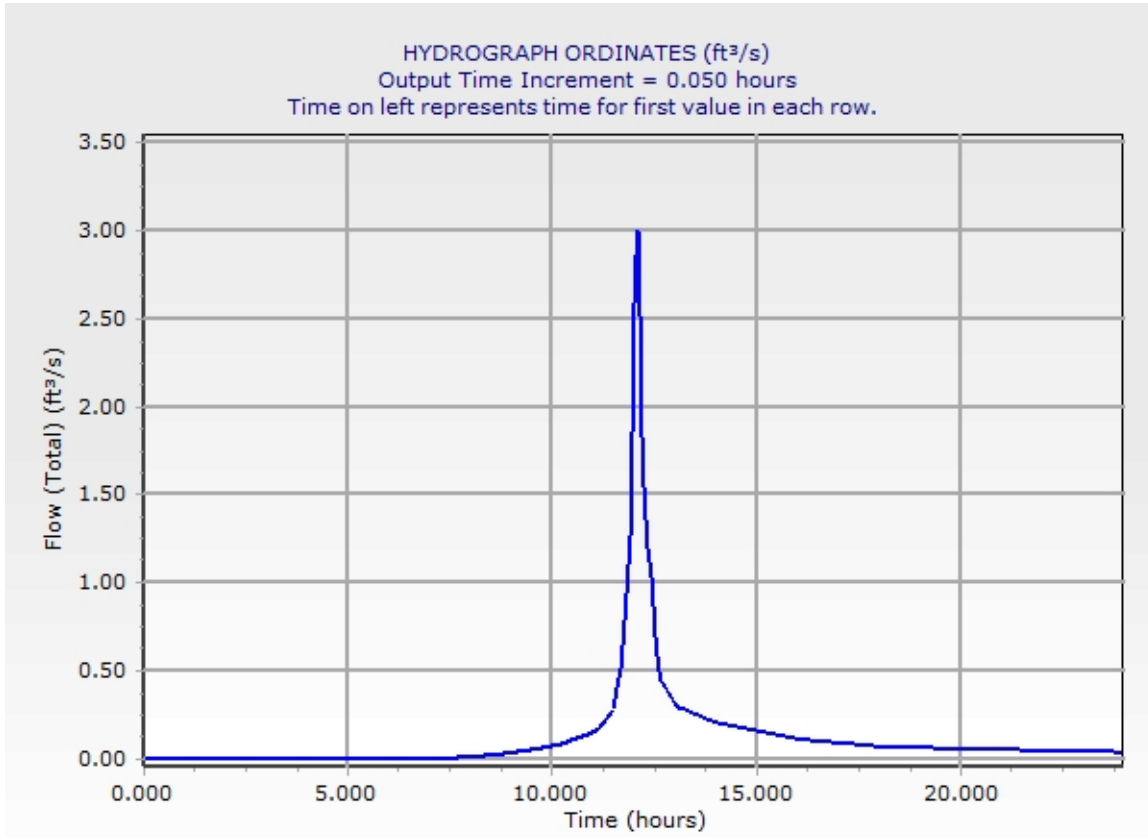
Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
7.200	0.00	0.00	0.00	0.00	0.00
7.450	0.00	0.00	0.00	0.01	0.01
7.700	0.01	0.01	0.01	0.01	0.01
7.950	0.01	0.01	0.01	0.01	0.01
8.200	0.01	0.01	0.02	0.02	0.02
8.450	0.02	0.02	0.02	0.02	0.02
8.700	0.03	0.03	0.03	0.03	0.03
8.950	0.03	0.03	0.04	0.04	0.04
9.200	0.04	0.04	0.04	0.05	0.05
9.450	0.05	0.05	0.05	0.06	0.06
9.700	0.06	0.06	0.06	0.07	0.07
9.950	0.07	0.07	0.08	0.08	0.08
10.200	0.09	0.09	0.09	0.10	0.10
10.450	0.10	0.11	0.11	0.12	0.12
10.700	0.12	0.13	0.13	0.14	0.14
10.950	0.15	0.15	0.16	0.17	0.18
11.200	0.19	0.21	0.22	0.24	0.25
11.450	0.27	0.28	0.34	0.40	0.52
11.700	0.65	0.79	0.94	1.10	1.27
11.950	1.85	2.59	2.86	3.00	2.52
12.200	1.84	1.55	1.37	1.20	1.04
12.450	0.87	0.70	0.59	0.49	0.45
12.700	0.43	0.41	0.39	0.37	0.36
12.950	0.34	0.32	0.31	0.29	0.29
13.200	0.28	0.28	0.27	0.27	0.27
13.450	0.26	0.26	0.25	0.25	0.24
13.700	0.24	0.23	0.23	0.22	0.22
13.950	0.21	0.21	0.20	0.20	0.20
14.200	0.20	0.19	0.19	0.19	0.19
14.450	0.19	0.18	0.18	0.18	0.18
14.700	0.17	0.17	0.17	0.17	0.16
14.950	0.16	0.16	0.16	0.16	0.15
15.200	0.15	0.15	0.15	0.14	0.14
15.450	0.14	0.14	0.13	0.13	0.13
15.700	0.13	0.12	0.12	0.12	0.12

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1D

Return Event: 25 years
 Storm Event: 25 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
15.950	0.12	0.11	0.11	0.11	0.11
16.200	0.11	0.11	0.11	0.10	0.10
16.450	0.10	0.10	0.10	0.10	0.10
16.700	0.10	0.10	0.09	0.09	0.09
16.950	0.09	0.09	0.09	0.09	0.09
17.200	0.09	0.09	0.08	0.08	0.08
17.450	0.08	0.08	0.08	0.08	0.08
17.700	0.08	0.07	0.07	0.07	0.07
17.950	0.07	0.07	0.07	0.07	0.07
18.200	0.07	0.07	0.07	0.07	0.07
18.450	0.07	0.07	0.07	0.06	0.06
18.700	0.06	0.06	0.06	0.06	0.06
18.950	0.06	0.06	0.06	0.06	0.06
19.200	0.06	0.06	0.06	0.06	0.06
19.450	0.06	0.06	0.06	0.06	0.06
19.700	0.06	0.06	0.06	0.06	0.06
19.950	0.06	0.06	0.06	0.06	0.06
20.200	0.06	0.05	0.05	0.05	0.05
20.450	0.05	0.05	0.05	0.05	0.05
20.700	0.05	0.05	0.05	0.05	0.05
20.950	0.05	0.05	0.05	0.05	0.05
21.200	0.05	0.05	0.05	0.05	0.05
21.450	0.05	0.05	0.05	0.05	0.05
21.700	0.05	0.05	0.05	0.05	0.05
21.950	0.05	0.05	0.05	0.05	0.05
22.200	0.05	0.05	0.04	0.04	0.04
22.450	0.04	0.04	0.04	0.04	0.04
22.700	0.04	0.04	0.04	0.04	0.04
22.950	0.04	0.04	0.04	0.04	0.04
23.200	0.04	0.04	0.04	0.04	0.04
23.450	0.04	0.04	0.04	0.04	0.04
23.700	0.04	0.04	0.04	0.04	0.04
23.950	0.04	0.04	(N/A)	(N/A)	(N/A)



Subsection: Addition Summary
 Label: DP-1

Return Event: 25 years
 Storm Event: 25 YR

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Outlet-1B	IB-1
CO-1D	J-1D
<Catchment to Outflow Node>	PDA-1A

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-1B	33,762.046	12.400	6.12
Flow (From)	J-1D	10,564.601	12.100	3.00
Flow (From)	PDA-1A	5,463.083	12.100	1.53
Flow (In)	DP-1	49,789.730	12.350	7.78

Subsection: Addition Summary
Label: J-1D

Return Event: 25 years
Storm Event: 25 YR

Summary for Hydrograph Addition at 'J-1D'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1D

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PDA-1D	10,564.601	12.100	3.00
Flow (In)	J-1D	10,564.601	12.100	3.00

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
2.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.550	0.00	0.01	0.01	0.00	0.00	1.000	405.00
2.600	0.00	0.01	0.01	0.00	0.00	1.000	405.00
2.650	0.00	0.02	0.02	0.00	0.00	1.000	405.00
2.700	0.00	0.02	0.02	0.00	0.00	2.000	405.00
2.750	0.01	0.03	0.03	0.00	0.00	3.000	405.00
2.800	0.01	0.04	0.04	0.00	0.00	4.000	405.00
2.850	0.01	0.05	0.05	0.00	0.00	4.000	405.00
2.900	0.01	0.06	0.07	0.00	0.00	5.000	405.00
2.950	0.01	0.08	0.08	0.00	0.00	6.000	405.00
3.000	0.01	0.09	0.09	0.00	0.00	8.000	405.00
3.050	0.01	0.10	0.11	0.00	0.00	9.000	405.00
3.100	0.01	0.12	0.13	0.00	0.00	10.000	405.00
3.150	0.01	0.14	0.14	0.00	0.00	12.000	405.00
3.200	0.01	0.15	0.16	0.00	0.00	13.000	405.00
3.250	0.01	0.17	0.18	0.00	0.00	14.000	405.00
3.300	0.01	0.19	0.20	0.01	0.00	16.000	405.00
3.350	0.02	0.21	0.22	0.01	0.00	18.000	405.01
3.400	0.02	0.23	0.24	0.01	0.00	19.000	405.01
3.450	0.02	0.25	0.26	0.01	0.00	21.000	405.01
3.500	0.02	0.27	0.28	0.01	0.00	23.000	405.01
3.550	0.02	0.29	0.31	0.01	0.00	25.000	405.01
3.600	0.02	0.31	0.33	0.01	0.00	27.000	405.01
3.650	0.02	0.34	0.36	0.01	0.00	29.000	405.01
3.700	0.02	0.36	0.38	0.01	0.00	31.000	405.01
3.750	0.02	0.38	0.41	0.01	0.00	33.000	405.01
3.800	0.02	0.41	0.43	0.01	0.00	35.000	405.01
3.850	0.02	0.43	0.46	0.01	0.00	37.000	405.01
3.900	0.03	0.46	0.48	0.01	0.00	39.000	405.01
3.950	0.03	0.49	0.51	0.01	0.00	41.000	405.01
4.000	0.03	0.51	0.54	0.01	0.00	44.000	405.01
4.050	0.03	0.54	0.57	0.02	0.00	46.000	405.01
4.100	0.03	0.57	0.60	0.02	0.00	49.000	405.01
4.150	0.04	0.61	0.64	0.02	0.00	52.000	405.02
4.200	0.04	0.64	0.68	0.02	0.00	55.000	405.02
4.250	0.04	0.68	0.72	0.02	0.00	58.000	405.02
4.300	0.04	0.73	0.77	0.02	0.00	62.000	405.02
4.350	0.05	0.77	0.82	0.02	0.00	66.000	405.02

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
4.400	0.05	0.82	0.87	0.02	0.00	70.000	405.02
4.450	0.05	0.87	0.92	0.02	0.00	74.000	405.02
4.500	0.05	0.92	0.97	0.03	0.00	79.000	405.02
4.550	0.06	0.97	1.03	0.03	0.00	83.000	405.02
4.600	0.06	1.03	1.09	0.03	0.00	88.000	405.03
4.650	0.06	1.09	1.15	0.03	0.00	93.000	405.03
4.700	0.06	1.15	1.21	0.03	0.00	98.000	405.03
4.750	0.07	1.21	1.28	0.03	0.00	103.000	405.03
4.800	0.07	1.27	1.34	0.04	0.00	109.000	405.03
4.850	0.07	1.34	1.41	0.04	0.00	114.000	405.03
4.900	0.07	1.40	1.48	0.04	0.00	120.000	405.03
4.950	0.08	1.47	1.55	0.04	0.00	126.000	405.04
5.000	0.08	1.54	1.62	0.04	0.00	131.000	405.04
5.050	0.08	1.61	1.70	0.04	0.00	138.000	405.04
5.100	0.08	1.68	1.77	0.05	0.00	144.000	405.04
5.150	0.09	1.75	1.85	0.05	0.00	150.000	405.04
5.200	0.09	1.82	1.93	0.05	0.00	156.000	405.05
5.250	0.09	1.90	2.00	0.05	0.00	163.000	405.05
5.300	0.09	1.98	2.08	0.05	0.00	169.000	405.05
5.350	0.10	2.05	2.17	0.06	0.00	176.000	405.05
5.400	0.10	2.13	2.25	0.06	0.00	183.000	405.05
5.450	0.10	2.21	2.33	0.06	0.00	190.000	405.05
5.500	0.10	2.29	2.42	0.06	0.00	196.000	405.06
5.550	0.11	2.37	2.50	0.07	0.00	204.000	405.06
5.600	0.11	2.45	2.59	0.07	0.00	211.000	405.06
5.650	0.11	2.53	2.68	0.07	0.00	218.000	405.06
5.700	0.12	2.62	2.76	0.07	0.00	225.000	405.06
5.750	0.12	2.70	2.85	0.08	0.00	232.000	405.07
5.800	0.12	2.79	2.94	0.08	0.00	240.000	405.07
5.850	0.12	2.87	3.03	0.08	0.00	247.000	405.07
5.900	0.13	2.96	3.12	0.08	0.00	255.000	405.07
5.950	0.13	3.05	3.22	0.08	0.00	262.000	405.08
6.000	0.13	3.13	3.31	0.09	0.00	270.000	405.08
6.050	0.14	3.22	3.40	0.09	0.00	278.000	405.08
6.100	0.14	3.31	3.50	0.09	0.00	286.000	405.08
6.150	0.14	3.41	3.60	0.09	0.00	294.000	405.08
6.200	0.15	3.50	3.70	0.10	0.00	302.000	405.09
6.250	0.15	3.60	3.80	0.10	0.00	311.000	405.09
6.300	0.16	3.70	3.91	0.10	0.00	320.000	405.09
6.350	0.16	3.81	4.02	0.11	0.00	329.000	405.09
6.400	0.17	3.92	4.13	0.11	0.00	339.000	405.10
6.450	0.17	4.03	4.25	0.11	0.00	348.000	405.10
6.500	0.18	4.14	4.37	0.12	0.00	359.000	405.10
6.550	0.18	4.26	4.50	0.12	0.00	369.000	405.11

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
6.600	0.18	4.38	4.63	0.12	0.00	380.000	405.11
6.650	0.19	4.51	4.76	0.13	0.00	391.000	405.11
6.700	0.20	4.64	4.89	0.13	0.00	402.000	405.11
6.750	0.20	4.77	5.03	0.13	0.00	414.000	405.12
6.800	0.21	4.90	5.17	0.14	0.00	425.000	405.12
6.850	0.21	5.04	5.32	0.14	0.00	438.000	405.12
6.900	0.22	5.18	5.47	0.14	0.00	450.000	405.13
6.950	0.22	5.32	5.62	0.15	0.00	463.000	405.13
7.000	0.23	5.47	5.77	0.15	0.00	476.000	405.14
7.050	0.23	5.62	5.93	0.16	0.00	489.000	405.14
7.100	0.24	5.77	6.09	0.16	0.00	503.000	405.14
7.150	0.24	5.92	6.25	0.16	0.00	516.000	405.15
7.200	0.25	6.08	6.42	0.17	0.00	530.000	405.15
7.250	0.26	6.24	6.59	0.17	0.00	545.000	405.15
7.300	0.26	6.40	6.76	0.18	0.00	559.000	405.16
7.350	0.27	6.57	6.94	0.18	0.00	574.000	405.16
7.400	0.27	6.74	7.11	0.19	0.00	589.000	405.17
7.450	0.28	6.91	7.29	0.19	0.00	605.000	405.17
7.500	0.29	7.08	7.48	0.20	0.00	620.000	405.18
7.550	0.29	7.26	7.66	0.20	0.00	636.000	405.18
7.600	0.30	7.44	7.85	0.21	0.00	652.000	405.18
7.650	0.31	7.62	8.04	0.21	0.00	669.000	405.19
7.700	0.31	7.80	8.24	0.22	0.00	686.000	405.19
7.750	0.32	7.99	8.43	0.22	0.00	702.000	405.20
7.800	0.32	8.18	8.63	0.23	0.00	720.000	405.20
7.850	0.33	8.37	8.83	0.23	0.00	737.000	405.21
7.900	0.34	8.56	9.04	0.24	0.00	755.000	405.21
7.950	0.34	8.76	9.25	0.24	0.00	773.000	405.22
8.000	0.35	8.96	9.45	0.25	0.00	791.000	405.22
8.050	0.36	9.16	9.67	0.25	0.00	809.000	405.23
8.100	0.37	9.36	9.88	0.26	0.00	828.000	405.23
8.150	0.38	9.58	10.11	0.27	0.00	848.000	405.24
8.200	0.39	9.80	10.35	0.27	0.00	868.000	405.24
8.250	0.40	10.04	10.59	0.28	0.00	890.000	405.25
8.300	0.41	10.28	10.85	0.29	0.00	912.000	405.25
8.350	0.42	10.53	11.12	0.29	0.00	936.000	405.26
8.400	0.44	10.79	11.39	0.30	0.00	960.000	405.27
8.450	0.45	11.07	11.68	0.31	0.00	986.000	405.27
8.500	0.46	11.35	11.98	0.32	0.00	1,012.000	405.28
8.550	0.48	11.64	12.29	0.32	0.00	1,039.000	405.29
8.600	0.49	11.94	12.60	0.33	0.00	1,067.000	405.30
8.650	0.50	12.25	12.93	0.34	0.00	1,096.000	405.30
8.700	0.51	12.57	13.26	0.35	0.00	1,126.000	405.31
8.750	0.53	12.89	13.61	0.36	0.00	1,157.000	405.32

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
8.800	0.54	13.23	13.96	0.37	0.00	1,189.000	405.33
8.850	0.55	13.57	14.32	0.38	0.00	1,221.000	405.34
8.900	0.57	13.92	14.69	0.39	0.00	1,255.000	405.35
8.950	0.58	14.28	15.07	0.40	0.00	1,289.000	405.35
9.000	0.60	14.64	15.46	0.41	0.00	1,324.000	405.36
9.050	0.61	15.02	15.85	0.42	0.00	1,360.000	405.37
9.100	0.63	15.40	16.25	0.43	0.00	1,396.000	405.38
9.150	0.64	15.79	16.66	0.44	0.00	1,434.000	405.39
9.200	0.65	16.18	17.08	0.45	0.00	1,472.000	405.40
9.250	0.67	16.58	17.50	0.46	0.00	1,511.000	405.41
9.300	0.68	16.99	17.94	0.47	0.00	1,551.000	405.42
9.350	0.70	17.41	18.37	0.48	0.00	1,592.000	405.43
9.400	0.71	17.83	18.82	0.49	0.00	1,633.000	405.44
9.450	0.73	18.26	19.27	0.51	0.00	1,676.000	405.45
9.500	0.74	18.69	19.73	0.52	0.00	1,719.000	405.46
9.550	0.76	19.13	20.20	0.53	0.00	1,762.000	405.47
9.600	0.77	19.58	20.67	0.54	0.00	1,807.000	405.49
9.650	0.79	20.03	21.15	0.56	0.00	1,852.000	405.50
9.700	0.81	20.51	21.63	0.56	0.00	1,894.000	405.51
9.750	0.82	21.02	22.14	0.56	0.00	1,937.000	405.52
9.800	0.84	21.56	22.68	0.56	0.00	1,982.000	405.53
9.850	0.85	22.13	23.25	0.56	0.00	2,030.000	405.54
9.900	0.87	22.73	23.85	0.56	0.00	2,081.000	405.55
9.950	0.89	23.37	24.49	0.56	0.00	2,135.000	405.57
10.000	0.90	24.04	25.16	0.56	0.00	2,192.000	405.58
10.050	0.92	24.74	25.86	0.56	0.00	2,252.000	405.59
10.100	0.94	25.49	26.61	0.56	0.00	2,316.000	405.61
10.150	0.97	26.28	27.40	0.56	0.00	2,384.000	405.63
10.200	1.00	27.12	28.24	0.56	0.00	2,458.000	405.64
10.250	1.03	28.03	29.15	0.56	0.00	2,537.000	405.66
10.300	1.05	28.99	30.11	0.56	0.00	2,621.000	405.68
10.350	1.08	30.00	31.12	0.56	0.00	2,711.000	405.70
10.400	1.11	31.08	32.20	0.56	0.00	2,807.000	405.72
10.450	1.14	32.22	33.34	0.56	0.00	2,909.000	405.75
10.500	1.17	33.42	34.54	0.56	0.00	3,017.000	405.77
10.550	1.20	34.68	35.80	0.56	0.00	3,131.000	405.80
10.600	1.24	36.00	37.12	0.56	0.00	3,252.000	405.83
10.650	1.27	37.38	38.50	0.56	0.00	3,380.000	405.85
10.700	1.30	38.82	39.94	0.56	0.00	3,515.000	405.88
10.750	1.33	40.33	41.45	0.56	0.00	3,656.000	405.92
10.800	1.36	41.90	43.02	0.56	0.00	3,805.000	405.95
10.850	1.39	43.53	44.65	0.56	0.00	3,962.000	405.98
10.900	1.42	45.23	46.35	0.56	0.00	4,116.000	406.01
10.950	1.46	46.99	48.11	0.56	0.00	4,265.000	406.05

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
11.000	1.49	48.81	49.93	0.56	0.00	4,421.000	406.08
11.050	1.54	50.72	51.84	0.56	0.00	4,585.000	406.11
11.100	1.61	52.75	53.87	0.56	0.00	4,762.000	406.15
11.150	1.69	54.93	56.05	0.56	0.00	4,953.000	406.19
11.200	1.80	57.31	58.43	0.56	0.00	5,164.000	406.23
11.250	1.90	59.88	61.00	0.56	0.00	5,396.000	406.27
11.300	2.01	62.68	63.80	0.56	0.00	5,651.000	406.32
11.350	2.12	65.69	66.81	0.56	0.00	5,930.000	406.38
11.400	2.23	68.92	70.04	0.56	0.00	6,234.000	406.44
11.450	2.34	72.38	73.50	0.56	0.00	6,564.000	406.50
11.500	2.46	76.07	77.19	0.56	0.00	6,878.000	406.55
11.550	2.83	80.24	81.36	0.56	0.00	7,238.000	406.62
11.600	3.34	85.28	86.40	0.56	0.00	7,681.000	406.70
11.650	4.14	91.64	92.76	0.56	0.00	8,252.000	406.80
11.700	5.11	99.76	100.88	0.56	0.00	9,004.000	406.92
11.750	6.12	109.88	111.00	0.56	0.00	9,915.000	407.07
11.800	7.21	122.09	123.21	0.56	0.00	10,988.000	407.24
11.850	8.29	136.46	137.58	0.56	0.00	12,309.000	407.44
11.900	9.43	153.05	154.17	0.56	0.00	13,781.000	407.64
11.950	12.85	174.21	175.33	0.56	0.00	15,695.000	407.90
12.000	17.52	202.76	204.57	0.56	0.35	18,282.000	408.23
12.050	19.54	236.44	239.82	0.56	1.13	21,400.000	408.60
12.100	20.36	270.27	276.33	0.56	2.47	24,578.000	408.95
12.150	17.74	300.98	308.37	0.56	3.13	27,368.000	409.24
12.200	13.37	323.88	332.09	0.56	3.55	29,500.000	409.45
12.250	11.02	338.03	348.27	0.56	4.56	30,853.000	409.58
12.300	9.47	346.53	358.51	0.56	5.43	31,678.000	409.66
12.350	8.24	351.28	364.24	0.56	5.92	32,144.000	409.71
12.400	7.07	353.22	366.59	0.56	6.12	32,336.000	409.72
12.450	5.95	352.93	366.24	0.56	6.09	32,308.000	409.72
12.500	4.82	350.83	363.71	0.56	5.88	32,101.000	409.70
12.550	4.02	347.48	359.67	0.56	5.53	31,772.000	409.67
12.600	3.32	343.47	354.82	0.56	5.12	31,380.000	409.63
12.650	2.99	339.28	349.78	0.56	4.69	30,974.000	409.59
12.700	2.79	335.37	345.06	0.56	4.29	30,597.000	409.56
12.750	2.65	331.85	340.82	0.56	3.92	30,260.000	409.53
12.800	2.52	328.64	337.03	0.56	3.63	29,953.000	409.50
12.850	2.41	325.31	333.57	0.56	3.57	29,635.000	409.46
12.900	2.29	321.86	330.00	0.56	3.51	29,308.000	409.43
12.950	2.17	318.30	326.31	0.56	3.45	28,973.000	409.40
13.000	2.05	314.64	322.53	0.56	3.38	28,630.000	409.37
13.050	1.96	310.91	318.66	0.56	3.31	28,283.000	409.33
13.100	1.88	307.15	314.76	0.56	3.25	27,934.000	409.30
13.150	1.83	303.39	310.87	0.56	3.18	27,588.000	409.26

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
13.200	1.80	299.68	307.03	0.56	3.11	27,249.000	409.23
13.250	1.77	296.04	303.25	0.56	3.04	26,917.000	409.19
13.300	1.73	292.46	299.54	0.56	2.98	26,593.000	409.16
13.350	1.70	288.94	295.89	0.56	2.92	26,277.000	409.13
13.400	1.67	285.49	292.32	0.56	2.85	25,969.000	409.09
13.450	1.64	282.10	288.80	0.56	2.79	25,667.000	409.06
13.500	1.61	278.77	285.35	0.56	2.73	25,373.000	409.03
13.550	1.58	275.50	281.96	0.56	2.67	25,085.000	409.00
13.600	1.55	272.40	278.63	0.56	2.55	24,785.000	408.97
13.650	1.52	269.48	275.48	0.56	2.44	24,501.000	408.94
13.700	1.49	266.71	272.49	0.56	2.33	24,234.000	408.91
13.750	1.46	264.10	269.67	0.56	2.22	23,983.000	408.88
13.800	1.43	261.62	266.99	0.56	2.13	23,745.000	408.86
13.850	1.40	259.26	264.45	0.56	2.03	23,521.000	408.83
13.900	1.37	257.02	262.03	0.56	1.94	23,309.000	408.81
13.950	1.34	254.89	259.73	0.56	1.86	23,108.000	408.79
14.000	1.31	252.86	257.54	0.56	1.78	22,917.000	408.77
14.050	1.28	250.92	255.45	0.56	1.70	22,736.000	408.75
14.100	1.26	249.08	253.46	0.56	1.63	22,564.000	408.73
14.150	1.24	247.34	251.58	0.56	1.56	22,402.000	408.71
14.200	1.23	245.70	249.81	0.56	1.50	22,249.000	408.69
14.250	1.21	244.14	248.13	0.56	1.43	22,106.000	408.68
14.300	1.19	242.68	246.55	0.56	1.38	21,971.000	408.66
14.350	1.18	241.29	245.05	0.56	1.32	21,843.000	408.65
14.400	1.17	239.98	243.64	0.56	1.27	21,723.000	408.63
14.450	1.15	238.74	242.30	0.56	1.22	21,609.000	408.62
14.500	1.14	237.56	241.02	0.56	1.17	21,502.000	408.61
14.550	1.12	236.44	239.82	0.56	1.13	21,400.000	408.60
14.600	1.11	235.38	238.67	0.56	1.09	21,303.000	408.58
14.650	1.09	234.36	237.58	0.56	1.05	21,212.000	408.57
14.700	1.08	233.40	236.53	0.56	1.01	21,124.000	408.56
14.750	1.06	232.48	235.54	0.56	0.97	21,041.000	408.55
14.800	1.05	231.60	234.59	0.56	0.94	20,961.000	408.55
14.850	1.03	230.75	233.68	0.56	0.90	20,886.000	408.54
14.900	1.02	229.94	232.81	0.56	0.87	20,813.000	408.53
14.950	1.00	229.17	231.97	0.56	0.84	20,743.000	408.52
15.000	0.99	228.42	231.16	0.56	0.81	20,676.000	408.51
15.050	0.98	227.70	230.39	0.56	0.78	20,612.000	408.51
15.100	0.96	227.00	229.64	0.56	0.76	20,548.000	408.50
15.150	0.95	226.29	228.91	0.56	0.75	20,480.000	408.49
15.200	0.93	225.58	228.17	0.56	0.73	20,412.000	408.48
15.250	0.92	224.86	227.43	0.56	0.72	20,344.000	408.47
15.300	0.90	224.14	226.68	0.56	0.71	20,275.000	408.47
15.350	0.89	223.41	225.93	0.56	0.70	20,205.000	408.46

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
15.400	0.87	222.68	225.17	0.56	0.69	20,136.000	408.45
15.450	0.86	221.95	224.41	0.56	0.67	20,066.000	408.44
15.500	0.84	221.21	223.65	0.56	0.66	19,996.000	408.43
15.550	0.83	220.46	222.88	0.56	0.65	19,925.000	408.43
15.600	0.81	219.71	222.10	0.56	0.64	19,855.000	408.42
15.650	0.80	218.96	221.33	0.56	0.62	19,784.000	408.41
15.700	0.78	218.20	220.54	0.56	0.61	19,712.000	408.40
15.750	0.77	217.44	219.76	0.56	0.60	19,641.000	408.39
15.800	0.75	216.68	218.97	0.56	0.58	19,569.000	408.38
15.850	0.74	215.91	218.18	0.56	0.57	19,497.000	408.37
15.900	0.72	215.14	217.38	0.56	0.56	19,425.000	408.37
15.950	0.71	214.37	216.58	0.56	0.54	19,353.000	408.36
16.000	0.70	213.59	215.77	0.56	0.53	19,280.000	408.35
16.050	0.68	212.81	214.97	0.56	0.52	19,208.000	408.34
16.100	0.67	212.04	214.17	0.56	0.50	19,136.000	408.33
16.150	0.66	211.27	213.38	0.56	0.49	19,065.000	408.32
16.200	0.66	210.52	212.59	0.56	0.48	18,994.000	408.31
16.250	0.65	209.77	211.82	0.56	0.47	18,925.000	408.31
16.300	0.64	209.04	211.06	0.56	0.45	18,857.000	408.30
16.350	0.64	208.31	210.32	0.56	0.44	18,791.000	408.29
16.400	0.63	207.60	209.58	0.56	0.43	18,725.000	408.28
16.450	0.62	206.90	208.86	0.56	0.42	18,661.000	408.27
16.500	0.62	206.21	208.14	0.56	0.41	18,597.000	408.27
16.550	0.61	205.53	207.44	0.56	0.39	18,535.000	408.26
16.600	0.60	204.86	206.75	0.56	0.38	18,474.000	408.25
16.650	0.60	204.20	206.06	0.56	0.37	18,413.000	408.24
16.700	0.59	203.55	205.39	0.56	0.36	18,354.000	408.24
16.750	0.59	202.91	204.73	0.56	0.35	18,295.000	408.23
16.800	0.58	202.27	204.07	0.56	0.34	18,238.000	408.22
16.850	0.57	201.65	203.43	0.56	0.33	18,181.000	408.22
16.900	0.57	201.03	202.79	0.56	0.32	18,125.000	408.21
16.950	0.56	200.42	202.16	0.56	0.31	18,069.000	408.20
17.000	0.55	199.82	201.54	0.56	0.30	18,015.000	408.20
17.050	0.55	199.23	200.92	0.56	0.29	17,961.000	408.19
17.100	0.54	198.64	200.31	0.56	0.28	17,908.000	408.18
17.150	0.53	198.06	199.72	0.56	0.27	17,856.000	408.18
17.200	0.53	197.49	199.12	0.56	0.26	17,804.000	408.17
17.250	0.52	196.92	198.53	0.56	0.25	17,753.000	408.16
17.300	0.52	196.36	197.95	0.56	0.24	17,702.000	408.16
17.350	0.51	195.80	197.38	0.56	0.23	17,652.000	408.15
17.400	0.50	195.25	196.81	0.56	0.22	17,603.000	408.14
17.450	0.50	194.71	196.25	0.56	0.21	17,554.000	408.14
17.500	0.49	194.17	195.69	0.56	0.20	17,506.000	408.13
17.550	0.48	193.64	195.14	0.56	0.19	17,459.000	408.13

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
17.600	0.48	193.11	194.60	0.56	0.18	17,411.000	408.12
17.650	0.47	192.59	194.06	0.56	0.17	17,365.000	408.11
17.700	0.46	192.07	193.52	0.56	0.17	17,318.000	408.11
17.750	0.46	191.55	192.99	0.56	0.16	17,273.000	408.10
17.800	0.45	191.04	192.46	0.56	0.15	17,227.000	408.10
17.850	0.44	190.54	191.94	0.56	0.14	17,182.000	408.09
17.900	0.44	190.04	191.42	0.56	0.13	17,138.000	408.09
17.950	0.43	189.54	190.91	0.56	0.12	17,094.000	408.08
18.000	0.42	189.05	190.40	0.56	0.11	17,050.000	408.08
18.050	0.42	188.56	189.89	0.56	0.11	17,007.000	408.07
18.100	0.41	188.07	189.39	0.56	0.10	16,964.000	408.06
18.150	0.41	187.60	188.90	0.56	0.09	16,922.000	408.06
18.200	0.41	187.14	188.42	0.56	0.08	16,882.000	408.05
18.250	0.41	186.69	187.96	0.56	0.07	16,842.000	408.05
18.300	0.41	186.25	187.50	0.56	0.07	16,803.000	408.04
18.350	0.40	185.82	187.06	0.56	0.06	16,765.000	408.04
18.400	0.40	185.40	186.62	0.56	0.05	16,728.000	408.03
18.450	0.40	184.99	186.20	0.56	0.05	16,693.000	408.03
18.500	0.40	184.59	185.79	0.56	0.04	16,658.000	408.03
18.550	0.40	184.20	185.38	0.56	0.03	16,623.000	408.02
18.600	0.39	183.82	184.99	0.56	0.03	16,590.000	408.02
18.650	0.39	183.45	184.60	0.56	0.02	16,557.000	408.01
18.700	0.39	183.08	184.23	0.56	0.01	16,526.000	408.01
18.750	0.39	182.73	183.86	0.56	0.01	16,495.000	408.00
18.800	0.39	182.38	183.50	0.56	0.00	16,464.000	408.00
18.850	0.38	182.03	183.15	0.56	0.00	16,432.000	408.00
18.900	0.38	181.68	182.80	0.56	0.00	16,398.000	407.99
18.950	0.38	181.32	182.44	0.56	0.00	16,364.000	407.99
19.000	0.38	180.96	182.08	0.56	0.00	16,330.000	407.98
19.050	0.38	180.60	181.72	0.56	0.00	16,295.000	407.98
19.100	0.37	180.23	181.35	0.56	0.00	16,261.000	407.97
19.150	0.37	179.86	180.98	0.56	0.00	16,225.000	407.97
19.200	0.37	179.48	180.60	0.56	0.00	16,190.000	407.97
19.250	0.37	179.10	180.22	0.56	0.00	16,154.000	407.96
19.300	0.37	178.72	179.84	0.56	0.00	16,118.000	407.96
19.350	0.37	178.33	179.45	0.56	0.00	16,081.000	407.95
19.400	0.36	177.94	179.06	0.56	0.00	16,044.000	407.95
19.450	0.36	177.54	178.66	0.56	0.00	16,007.000	407.94
19.500	0.36	177.14	178.26	0.56	0.00	15,970.000	407.94
19.550	0.36	176.74	177.86	0.56	0.00	15,932.000	407.93
19.600	0.36	176.33	177.45	0.56	0.00	15,894.000	407.93
19.650	0.35	175.92	177.04	0.56	0.00	15,855.000	407.92
19.700	0.35	175.51	176.63	0.56	0.00	15,817.000	407.92
19.750	0.35	175.09	176.21	0.56	0.00	15,777.000	407.91

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
19.800	0.35	174.67	175.79	0.56	0.00	15,738.000	407.91
19.850	0.35	174.24	175.36	0.56	0.00	15,698.000	407.90
19.900	0.34	173.81	174.93	0.56	0.00	15,658.000	407.90
19.950	0.34	173.38	174.50	0.56	0.00	15,618.000	407.89
20.000	0.34	172.94	174.06	0.56	0.00	15,577.000	407.89
20.050	0.34	172.50	173.62	0.56	0.00	15,536.000	407.88
20.100	0.34	172.05	173.17	0.56	0.00	15,495.000	407.88
20.150	0.34	171.61	172.73	0.56	0.00	15,454.000	407.87
20.200	0.33	171.16	172.28	0.56	0.00	15,412.000	407.86
20.250	0.33	170.70	171.82	0.56	0.00	15,370.000	407.86
20.300	0.33	170.25	171.37	0.56	0.00	15,328.000	407.85
20.350	0.33	169.79	170.91	0.56	0.00	15,286.000	407.85
20.400	0.33	169.32	170.44	0.56	0.00	15,243.000	407.84
20.450	0.33	168.86	169.98	0.56	0.00	15,200.000	407.84
20.500	0.33	168.39	169.51	0.56	0.00	15,157.000	407.83
20.550	0.32	167.92	169.04	0.56	0.00	15,114.000	407.83
20.600	0.32	167.44	168.56	0.56	0.00	15,071.000	407.82
20.650	0.32	166.97	168.09	0.56	0.00	15,027.000	407.81
20.700	0.32	166.49	167.61	0.56	0.00	14,983.000	407.81
20.750	0.32	166.00	167.12	0.56	0.00	14,939.000	407.80
20.800	0.32	165.51	166.63	0.56	0.00	14,895.000	407.80
20.850	0.32	165.03	166.15	0.56	0.00	14,851.000	407.79
20.900	0.31	164.53	165.65	0.56	0.00	14,806.000	407.78
20.950	0.31	164.04	165.16	0.56	0.00	14,761.000	407.78
21.000	0.31	163.54	164.66	0.56	0.00	14,716.000	407.77
21.050	0.31	163.04	164.16	0.56	0.00	14,671.000	407.77
21.100	0.31	162.54	163.66	0.56	0.00	14,626.000	407.76
21.150	0.31	162.03	163.15	0.56	0.00	14,580.000	407.75
21.200	0.30	161.52	162.64	0.56	0.00	14,534.000	407.75
21.250	0.30	161.01	162.13	0.56	0.00	14,488.000	407.74
21.300	0.30	160.50	161.62	0.56	0.00	14,442.000	407.73
21.350	0.30	159.98	161.10	0.56	0.00	14,396.000	407.73
21.400	0.30	159.46	160.58	0.56	0.00	14,349.000	407.72
21.450	0.30	158.94	160.06	0.56	0.00	14,302.000	407.72
21.500	0.29	158.41	159.53	0.56	0.00	14,255.000	407.71
21.550	0.29	157.88	159.00	0.56	0.00	14,208.000	407.70
21.600	0.29	157.34	158.46	0.56	0.00	14,160.000	407.70
21.650	0.29	156.81	157.93	0.56	0.00	14,113.000	407.69
21.700	0.29	156.27	157.39	0.56	0.00	14,065.000	407.68
21.750	0.29	155.73	156.85	0.56	0.00	14,017.000	407.68
21.800	0.29	155.18	156.30	0.56	0.00	13,969.000	407.67
21.850	0.29	154.64	155.76	0.56	0.00	13,921.000	407.66
21.900	0.28	154.09	155.21	0.56	0.00	13,873.000	407.66
21.950	0.28	153.54	154.66	0.56	0.00	13,824.000	407.65

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 25 years
 Storm Event: 25 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
22.000	0.28	152.98	154.10	0.56	0.00	13,775.000	407.64
22.050	0.28	152.42	153.54	0.56	0.00	13,726.000	407.64
22.100	0.28	151.86	152.98	0.56	0.00	13,677.000	407.63
22.150	0.28	151.30	152.42	0.56	0.00	13,628.000	407.62
22.200	0.28	150.73	151.85	0.56	0.00	13,578.000	407.62
22.250	0.27	150.16	151.28	0.56	0.00	13,529.000	407.61
22.300	0.27	149.59	150.71	0.56	0.00	13,479.000	407.60
22.350	0.27	149.01	150.13	0.56	0.00	13,428.000	407.60
22.400	0.27	148.43	149.55	0.56	0.00	13,378.000	407.59
22.450	0.27	147.85	148.97	0.56	0.00	13,328.000	407.58
22.500	0.27	147.26	148.38	0.56	0.00	13,277.000	407.57
22.550	0.27	146.67	147.79	0.56	0.00	13,227.000	407.57
22.600	0.27	146.08	147.20	0.56	0.00	13,176.000	407.56
22.650	0.26	145.49	146.61	0.56	0.00	13,125.000	407.55
22.700	0.26	144.90	146.02	0.56	0.00	13,074.000	407.55
22.750	0.26	144.30	145.42	0.56	0.00	13,022.000	407.54
22.800	0.26	143.70	144.82	0.56	0.00	12,971.000	407.53
22.850	0.26	143.09	144.21	0.56	0.00	12,919.000	407.52
22.900	0.26	142.48	143.60	0.56	0.00	12,867.000	407.52
22.950	0.25	141.87	142.99	0.56	0.00	12,815.000	407.51
23.000	0.25	141.26	142.38	0.56	0.00	12,763.000	407.50
23.050	0.25	140.64	141.76	0.56	0.00	12,705.000	407.49
23.100	0.25	140.02	141.14	0.56	0.00	12,646.000	407.48
23.150	0.25	139.40	140.52	0.56	0.00	12,587.000	407.48
23.200	0.25	138.77	139.89	0.56	0.00	12,527.000	407.47
23.250	0.25	138.14	139.26	0.56	0.00	12,468.000	407.46
23.300	0.24	137.51	138.63	0.56	0.00	12,408.000	407.45
23.350	0.24	136.88	138.00	0.56	0.00	12,348.000	407.44
23.400	0.24	136.24	137.36	0.56	0.00	12,288.000	407.43
23.450	0.24	135.60	136.72	0.56	0.00	12,228.000	407.42
23.500	0.24	134.96	136.08	0.56	0.00	12,168.000	407.41
23.550	0.24	134.31	135.43	0.56	0.00	12,108.000	407.41
23.600	0.23	133.66	134.78	0.56	0.00	12,047.000	407.40
23.650	0.23	133.01	134.13	0.56	0.00	11,986.000	407.39
23.700	0.23	132.36	133.48	0.56	0.00	11,925.000	407.38
23.750	0.23	131.70	132.82	0.56	0.00	11,864.000	407.37
23.800	0.23	131.04	132.16	0.56	0.00	11,803.000	407.36
23.850	0.23	130.38	131.50	0.56	0.00	11,742.000	407.35
23.900	0.22	129.71	130.83	0.56	0.00	11,681.000	407.34
23.950	0.22	129.04	130.16	0.56	0.00	11,619.000	407.33
24.000	0.22	128.37	129.49	0.56	0.00	11,557.000	407.32

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 100 years
 Storm Event: 100 YR

Time-Depth Curve: 100 YR

Label	100 YR
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.2	0.2	0.2
3.000	0.2	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.3	0.3	0.3
4.000	0.3	0.4	0.4	0.4	0.4
4.500	0.4	0.4	0.4	0.4	0.4
5.000	0.5	0.5	0.5	0.5	0.5
5.500	0.5	0.5	0.5	0.6	0.6
6.000	0.6	0.6	0.6	0.6	0.6
6.500	0.6	0.7	0.7	0.7	0.7
7.000	0.7	0.7	0.8	0.8	0.8
7.500	0.8	0.8	0.9	0.9	0.9
8.000	0.9	0.9	1.0	1.0	1.0
8.500	1.0	1.1	1.1	1.1	1.1
9.000	1.2	1.2	1.2	1.3	1.3
9.500	1.3	1.4	1.4	1.4	1.5
10.000	1.5	1.6	1.6	1.6	1.7
10.500	1.7	1.8	1.8	1.9	1.9
11.000	2.0	2.1	2.1	2.2	2.3
11.500	2.4	2.5	2.7	3.0	3.3
12.000	4.0	4.7	5.0	5.3	5.5
12.500	5.6	5.7	5.8	5.9	5.9
13.000	6.0	6.1	6.1	6.2	6.2
13.500	6.3	6.3	6.4	6.4	6.4
14.000	6.5	6.5	6.6	6.6	6.6
14.500	6.7	6.7	6.7	6.8	6.8
15.000	6.8	6.9	6.9	6.9	6.9
15.500	7.0	7.0	7.0	7.0	7.1
16.000	7.1	7.1	7.1	7.1	7.2
16.500	7.2	7.2	7.2	7.2	7.3
17.000	7.3	7.3	7.3	7.3	7.3
17.500	7.4	7.4	7.4	7.4	7.4

Subsection: Time-Depth Curve
 Label: 13021-Storm

Return Event: 100 years
 Storm Event: 100 YR

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
18.000	7.4	7.4	7.4	7.5	7.5
18.500	7.5	7.5	7.5	7.5	7.5
19.000	7.5	7.6	7.6	7.6	7.6
19.500	7.6	7.6	7.6	7.6	7.6
20.000	7.7	7.7	7.7	7.7	7.7
20.500	7.7	7.7	7.7	7.7	7.7
21.000	7.8	7.8	7.8	7.8	7.8
21.500	7.8	7.8	7.8	7.8	7.8
22.000	7.8	7.9	7.9	7.9	7.9
22.500	7.9	7.9	7.9	7.9	7.9
23.000	7.9	7.9	7.9	8.0	8.0
23.500	8.0	8.0	8.0	8.0	8.0
24.000	8.0	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1A

Return Event: 100 years
 Storm Event: 100 YR

Storm Event	100 YR
Return Event	100 years
Duration	24.000 hours
Depth	8.0 in
Time of Concentration (Composite)	0.101 hours
Area (User Defined)	17,678.700 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
6.850	0.00	0.00	0.00	0.00	0.00
7.100	0.00	0.00	0.00	0.00	0.00
7.350	0.00	0.00	0.01	0.01	0.01
7.600	0.01	0.01	0.01	0.01	0.01
7.850	0.01	0.01	0.01	0.01	0.01
8.100	0.01	0.01	0.01	0.01	0.01
8.350	0.02	0.02	0.02	0.02	0.02
8.600	0.02	0.02	0.02	0.02	0.02
8.850	0.02	0.03	0.03	0.03	0.03
9.100	0.03	0.03	0.03	0.03	0.04
9.350	0.04	0.04	0.04	0.04	0.04
9.600	0.04	0.04	0.05	0.05	0.05
9.850	0.05	0.05	0.05	0.06	0.06
10.100	0.06	0.06	0.06	0.07	0.07
10.350	0.07	0.07	0.08	0.08	0.08
10.600	0.09	0.09	0.09	0.10	0.10
10.850	0.10	0.11	0.11	0.11	0.12
11.100	0.12	0.13	0.14	0.15	0.16
11.350	0.17	0.18	0.19	0.20	0.23
11.600	0.28	0.35	0.44	0.53	0.64
11.850	0.75	0.88	1.19	1.70	1.95
12.100	2.06	1.86	1.38	1.15	0.99
12.350	0.87	0.74	0.64	0.51	0.43
12.600	0.35	0.32	0.30	0.29	0.27
12.850	0.26	0.25	0.24	0.22	0.21
13.100	0.21	0.20	0.20	0.19	0.19
13.350	0.19	0.18	0.18	0.18	0.17
13.600	0.17	0.17	0.16	0.16	0.16
13.850	0.15	0.15	0.15	0.14	0.14
14.100	0.14	0.14	0.14	0.13	0.13
14.350	0.13	0.13	0.13	0.13	0.12
14.600	0.12	0.12	0.12	0.12	0.12
14.850	0.12	0.11	0.11	0.11	0.11
15.100	0.11	0.11	0.10	0.10	0.10
15.350	0.10	0.10	0.10	0.09	0.09

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1A

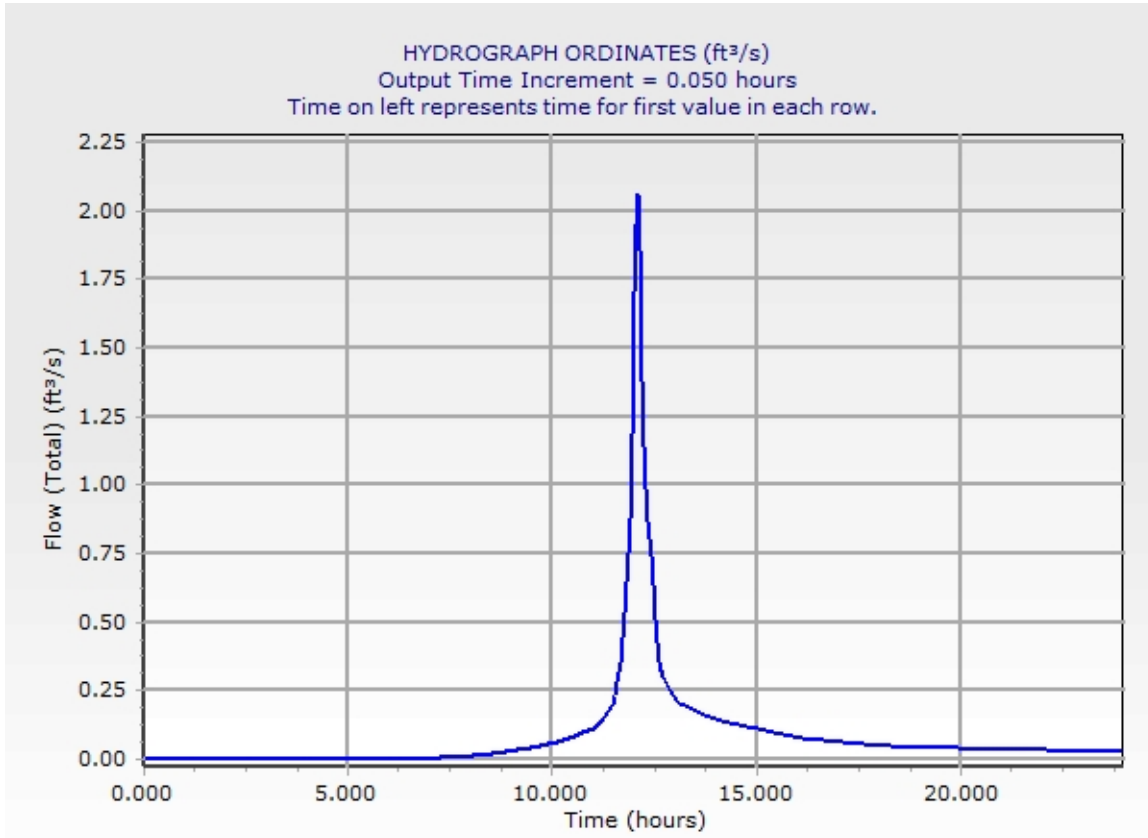
Return Event: 100 years
 Storm Event: 100 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
15.600	0.09	0.09	0.09	0.09	0.08
15.850	0.08	0.08	0.08	0.08	0.08
16.100	0.08	0.07	0.07	0.07	0.07
16.350	0.07	0.07	0.07	0.07	0.07
16.600	0.07	0.07	0.07	0.07	0.06
16.850	0.06	0.06	0.06	0.06	0.06
17.100	0.06	0.06	0.06	0.06	0.06
17.350	0.06	0.06	0.06	0.06	0.05
17.600	0.05	0.05	0.05	0.05	0.05
17.850	0.05	0.05	0.05	0.05	0.05
18.100	0.05	0.05	0.05	0.05	0.05
18.350	0.05	0.05	0.05	0.04	0.04
18.600	0.04	0.04	0.04	0.04	0.04
18.850	0.04	0.04	0.04	0.04	0.04
19.100	0.04	0.04	0.04	0.04	0.04
19.350	0.04	0.04	0.04	0.04	0.04
19.600	0.04	0.04	0.04	0.04	0.04
19.850	0.04	0.04	0.04	0.04	0.04
20.100	0.04	0.04	0.04	0.04	0.04
20.350	0.04	0.04	0.04	0.04	0.04
20.600	0.04	0.04	0.04	0.04	0.04
20.850	0.04	0.04	0.04	0.04	0.04
21.100	0.03	0.03	0.03	0.03	0.03
21.350	0.03	0.03	0.03	0.03	0.03
21.600	0.03	0.03	0.03	0.03	0.03
21.850	0.03	0.03	0.03	0.03	0.03
22.100	0.03	0.03	0.03	0.03	0.03
22.350	0.03	0.03	0.03	0.03	0.03
22.600	0.03	0.03	0.03	0.03	0.03
22.850	0.03	0.03	0.03	0.03	0.03
23.100	0.03	0.03	0.03	0.03	0.03
23.350	0.03	0.03	0.03	0.03	0.03
23.600	0.03	0.03	0.03	0.03	0.03
23.850	0.03	0.03	0.03	0.03	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1A

Return Event: 100 years
Storm Event: 100 YR



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1B

Return Event: 100 years
 Storm Event: 100 YR

Storm Event	100 YR
Return Event	100 years
Duration	24.000 hours
Depth	8.0 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	120,941.500 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
3.350	0.00	0.00	0.00	0.01	0.01
3.600	0.01	0.01	0.01	0.02	0.02
3.850	0.02	0.02	0.02	0.03	0.03
4.100	0.03	0.03	0.03	0.04	0.04
4.350	0.04	0.04	0.04	0.05	0.05
4.600	0.05	0.05	0.06	0.06	0.06
4.850	0.06	0.06	0.07	0.07	0.07
5.100	0.07	0.08	0.08	0.08	0.08
5.350	0.08	0.09	0.09	0.09	0.09
5.600	0.10	0.10	0.10	0.10	0.11
5.850	0.11	0.11	0.11	0.12	0.12
6.100	0.12	0.12	0.13	0.13	0.14
6.350	0.14	0.14	0.15	0.15	0.16
6.600	0.16	0.17	0.17	0.18	0.18
6.850	0.18	0.19	0.19	0.20	0.20
7.100	0.21	0.21	0.22	0.22	0.23
7.350	0.23	0.24	0.24	0.25	0.25
7.600	0.26	0.27	0.27	0.28	0.28
7.850	0.29	0.29	0.30	0.30	0.31
8.100	0.32	0.33	0.34	0.35	0.36
8.350	0.37	0.38	0.39	0.40	0.41
8.600	0.42	0.44	0.45	0.46	0.47
8.850	0.48	0.49	0.51	0.52	0.53
9.100	0.54	0.55	0.57	0.58	0.59
9.350	0.60	0.62	0.63	0.64	0.66
9.600	0.67	0.68	0.70	0.71	0.72
9.850	0.74	0.75	0.76	0.78	0.80
10.100	0.81	0.84	0.86	0.89	0.91
10.350	0.94	0.96	0.99	1.01	1.04
10.600	1.07	1.09	1.12	1.14	1.17
10.850	1.20	1.23	1.25	1.28	1.33
11.100	1.39	1.47	1.56	1.65	1.74
11.350	1.84	1.93	2.03	2.13	2.50
11.600	2.96	3.73	4.59	5.48	6.39
11.850	7.32	8.28	11.73	15.92	17.11

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

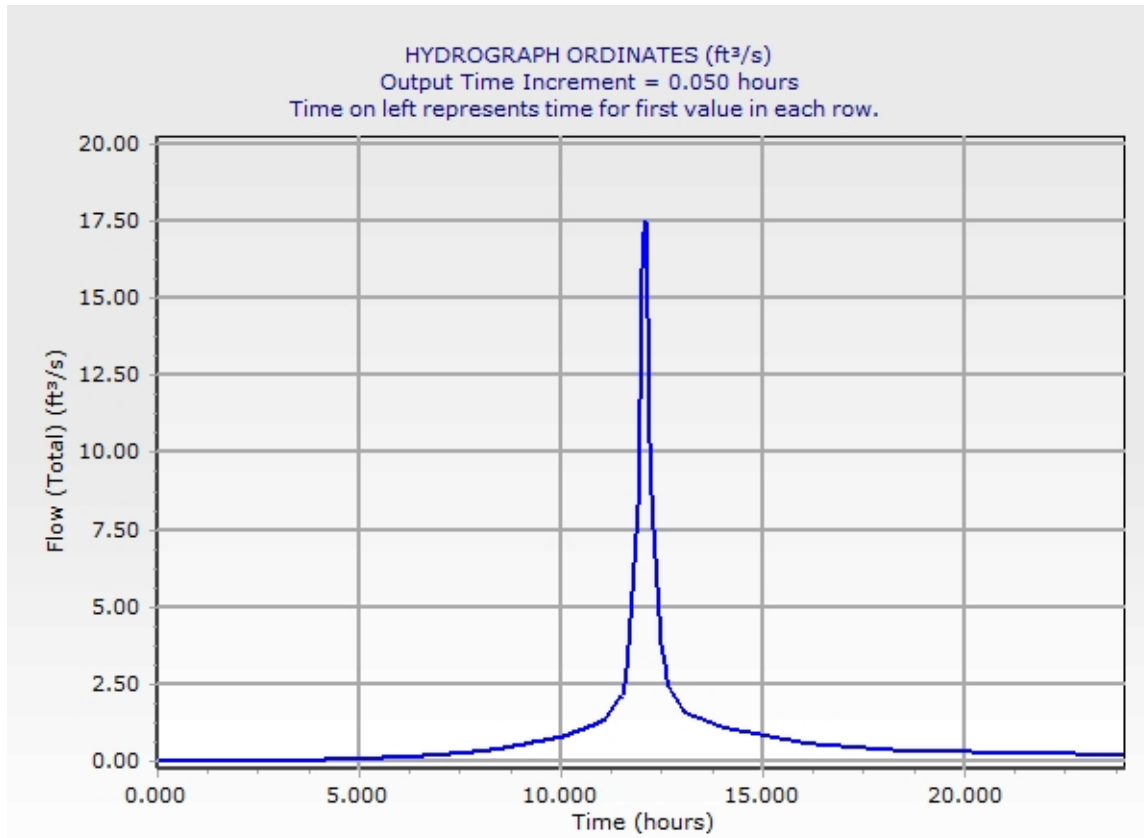
Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
12.100	17.51	14.42	10.36	8.67	7.57
12.350	6.60	5.67	4.74	3.79	3.17
12.600	2.63	2.42	2.30	2.20	2.10
12.850	2.00	1.90	1.80	1.70	1.63
13.100	1.57	1.53	1.51	1.48	1.46
13.350	1.43	1.40	1.38	1.35	1.33
13.600	1.30	1.28	1.25	1.22	1.20
13.850	1.17	1.15	1.12	1.10	1.08
14.100	1.06	1.04	1.03	1.02	1.00
14.350	0.99	0.98	0.97	0.95	0.94
14.600	0.93	0.92	0.91	0.89	0.88
14.850	0.87	0.86	0.84	0.83	0.82
15.100	0.81	0.79	0.78	0.77	0.76
15.350	0.74	0.73	0.72	0.71	0.69
15.600	0.68	0.67	0.66	0.64	0.63
15.850	0.62	0.61	0.59	0.58	0.57
16.100	0.56	0.56	0.55	0.55	0.54
16.350	0.54	0.53	0.52	0.52	0.51
16.600	0.51	0.50	0.50	0.49	0.49
16.850	0.48	0.48	0.47	0.46	0.46
17.100	0.45	0.45	0.44	0.44	0.43
17.350	0.43	0.42	0.42	0.41	0.41
17.600	0.40	0.39	0.39	0.38	0.38
17.850	0.37	0.37	0.36	0.36	0.35
18.100	0.35	0.35	0.35	0.34	0.34
18.350	0.34	0.34	0.34	0.33	0.33
18.600	0.33	0.33	0.33	0.33	0.33
18.850	0.32	0.32	0.32	0.32	0.32
19.100	0.32	0.31	0.31	0.31	0.31
19.350	0.31	0.31	0.30	0.30	0.30
19.600	0.30	0.30	0.30	0.29	0.29
19.850	0.29	0.29	0.29	0.29	0.28
20.100	0.28	0.28	0.28	0.28	0.28
20.350	0.28	0.28	0.27	0.27	0.27
20.600	0.27	0.27	0.27	0.27	0.27
20.850	0.27	0.26	0.26	0.26	0.26
21.100	0.26	0.26	0.26	0.26	0.25
21.350	0.25	0.25	0.25	0.25	0.25
21.600	0.25	0.25	0.24	0.24	0.24
21.850	0.24	0.24	0.24	0.24	0.24
22.100	0.23	0.23	0.23	0.23	0.23
22.350	0.23	0.23	0.23	0.22	0.22
22.600	0.22	0.22	0.22	0.22	0.22
22.850	0.22	0.21	0.21	0.21	0.21

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1B

Return Event: 100 years
Storm Event: 100 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
23.100	0.21	0.21	0.21	0.21	0.20
23.350	0.20	0.20	0.20	0.20	0.20
23.600	0.20	0.20	0.20	0.19	0.19
23.850	0.19	0.19	0.19	0.19	(N/A)



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1C

Return Event: 100 years
 Storm Event: 100 YR

Storm Event	100 YR
Return Event	100 years
Duration	24.000 hours
Depth	8.0 in
Time of Concentration (Composite)	0.140 hours
Area (User Defined)	56,293.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
2.000	0.00	0.00	0.00	0.00	0.00
2.250	0.01	0.01	0.01	0.01	0.01
2.500	0.01	0.01	0.01	0.01	0.02
2.750	0.02	0.02	0.02	0.02	0.02
3.000	0.02	0.02	0.03	0.03	0.03
3.250	0.03	0.03	0.03	0.03	0.03
3.500	0.03	0.04	0.04	0.04	0.04
3.750	0.04	0.04	0.04	0.04	0.05
4.000	0.05	0.05	0.05	0.05	0.05
4.250	0.05	0.05	0.06	0.06	0.06
4.500	0.06	0.06	0.06	0.06	0.06
4.750	0.07	0.07	0.07	0.07	0.07
5.000	0.07	0.07	0.07	0.08	0.08
5.250	0.08	0.08	0.08	0.08	0.08
5.500	0.08	0.09	0.09	0.09	0.09
5.750	0.09	0.09	0.09	0.09	0.09
6.000	0.10	0.10	0.10	0.10	0.10
6.250	0.11	0.11	0.11	0.11	0.11
6.500	0.12	0.12	0.12	0.12	0.13
6.750	0.13	0.13	0.13	0.14	0.14
7.000	0.14	0.15	0.15	0.15	0.15
7.250	0.16	0.16	0.16	0.16	0.17
7.500	0.17	0.17	0.18	0.18	0.18
7.750	0.18	0.19	0.19	0.19	0.19
8.000	0.20	0.20	0.20	0.21	0.21
8.250	0.22	0.23	0.23	0.24	0.24
8.500	0.25	0.25	0.26	0.26	0.27
8.750	0.28	0.28	0.29	0.29	0.30
9.000	0.31	0.31	0.32	0.32	0.33
9.250	0.34	0.34	0.35	0.36	0.36
9.500	0.37	0.37	0.38	0.39	0.39
9.750	0.40	0.41	0.41	0.42	0.43
10.000	0.43	0.44	0.45	0.46	0.47
10.250	0.48	0.49	0.50	0.52	0.53
10.500	0.54	0.55	0.57	0.58	0.59

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

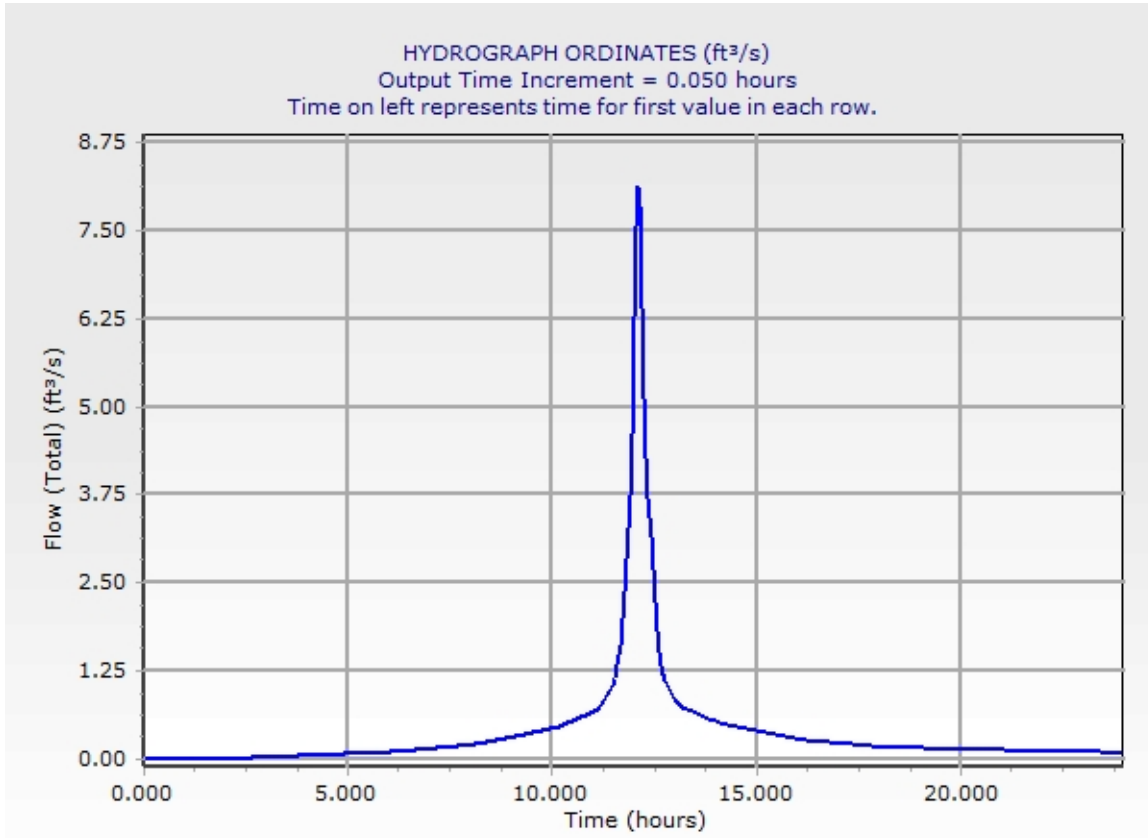
Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
10.750	0.60	0.62	0.63	0.64	0.66
11.000	0.67	0.69	0.71	0.74	0.78
11.250	0.82	0.87	0.92	0.96	1.01
11.500	1.06	1.15	1.35	1.61	1.99
11.750	2.38	2.83	3.26	3.74	4.60
12.000	6.27	7.55	8.12	7.85	6.40
12.250	5.12	4.28	3.70	3.16	2.70
12.500	2.22	1.84	1.52	1.31	1.19
12.750	1.11	1.05	1.00	0.95	0.90
13.000	0.86	0.81	0.78	0.75	0.73
13.250	0.72	0.71	0.69	0.68	0.67
13.500	0.66	0.64	0.63	0.62	0.61
13.750	0.59	0.58	0.57	0.56	0.55
14.000	0.53	0.52	0.51	0.50	0.50
14.250	0.49	0.48	0.48	0.47	0.47
14.500	0.46	0.45	0.45	0.44	0.44
14.750	0.43	0.42	0.42	0.41	0.41
15.000	0.40	0.39	0.39	0.38	0.38
15.250	0.37	0.36	0.36	0.35	0.35
15.500	0.34	0.33	0.33	0.32	0.32
15.750	0.31	0.31	0.30	0.29	0.29
16.000	0.28	0.28	0.27	0.27	0.26
16.250	0.26	0.26	0.26	0.25	0.25
16.500	0.25	0.25	0.24	0.24	0.24
16.750	0.24	0.23	0.23	0.23	0.23
17.000	0.22	0.22	0.22	0.22	0.21
17.250	0.21	0.21	0.20	0.20	0.20
17.500	0.20	0.19	0.19	0.19	0.19
17.750	0.18	0.18	0.18	0.18	0.17
18.000	0.17	0.17	0.17	0.17	0.16
18.250	0.16	0.16	0.16	0.16	0.16
18.500	0.16	0.16	0.16	0.16	0.16
18.750	0.16	0.15	0.15	0.15	0.15
19.000	0.15	0.15	0.15	0.15	0.15
19.250	0.15	0.15	0.15	0.15	0.14
19.500	0.14	0.14	0.14	0.14	0.14
19.750	0.14	0.14	0.14	0.14	0.14
20.000	0.14	0.14	0.13	0.13	0.13
20.250	0.13	0.13	0.13	0.13	0.13
20.500	0.13	0.13	0.13	0.13	0.13
20.750	0.13	0.13	0.13	0.13	0.12
21.000	0.12	0.12	0.12	0.12	0.12
21.250	0.12	0.12	0.12	0.12	0.12
21.500	0.12	0.12	0.12	0.12	0.12

Subsection: Unit Hydrograph (Hydrograph Table)
Label: PDA-1C

Return Event: 100 years
Storm Event: 100 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
21.750	0.12	0.11	0.11	0.11	0.11
22.000	0.11	0.11	0.11	0.11	0.11
22.250	0.11	0.11	0.11	0.11	0.11
22.500	0.11	0.11	0.11	0.11	0.10
22.750	0.10	0.10	0.10	0.10	0.10
23.000	0.10	0.10	0.10	0.10	0.10
23.250	0.10	0.10	0.10	0.10	0.10
23.500	0.10	0.09	0.09	0.09	0.09
23.750	0.09	0.09	0.09	0.09	0.09
24.000	0.09	(N/A)	(N/A)	(N/A)	(N/A)



Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1D

Return Event: 100 years
 Storm Event: 100 YR

Storm Event	100 YR
Return Event	100 years
Duration	24.000 hours
Depth	8.0 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	32,376.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

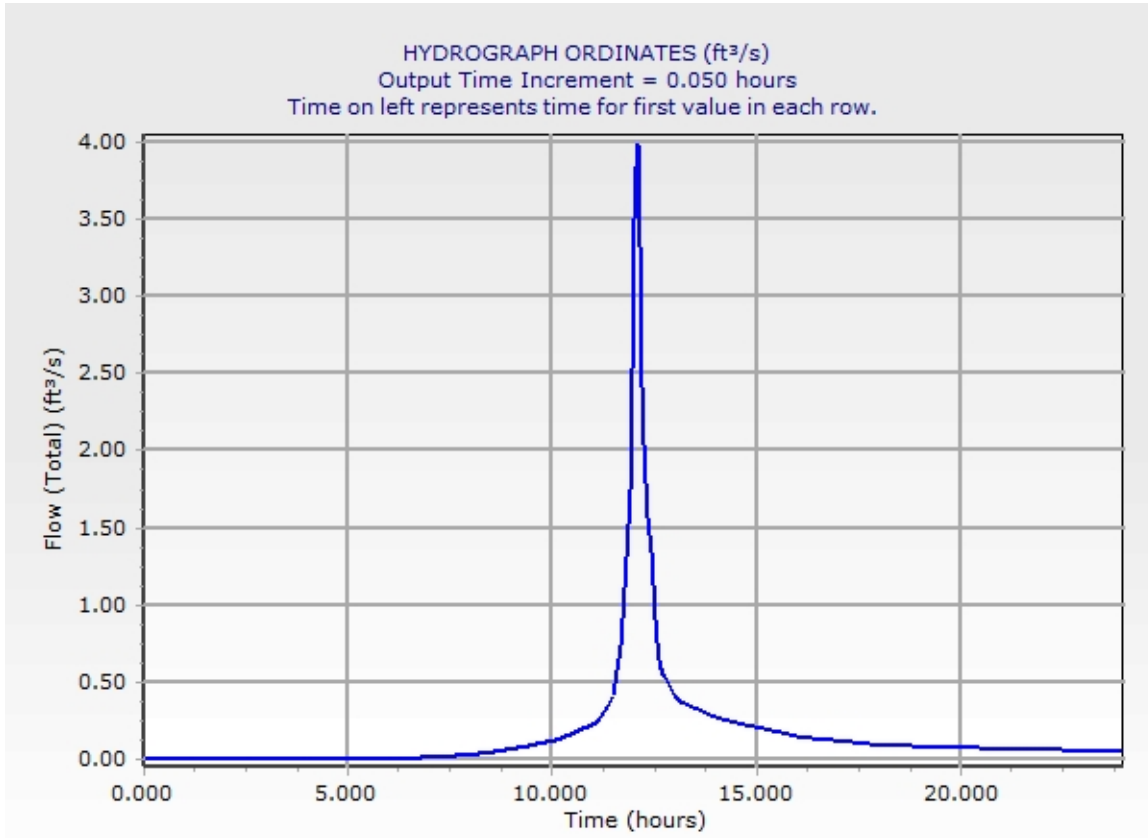
Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
6.300	0.00	0.00	0.00	0.00	0.00
6.550	0.00	0.00	0.00	0.01	0.01
6.800	0.01	0.01	0.01	0.01	0.01
7.050	0.01	0.01	0.01	0.01	0.01
7.300	0.01	0.01	0.02	0.02	0.02
7.550	0.02	0.02	0.02	0.02	0.02
7.800	0.02	0.02	0.02	0.03	0.03
8.050	0.03	0.03	0.03	0.03	0.03
8.300	0.04	0.04	0.04	0.04	0.04
8.550	0.04	0.05	0.05	0.05	0.05
8.800	0.05	0.06	0.06	0.06	0.06
9.050	0.07	0.07	0.07	0.07	0.08
9.300	0.08	0.08	0.08	0.09	0.09
9.550	0.09	0.09	0.10	0.10	0.10
9.800	0.11	0.11	0.11	0.11	0.12
10.050	0.12	0.13	0.13	0.13	0.14
10.300	0.14	0.15	0.16	0.16	0.17
10.550	0.17	0.18	0.18	0.19	0.20
10.800	0.20	0.21	0.21	0.22	0.23
11.050	0.24	0.25	0.27	0.28	0.30
11.300	0.32	0.34	0.36	0.38	0.41
11.550	0.48	0.57	0.73	0.91	1.10
11.800	1.31	1.52	1.75	2.52	3.50
12.050	3.83	3.99	3.33	2.42	2.04
12.300	1.79	1.57	1.35	1.13	0.91
12.550	0.76	0.63	0.58	0.55	0.53
12.800	0.51	0.48	0.46	0.44	0.41
13.050	0.40	0.38	0.37	0.37	0.36
13.300	0.35	0.35	0.34	0.34	0.33
13.550	0.32	0.32	0.31	0.31	0.30
13.800	0.29	0.29	0.28	0.27	0.27
14.050	0.26	0.26	0.26	0.25	0.25
14.300	0.25	0.24	0.24	0.24	0.23
14.550	0.23	0.23	0.23	0.22	0.22
14.800	0.22	0.21	0.21	0.21	0.21

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: PDA-1D

Return Event: 100 years
 Storm Event: 100 YR

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
15.050	0.20	0.20	0.20	0.19	0.19
15.300	0.19	0.18	0.18	0.18	0.17
15.550	0.17	0.17	0.17	0.16	0.16
15.800	0.16	0.15	0.15	0.15	0.14
16.050	0.14	0.14	0.14	0.14	0.14
16.300	0.13	0.13	0.13	0.13	0.13
16.550	0.13	0.13	0.12	0.12	0.12
16.800	0.12	0.12	0.12	0.12	0.12
17.050	0.11	0.11	0.11	0.11	0.11
17.300	0.11	0.11	0.10	0.10	0.10
17.550	0.10	0.10	0.10	0.10	0.10
17.800	0.09	0.09	0.09	0.09	0.09
18.050	0.09	0.09	0.09	0.09	0.09
18.300	0.09	0.08	0.08	0.08	0.08
18.550	0.08	0.08	0.08	0.08	0.08
18.800	0.08	0.08	0.08	0.08	0.08
19.050	0.08	0.08	0.08	0.08	0.08
19.300	0.08	0.08	0.08	0.08	0.08
19.550	0.08	0.07	0.07	0.07	0.07
19.800	0.07	0.07	0.07	0.07	0.07
20.050	0.07	0.07	0.07	0.07	0.07
20.300	0.07	0.07	0.07	0.07	0.07
20.550	0.07	0.07	0.07	0.07	0.07
20.800	0.07	0.07	0.07	0.07	0.07
21.050	0.07	0.06	0.06	0.06	0.06
21.300	0.06	0.06	0.06	0.06	0.06
21.550	0.06	0.06	0.06	0.06	0.06
21.800	0.06	0.06	0.06	0.06	0.06
22.050	0.06	0.06	0.06	0.06	0.06
22.300	0.06	0.06	0.06	0.06	0.06
22.550	0.06	0.06	0.06	0.06	0.05
22.800	0.05	0.05	0.05	0.05	0.05
23.050	0.05	0.05	0.05	0.05	0.05
23.300	0.05	0.05	0.05	0.05	0.05
23.550	0.05	0.05	0.05	0.05	0.05
23.800	0.05	0.05	0.05	0.05	0.05



Subsection: Addition Summary
Label: DP-1

Return Event: 100 years
Storm Event: 100 YR

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Outlet-1B	IB-1
CO-1D	J-1D
<Catchment to Outflow Node>	PDA-1A

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-1B	51,971.900	12.300	10.85
Flow (From)	J-1D	14,218.180	12.100	3.99
Flow (From)	PDA-1A	7,420.276	12.100	2.06
Flow (In)	DP-1	73,610.355	12.150	14.04

Subsection: Addition Summary
Label: J-1D

Return Event: 100 years
Storm Event: 100 YR

Summary for Hydrograph Addition at 'J-1D'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1D

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	PDA-1D	14,218.180	12.100	3.99
Flow (In)	J-1D	14,218.180	12.100	3.99

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
0.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.100	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.150	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.200	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.250	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.300	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.350	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.400	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.450	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.500	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.550	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.600	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.650	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.700	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.750	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.800	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.850	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.900	0.00	0.00	0.00	0.00	0.00	0.000	405.00
1.950	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.000	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.050	0.00	0.00	0.00	0.00	0.00	0.000	405.00
2.100	0.00	0.01	0.01	0.00	0.00	1.000	405.00
2.150	0.00	0.01	0.01	0.00	0.00	1.000	405.00

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
2.200	0.00	0.02	0.02	0.00	0.00	2.000	405.00
2.250	0.01	0.03	0.03	0.00	0.00	2.000	405.00
2.300	0.01	0.04	0.04	0.00	0.00	3.000	405.00
2.350	0.01	0.05	0.05	0.00	0.00	4.000	405.00
2.400	0.01	0.06	0.07	0.00	0.00	5.000	405.00
2.450	0.01	0.08	0.08	0.00	0.00	7.000	405.00
2.500	0.01	0.09	0.10	0.00	0.00	8.000	405.00
2.550	0.01	0.11	0.12	0.00	0.00	9.000	405.00
2.600	0.01	0.13	0.14	0.00	0.00	11.000	405.00
2.650	0.01	0.15	0.16	0.00	0.00	13.000	405.00
2.700	0.02	0.17	0.18	0.00	0.00	14.000	405.00
2.750	0.02	0.19	0.20	0.01	0.00	16.000	405.00
2.800	0.02	0.22	0.23	0.01	0.00	18.000	405.01
2.850	0.02	0.24	0.25	0.01	0.00	20.000	405.01
2.900	0.02	0.26	0.28	0.01	0.00	23.000	405.01
2.950	0.02	0.29	0.31	0.01	0.00	25.000	405.01
3.000	0.02	0.32	0.34	0.01	0.00	27.000	405.01
3.050	0.02	0.35	0.36	0.01	0.00	29.000	405.01
3.100	0.03	0.37	0.39	0.01	0.00	32.000	405.01
3.150	0.03	0.40	0.43	0.01	0.00	34.000	405.01
3.200	0.03	0.43	0.46	0.01	0.00	37.000	405.01
3.250	0.03	0.46	0.49	0.01	0.00	39.000	405.01
3.300	0.03	0.49	0.52	0.01	0.00	42.000	405.01
3.350	0.03	0.53	0.56	0.01	0.00	45.000	405.01
3.400	0.03	0.56	0.59	0.02	0.00	48.000	405.01
3.450	0.04	0.60	0.63	0.02	0.00	51.000	405.01
3.500	0.04	0.64	0.68	0.02	0.00	55.000	405.02
3.550	0.04	0.69	0.73	0.02	0.00	59.000	405.02
3.600	0.05	0.74	0.78	0.02	0.00	63.000	405.02
3.650	0.05	0.79	0.83	0.02	0.00	67.000	405.02
3.700	0.05	0.85	0.89	0.02	0.00	72.000	405.02
3.750	0.06	0.91	0.96	0.03	0.00	77.000	405.02
3.800	0.06	0.97	1.02	0.03	0.00	83.000	405.02
3.850	0.06	1.03	1.09	0.03	0.00	88.000	405.03
3.900	0.07	1.10	1.16	0.03	0.00	94.000	405.03
3.950	0.07	1.17	1.24	0.03	0.00	100.000	405.03
4.000	0.07	1.24	1.31	0.03	0.00	106.000	405.03
4.050	0.08	1.32	1.39	0.04	0.00	113.000	405.03
4.100	0.08	1.40	1.47	0.04	0.00	119.000	405.03
4.150	0.08	1.48	1.56	0.04	0.00	126.000	405.04
4.200	0.09	1.56	1.64	0.04	0.00	133.000	405.04
4.250	0.09	1.64	1.73	0.05	0.00	140.000	405.04
4.300	0.09	1.73	1.82	0.05	0.00	148.000	405.04
4.350	0.10	1.81	1.91	0.05	0.00	155.000	405.04

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
4.400	0.10	1.90	2.01	0.05	0.00	163.000	405.05
4.450	0.10	1.99	2.10	0.06	0.00	171.000	405.05
4.500	0.11	2.09	2.20	0.06	0.00	179.000	405.05
4.550	0.11	2.18	2.30	0.06	0.00	187.000	405.05
4.600	0.11	2.28	2.40	0.06	0.00	195.000	405.06
4.650	0.12	2.37	2.51	0.07	0.00	204.000	405.06
4.700	0.12	2.47	2.61	0.07	0.00	212.000	405.06
4.750	0.12	2.57	2.72	0.07	0.00	221.000	405.06
4.800	0.13	2.67	2.82	0.07	0.00	230.000	405.07
4.850	0.13	2.78	2.93	0.08	0.00	239.000	405.07
4.900	0.13	2.88	3.04	0.08	0.00	248.000	405.07
4.950	0.14	2.98	3.15	0.08	0.00	257.000	405.07
5.000	0.14	3.09	3.26	0.09	0.00	266.000	405.08
5.050	0.14	3.20	3.37	0.09	0.00	275.000	405.08
5.100	0.15	3.30	3.49	0.09	0.00	285.000	405.08
5.150	0.15	3.41	3.60	0.09	0.00	294.000	405.08
5.200	0.15	3.52	3.72	0.10	0.00	304.000	405.09
5.250	0.16	3.63	3.84	0.10	0.00	314.000	405.09
5.300	0.16	3.74	3.95	0.10	0.00	323.000	405.09
5.350	0.17	3.86	4.07	0.11	0.00	333.000	405.10
5.400	0.17	3.97	4.19	0.11	0.00	343.000	405.10
5.450	0.17	4.08	4.31	0.11	0.00	353.000	405.10
5.500	0.18	4.20	4.43	0.12	0.00	363.000	405.10
5.550	0.18	4.31	4.55	0.12	0.00	373.000	405.11
5.600	0.18	4.43	4.68	0.12	0.00	384.000	405.11
5.650	0.19	4.55	4.80	0.13	0.00	394.000	405.11
5.700	0.19	4.66	4.92	0.13	0.00	404.000	405.12
5.750	0.19	4.78	5.05	0.13	0.00	415.000	405.12
5.800	0.20	4.90	5.17	0.14	0.00	425.000	405.12
5.850	0.20	5.02	5.30	0.14	0.00	436.000	405.12
5.900	0.20	5.14	5.42	0.14	0.00	446.000	405.13
5.950	0.21	5.26	5.55	0.15	0.00	457.000	405.13
6.000	0.21	5.38	5.68	0.15	0.00	468.000	405.13
6.050	0.22	5.50	5.81	0.15	0.00	479.000	405.14
6.100	0.22	5.62	5.94	0.16	0.00	490.000	405.14
6.150	0.23	5.75	6.07	0.16	0.00	501.000	405.14
6.200	0.23	5.88	6.21	0.16	0.00	513.000	405.15
6.250	0.24	6.02	6.35	0.17	0.00	525.000	405.15
6.300	0.24	6.16	6.50	0.17	0.00	537.000	405.15
6.350	0.25	6.30	6.65	0.17	0.00	550.000	405.16
6.400	0.26	6.45	6.81	0.18	0.00	564.000	405.16
6.450	0.26	6.61	6.97	0.18	0.00	577.000	405.16
6.500	0.27	6.76	7.14	0.19	0.00	592.000	405.17
6.550	0.28	6.93	7.31	0.19	0.00	606.000	405.17

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
6.600	0.28	7.09	7.49	0.20	0.00	621.000	405.18
6.650	0.29	7.26	7.67	0.20	0.00	637.000	405.18
6.700	0.30	7.44	7.85	0.21	0.00	652.000	405.18
6.750	0.30	7.62	8.04	0.21	0.00	669.000	405.19
6.800	0.31	7.80	8.23	0.22	0.00	685.000	405.19
6.850	0.32	7.99	8.43	0.22	0.00	702.000	405.20
6.900	0.33	8.18	8.63	0.23	0.00	720.000	405.20
6.950	0.33	8.37	8.84	0.23	0.00	737.000	405.21
7.000	0.34	8.57	9.05	0.24	0.00	756.000	405.21
7.050	0.35	8.77	9.26	0.24	0.00	774.000	405.22
7.100	0.36	8.98	9.48	0.25	0.00	793.000	405.22
7.150	0.36	9.19	9.70	0.26	0.00	812.000	405.23
7.200	0.37	9.40	9.93	0.26	0.00	832.000	405.23
7.250	0.38	9.62	10.15	0.27	0.00	851.000	405.24
7.300	0.39	9.84	10.38	0.27	0.00	872.000	405.24
7.350	0.39	10.06	10.62	0.28	0.00	892.000	405.25
7.400	0.40	10.29	10.86	0.29	0.00	913.000	405.26
7.450	0.41	10.52	11.10	0.29	0.00	934.000	405.26
7.500	0.42	10.75	11.35	0.30	0.00	956.000	405.27
7.550	0.43	10.99	11.60	0.30	0.00	978.000	405.27
7.600	0.43	11.22	11.85	0.31	0.00	1,000.000	405.28
7.650	0.44	11.47	12.10	0.32	0.00	1,023.000	405.28
7.700	0.45	11.71	12.36	0.33	0.00	1,046.000	405.29
7.750	0.46	11.96	12.62	0.33	0.00	1,069.000	405.30
7.800	0.47	12.21	12.89	0.34	0.00	1,093.000	405.30
7.850	0.48	12.46	13.15	0.35	0.00	1,116.000	405.31
7.900	0.49	12.72	13.42	0.35	0.00	1,141.000	405.32
7.950	0.49	12.98	13.70	0.36	0.00	1,165.000	405.32
8.000	0.50	13.24	13.97	0.37	0.00	1,190.000	405.33
8.050	0.51	13.50	14.25	0.37	0.00	1,215.000	405.33
8.100	0.52	13.78	14.54	0.38	0.00	1,241.000	405.34
8.150	0.54	14.06	14.84	0.39	0.00	1,268.000	405.35
8.200	0.55	14.35	15.15	0.40	0.00	1,296.000	405.36
8.250	0.57	14.66	15.47	0.41	0.00	1,325.000	405.36
8.300	0.58	14.98	15.81	0.42	0.00	1,356.000	405.37
8.350	0.60	15.32	16.17	0.43	0.00	1,388.000	405.38
8.400	0.62	15.66	16.53	0.43	0.00	1,422.000	405.39
8.450	0.63	16.02	16.91	0.44	0.00	1,457.000	405.40
8.500	0.65	16.39	17.30	0.46	0.00	1,493.000	405.41
8.550	0.67	16.78	17.71	0.47	0.00	1,530.000	405.42
8.600	0.68	17.17	18.13	0.48	0.00	1,569.000	405.43
8.650	0.70	17.58	18.56	0.49	0.00	1,609.000	405.44
8.700	0.72	18.00	19.00	0.50	0.00	1,650.000	405.45
8.750	0.73	18.43	19.45	0.51	0.00	1,692.000	405.46

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
8.800	0.75	18.87	19.92	0.52	0.00	1,736.000	405.47
8.850	0.77	19.32	20.39	0.54	0.00	1,781.000	405.48
8.900	0.79	19.78	20.88	0.55	0.00	1,826.000	405.49
8.950	0.81	20.25	21.37	0.56	0.00	1,872.000	405.50
9.000	0.82	20.76	21.88	0.56	0.00	1,915.000	405.51
9.050	0.84	21.31	22.43	0.56	0.00	1,961.000	405.52
9.100	0.86	21.89	23.01	0.56	0.00	2,010.000	405.54
9.150	0.88	22.51	23.63	0.56	0.00	2,062.000	405.55
9.200	0.90	23.16	24.28	0.56	0.00	2,117.000	405.56
9.250	0.92	23.86	24.98	0.56	0.00	2,176.000	405.58
9.300	0.94	24.59	25.71	0.56	0.00	2,239.000	405.59
9.350	0.95	25.36	26.48	0.56	0.00	2,305.000	405.61
9.400	0.97	26.17	27.29	0.56	0.00	2,375.000	405.62
9.450	0.99	27.01	28.13	0.56	0.00	2,448.000	405.64
9.500	1.01	27.90	29.02	0.56	0.00	2,525.000	405.66
9.550	1.03	28.82	29.94	0.56	0.00	2,606.000	405.68
9.600	1.05	29.78	30.90	0.56	0.00	2,691.000	405.70
9.650	1.07	30.78	31.90	0.56	0.00	2,780.000	405.72
9.700	1.09	31.82	32.94	0.56	0.00	2,873.000	405.74
9.750	1.11	32.90	34.02	0.56	0.00	2,970.000	405.76
9.800	1.13	34.02	35.14	0.56	0.00	3,071.000	405.79
9.850	1.15	35.18	36.30	0.56	0.00	3,177.000	405.81
9.900	1.17	36.38	37.50	0.56	0.00	3,287.000	405.83
9.950	1.19	37.62	38.74	0.56	0.00	3,402.000	405.86
10.000	1.21	38.90	40.02	0.56	0.00	3,522.000	405.89
10.050	1.23	40.22	41.34	0.56	0.00	3,646.000	405.91
10.100	1.26	41.60	42.72	0.56	0.00	3,777.000	405.94
10.150	1.29	43.03	44.15	0.56	0.00	3,914.000	405.97
10.200	1.33	44.54	45.66	0.56	0.00	4,058.000	406.00
10.250	1.37	46.11	47.23	0.56	0.00	4,191.000	406.03
10.300	1.40	47.76	48.88	0.56	0.00	4,331.000	406.06
10.350	1.44	49.49	50.61	0.56	0.00	4,478.000	406.09
10.400	1.48	51.29	52.41	0.56	0.00	4,634.000	406.12
10.450	1.52	53.16	54.28	0.56	0.00	4,797.000	406.16
10.500	1.56	55.12	56.24	0.56	0.00	4,969.000	406.19
10.550	1.59	57.14	58.26	0.56	0.00	5,150.000	406.23
10.600	1.63	59.25	60.37	0.56	0.00	5,339.000	406.26
10.650	1.67	61.43	62.55	0.56	0.00	5,537.000	406.30
10.700	1.71	63.69	64.81	0.56	0.00	5,745.000	406.34
10.750	1.75	66.03	67.15	0.56	0.00	5,962.000	406.38
10.800	1.79	68.45	69.57	0.56	0.00	6,189.000	406.43
10.850	1.83	70.95	72.07	0.56	0.00	6,427.000	406.47
10.900	1.87	73.53	74.65	0.56	0.00	6,662.000	406.52
10.950	1.91	76.19	77.31	0.56	0.00	6,888.000	406.56

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
11.000	1.95	78.93	80.05	0.56	0.00	7,124.000	406.60
11.050	2.02	81.77	82.89	0.56	0.00	7,371.000	406.64
11.100	2.10	84.77	85.89	0.56	0.00	7,635.000	406.69
11.150	2.21	87.96	89.08	0.56	0.00	7,919.000	406.74
11.200	2.34	91.39	92.51	0.56	0.00	8,230.000	406.79
11.250	2.48	95.09	96.21	0.56	0.00	8,569.000	406.85
11.300	2.62	99.06	100.18	0.56	0.00	8,939.000	406.91
11.350	2.75	103.31	104.43	0.56	0.00	9,341.000	406.98
11.400	2.90	107.85	108.97	0.56	0.00	9,741.000	407.04
11.450	3.04	112.66	113.78	0.56	0.00	10,156.000	407.11
11.500	3.18	117.76	118.88	0.56	0.00	10,603.000	407.18
11.550	3.66	123.49	124.61	0.56	0.00	11,114.000	407.26
11.600	4.31	130.33	131.45	0.56	0.00	11,738.000	407.35
11.650	5.33	138.86	139.98	0.56	0.00	12,535.000	407.47
11.700	6.58	149.64	150.76	0.56	0.00	13,484.000	407.60
11.750	7.86	162.96	164.08	0.56	0.00	14,663.000	407.76
11.800	9.23	178.93	180.05	0.56	0.00	16,138.000	407.96
11.850	10.58	197.12	198.74	0.56	0.25	17,771.000	408.17
11.900	12.01	217.40	219.72	0.56	0.60	19,637.000	408.39
11.950	16.33	241.93	245.75	0.56	1.35	21,902.000	408.65
12.000	22.20	274.09	280.46	0.56	2.62	24,949.000	408.99
12.050	24.66	313.12	320.95	0.56	3.35	28,489.000	409.35
12.100	25.63	350.59	363.41	0.56	5.85	32,077.000	409.70
12.150	22.27	379.67	398.48	0.56	8.85	35,004.000	409.97
12.200	16.76	397.31	418.70	0.56	10.13	36,666.000	410.12
12.250	13.79	405.41	427.86	0.56	10.67	37,426.000	410.18
12.300	11.85	408.22	431.05	0.56	10.85	37,693.000	410.20
12.350	10.30	407.63	430.38	0.56	10.81	37,637.000	410.20
12.400	8.83	404.44	426.77	0.56	10.60	37,335.000	410.17
12.450	7.44	399.08	420.71	0.56	10.25	36,832.000	410.13
12.500	6.02	391.86	412.54	0.56	9.78	36,161.000	410.07
12.550	5.01	383.34	402.89	0.56	9.22	35,379.000	410.00
12.600	4.15	374.70	392.50	0.56	8.34	34,495.000	409.92
12.650	3.73	366.48	382.58	0.56	7.49	33,660.000	409.85
12.700	3.49	359.12	373.70	0.56	6.73	32,922.000	409.78
12.750	3.31	352.66	365.91	0.56	6.07	32,281.000	409.72
12.800	3.15	347.03	359.12	0.56	5.49	31,727.000	409.67
12.850	3.00	342.10	353.18	0.56	4.98	31,247.000	409.62
12.900	2.85	337.77	347.95	0.56	4.53	30,828.000	409.58
12.950	2.71	333.93	343.33	0.56	4.14	30,459.000	409.54
13.000	2.56	330.51	339.20	0.56	3.78	30,131.000	409.51
13.050	2.45	327.18	335.52	0.56	3.61	29,814.000	409.48
13.100	2.35	323.77	331.98	0.56	3.55	29,489.000	409.45
13.150	2.29	320.31	328.40	0.56	3.48	29,163.000	409.42

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
13.200	2.24	316.88	324.84	0.56	3.42	28,840.000	409.39
13.250	2.20	313.48	321.32	0.56	3.36	28,522.000	409.35
13.300	2.16	310.12	317.84	0.56	3.30	28,209.000	409.32
13.350	2.12	306.80	314.40	0.56	3.24	27,902.000	409.29
13.400	2.08	303.53	311.01	0.56	3.18	27,601.000	409.26
13.450	2.05	300.30	307.66	0.56	3.12	27,305.000	409.23
13.500	2.01	297.11	304.35	0.56	3.06	27,014.000	409.20
13.550	1.97	293.95	301.09	0.56	3.01	26,728.000	409.17
13.600	1.93	290.83	297.85	0.56	2.95	26,447.000	409.14
13.650	1.90	287.75	294.66	0.56	2.90	26,171.000	409.12
13.700	1.86	284.70	291.50	0.56	2.84	25,899.000	409.09
13.750	1.82	281.69	288.38	0.56	2.79	25,631.000	409.06
13.800	1.78	278.70	285.29	0.56	2.73	25,367.000	409.03
13.850	1.74	275.75	282.23	0.56	2.68	25,107.000	409.00
13.900	1.70	272.93	279.20	0.56	2.57	24,836.000	408.97
13.950	1.67	270.24	276.30	0.56	2.47	24,575.000	408.95
14.000	1.63	267.68	273.54	0.56	2.37	24,327.000	408.92
14.050	1.60	265.25	270.91	0.56	2.27	24,093.000	408.89
14.100	1.57	262.93	268.41	0.56	2.18	23,871.000	408.87
14.150	1.54	260.74	266.04	0.56	2.09	23,662.000	408.85
14.200	1.52	258.67	263.81	0.56	2.01	23,465.000	408.83
14.250	1.51	256.71	261.70	0.56	1.93	23,280.000	408.81
14.300	1.49	254.87	259.71	0.56	1.86	23,106.000	408.79
14.350	1.47	253.12	257.82	0.56	1.79	22,942.000	408.77
14.400	1.45	251.47	256.04	0.56	1.72	22,787.000	408.75
14.450	1.43	249.91	254.36	0.56	1.66	22,641.000	408.74
14.500	1.41	248.43	252.76	0.56	1.60	22,503.000	408.72
14.550	1.40	247.02	251.24	0.56	1.55	22,373.000	408.71
14.600	1.38	245.69	249.80	0.56	1.50	22,249.000	408.69
14.650	1.36	244.42	248.43	0.56	1.44	22,131.000	408.68
14.700	1.34	243.20	247.12	0.56	1.40	22,019.000	408.67
14.750	1.32	242.04	245.87	0.56	1.35	21,913.000	408.65
14.800	1.30	240.94	244.67	0.56	1.31	21,811.000	408.64
14.850	1.29	239.88	243.53	0.56	1.27	21,714.000	408.63
14.900	1.27	238.86	242.43	0.56	1.22	21,621.000	408.62
14.950	1.25	237.89	241.38	0.56	1.19	21,532.000	408.61
15.000	1.23	236.95	240.37	0.56	1.15	21,447.000	408.60
15.050	1.21	236.05	239.40	0.56	1.11	21,365.000	408.59
15.100	1.19	235.18	238.46	0.56	1.08	21,286.000	408.58
15.150	1.18	234.34	237.55	0.56	1.05	21,210.000	408.57
15.200	1.16	233.53	236.68	0.56	1.01	21,136.000	408.57
15.250	1.14	232.74	235.83	0.56	0.98	21,065.000	408.56
15.300	1.12	231.98	235.00	0.56	0.95	20,996.000	408.55
15.350	1.10	231.24	234.20	0.56	0.92	20,929.000	408.54

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
15.400	1.09	230.52	233.43	0.56	0.89	20,865.000	408.53
15.450	1.07	229.82	232.67	0.56	0.87	20,802.000	408.53
15.500	1.05	229.13	231.93	0.56	0.84	20,740.000	408.52
15.550	1.03	228.47	231.21	0.56	0.81	20,680.000	408.51
15.600	1.01	227.81	230.51	0.56	0.79	20,622.000	408.51
15.650	0.99	227.17	229.82	0.56	0.76	20,565.000	408.50
15.700	0.97	226.52	229.14	0.56	0.75	20,502.000	408.49
15.750	0.96	225.85	228.45	0.56	0.74	20,438.000	408.49
15.800	0.94	225.17	227.75	0.56	0.73	20,373.000	408.48
15.850	0.92	224.48	227.03	0.56	0.72	20,306.000	408.47
15.900	0.90	223.77	226.30	0.56	0.70	20,239.000	408.46
15.950	0.88	223.05	225.55	0.56	0.69	20,170.000	408.45
16.000	0.86	222.31	224.79	0.56	0.68	20,101.000	408.45
16.050	0.85	221.58	224.03	0.56	0.67	20,031.000	408.44
16.100	0.84	220.83	223.26	0.56	0.65	19,960.000	408.43
16.150	0.83	220.09	222.50	0.56	0.64	19,890.000	408.42
16.200	0.82	219.35	221.73	0.56	0.63	19,821.000	408.41
16.250	0.81	218.62	220.98	0.56	0.62	19,752.000	408.40
16.300	0.80	217.90	220.23	0.56	0.60	19,684.000	408.40
16.350	0.79	217.19	219.49	0.56	0.59	19,617.000	408.39
16.400	0.78	216.48	218.76	0.56	0.58	19,551.000	408.38
16.450	0.78	215.78	218.04	0.56	0.57	19,485.000	408.37
16.500	0.77	215.09	217.33	0.56	0.56	19,420.000	408.37
16.550	0.76	214.41	216.62	0.56	0.55	19,357.000	408.36
16.600	0.75	213.74	215.92	0.56	0.53	19,294.000	408.35
16.650	0.74	213.06	215.23	0.56	0.52	19,231.000	408.34
16.700	0.74	212.40	214.54	0.56	0.51	19,169.000	408.34
16.750	0.73	211.75	213.87	0.56	0.50	19,109.000	408.33
16.800	0.72	211.10	213.19	0.56	0.49	19,048.000	408.32
16.850	0.71	210.45	212.53	0.56	0.48	18,988.000	408.31
16.900	0.70	209.81	211.87	0.56	0.47	18,929.000	408.31
16.950	0.70	209.18	211.21	0.56	0.46	18,871.000	408.30
17.000	0.69	208.55	210.56	0.56	0.45	18,813.000	408.29
17.050	0.68	207.93	209.92	0.56	0.44	18,755.000	408.29
17.100	0.67	207.31	209.28	0.56	0.42	18,698.000	408.28
17.150	0.66	206.70	208.65	0.56	0.41	18,642.000	408.27
17.200	0.65	206.09	208.02	0.56	0.40	18,586.000	408.26
17.250	0.65	205.48	207.39	0.56	0.39	18,531.000	408.26
17.300	0.64	204.88	206.77	0.56	0.38	18,476.000	408.25
17.350	0.63	204.29	206.16	0.56	0.37	18,421.000	408.24
17.400	0.62	203.70	205.54	0.56	0.36	18,367.000	408.24
17.450	0.62	203.11	204.94	0.56	0.35	18,314.000	408.23
17.500	0.61	202.53	204.33	0.56	0.34	18,260.000	408.23
17.550	0.60	201.95	203.73	0.56	0.33	18,208.000	408.22

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
17.600	0.59	201.37	203.14	0.56	0.32	18,155.000	408.21
17.650	0.58	200.80	202.54	0.56	0.31	18,103.000	408.21
17.700	0.58	200.23	201.96	0.56	0.30	18,051.000	408.20
17.750	0.57	199.66	201.37	0.56	0.29	18,000.000	408.19
17.800	0.56	199.10	200.79	0.56	0.29	17,949.000	408.19
17.850	0.55	198.54	200.21	0.56	0.28	17,899.000	408.18
17.900	0.54	197.98	199.63	0.56	0.27	17,848.000	408.17
17.950	0.54	197.42	199.06	0.56	0.26	17,798.000	408.17
18.000	0.53	196.87	198.49	0.56	0.25	17,749.000	408.16
18.050	0.52	196.32	197.92	0.56	0.24	17,699.000	408.16
18.100	0.51	195.78	197.36	0.56	0.23	17,650.000	408.15
18.150	0.51	195.25	196.81	0.56	0.22	17,602.000	408.14
18.200	0.51	194.72	196.27	0.56	0.21	17,556.000	408.14
18.250	0.51	194.22	195.74	0.56	0.20	17,510.000	408.13
18.300	0.50	193.72	195.23	0.56	0.19	17,466.000	408.13
18.350	0.50	193.23	194.72	0.56	0.19	17,422.000	408.12
18.400	0.50	192.76	194.23	0.56	0.18	17,380.000	408.12
18.450	0.50	192.30	193.75	0.56	0.17	17,339.000	408.11
18.500	0.49	191.84	193.29	0.56	0.16	17,298.000	408.11
18.550	0.49	191.40	192.83	0.56	0.15	17,259.000	408.10
18.600	0.49	190.97	192.38	0.56	0.15	17,220.000	408.10
18.650	0.49	190.54	191.94	0.56	0.14	17,183.000	408.09
18.700	0.48	190.13	191.52	0.56	0.13	17,146.000	408.09
18.750	0.48	189.72	191.10	0.56	0.13	17,110.000	408.08
18.800	0.48	189.33	190.69	0.56	0.12	17,075.000	408.08
18.850	0.48	188.94	190.29	0.56	0.11	17,041.000	408.07
18.900	0.47	188.56	189.89	0.56	0.11	17,007.000	408.07
18.950	0.47	188.19	189.51	0.56	0.10	16,974.000	408.07
19.000	0.47	187.82	189.13	0.56	0.09	16,942.000	408.06
19.050	0.47	187.47	188.76	0.56	0.09	16,911.000	408.06
19.100	0.47	187.12	188.40	0.56	0.08	16,880.000	408.05
19.150	0.46	186.77	188.05	0.56	0.08	16,849.000	408.05
19.200	0.46	186.44	187.70	0.56	0.07	16,820.000	408.05
19.250	0.46	186.11	187.36	0.56	0.06	16,791.000	408.04
19.300	0.46	185.78	187.02	0.56	0.06	16,762.000	408.04
19.350	0.45	185.46	186.69	0.56	0.05	16,734.000	408.04
19.400	0.45	185.15	186.37	0.56	0.05	16,707.000	408.03
19.450	0.45	184.85	186.05	0.56	0.04	16,680.000	408.03
19.500	0.45	184.55	185.74	0.56	0.04	16,654.000	408.03
19.550	0.44	184.25	185.44	0.56	0.03	16,628.000	408.02
19.600	0.44	183.96	185.13	0.56	0.03	16,602.000	408.02
19.650	0.44	183.67	184.84	0.56	0.02	16,577.000	408.02
19.700	0.44	183.39	184.55	0.56	0.02	16,553.000	408.01
19.750	0.43	183.11	184.26	0.56	0.01	16,529.000	408.01

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
19.800	0.43	182.84	183.98	0.56	0.01	16,505.000	408.01
19.850	0.43	182.58	183.71	0.56	0.00	16,481.000	408.00
19.900	0.43	182.31	183.43	0.56	0.00	16,458.000	408.00
19.950	0.42	182.04	183.16	0.56	0.00	16,433.000	408.00
20.000	0.42	181.77	182.89	0.56	0.00	16,407.000	407.99
20.050	0.42	181.49	182.61	0.56	0.00	16,381.000	407.99
20.100	0.42	181.21	182.33	0.56	0.00	16,354.000	407.99
20.150	0.42	180.92	182.04	0.56	0.00	16,327.000	407.98
20.200	0.42	180.63	181.75	0.56	0.00	16,299.000	407.98
20.250	0.41	180.34	181.46	0.56	0.00	16,272.000	407.98
20.300	0.41	180.05	181.17	0.56	0.00	16,244.000	407.97
20.350	0.41	179.75	180.87	0.56	0.00	16,215.000	407.97
20.400	0.41	179.44	180.56	0.56	0.00	16,186.000	407.97
20.450	0.41	179.13	180.25	0.56	0.00	16,157.000	407.96
20.500	0.40	178.82	179.94	0.56	0.00	16,128.000	407.96
20.550	0.40	178.51	179.63	0.56	0.00	16,098.000	407.95
20.600	0.40	178.19	179.31	0.56	0.00	16,068.000	407.95
20.650	0.40	177.87	178.99	0.56	0.00	16,038.000	407.95
20.700	0.39	177.54	178.66	0.56	0.00	16,007.000	407.94
20.750	0.39	177.21	178.33	0.56	0.00	15,976.000	407.94
20.800	0.39	176.87	177.99	0.56	0.00	15,944.000	407.93
20.850	0.39	176.54	177.66	0.56	0.00	15,913.000	407.93
20.900	0.39	176.20	177.32	0.56	0.00	15,881.000	407.93
20.950	0.39	175.85	176.97	0.56	0.00	15,849.000	407.92
21.000	0.39	175.51	176.63	0.56	0.00	15,816.000	407.92
21.050	0.38	175.16	176.28	0.56	0.00	15,784.000	407.91
21.100	0.38	174.80	175.92	0.56	0.00	15,751.000	407.91
21.150	0.38	174.45	175.57	0.56	0.00	15,717.000	407.90
21.200	0.38	174.08	175.20	0.56	0.00	15,684.000	407.90
21.250	0.38	173.72	174.84	0.56	0.00	15,649.000	407.90
21.300	0.37	173.35	174.47	0.56	0.00	15,615.000	407.89
21.350	0.37	172.98	174.10	0.56	0.00	15,581.000	407.89
21.400	0.37	172.60	173.72	0.56	0.00	15,546.000	407.88
21.450	0.37	172.22	173.34	0.56	0.00	15,511.000	407.88
21.500	0.37	171.84	172.96	0.56	0.00	15,475.000	407.87
21.550	0.36	171.45	172.57	0.56	0.00	15,439.000	407.87
21.600	0.36	171.05	172.17	0.56	0.00	15,403.000	407.86
21.650	0.36	170.66	171.78	0.56	0.00	15,366.000	407.86
21.700	0.36	170.26	171.38	0.56	0.00	15,330.000	407.85
21.750	0.36	169.86	170.98	0.56	0.00	15,292.000	407.85
21.800	0.36	169.46	170.58	0.56	0.00	15,255.000	407.84
21.850	0.36	169.05	170.17	0.56	0.00	15,218.000	407.84
21.900	0.35	168.64	169.76	0.56	0.00	15,180.000	407.83
21.950	0.35	168.22	169.34	0.56	0.00	15,142.000	407.83

Subsection: Pond Routing Calculations (Total Out)
 Label: IB-1 (OUT)

Return Event: 100 years
 Storm Event: 100 YR

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft ³ /s)	2S/t - O (ft ³ /s)	2S/t + O (ft ³ /s)	Infiltration (ft ³ /s)	Flow (Outlet) (ft ³ /s)	Volume (ft ³)	Elevation (ft)
22.000	0.35	167.80	168.92	0.56	0.00	15,104.000	407.82
22.050	0.35	167.38	168.50	0.56	0.00	15,065.000	407.82
22.100	0.35	166.95	168.07	0.56	0.00	15,026.000	407.81
22.150	0.34	166.52	167.64	0.56	0.00	14,987.000	407.81
22.200	0.34	166.09	167.21	0.56	0.00	14,947.000	407.80
22.250	0.34	165.65	166.77	0.56	0.00	14,907.000	407.80
22.300	0.34	165.21	166.33	0.56	0.00	14,867.000	407.79
22.350	0.34	164.76	165.88	0.56	0.00	14,826.000	407.79
22.400	0.34	164.31	165.43	0.56	0.00	14,786.000	407.78
22.450	0.33	163.86	164.98	0.56	0.00	14,745.000	407.78
22.500	0.33	163.40	164.52	0.56	0.00	14,703.000	407.77
22.550	0.33	162.94	164.06	0.56	0.00	14,662.000	407.76
22.600	0.33	162.48	163.60	0.56	0.00	14,620.000	407.76
22.650	0.33	162.02	163.14	0.56	0.00	14,578.000	407.75
22.700	0.32	161.55	162.67	0.56	0.00	14,536.000	407.75
22.750	0.32	161.07	162.19	0.56	0.00	14,494.000	407.74
22.800	0.32	160.59	161.71	0.56	0.00	14,451.000	407.74
22.850	0.32	160.11	161.23	0.56	0.00	14,408.000	407.73
22.900	0.32	159.63	160.75	0.56	0.00	14,364.000	407.72
22.950	0.32	159.14	160.26	0.56	0.00	14,321.000	407.72
23.000	0.31	158.65	159.77	0.56	0.00	14,277.000	407.71
23.050	0.31	158.15	159.27	0.56	0.00	14,233.000	407.71
23.100	0.31	157.65	158.77	0.56	0.00	14,188.000	407.70
23.150	0.31	157.15	158.27	0.56	0.00	14,143.000	407.69
23.200	0.31	156.64	157.76	0.56	0.00	14,098.000	407.69
23.250	0.30	156.13	157.25	0.56	0.00	14,053.000	407.68
23.300	0.30	155.62	156.74	0.56	0.00	14,007.000	407.68
23.350	0.30	155.10	156.22	0.56	0.00	13,962.000	407.67
23.400	0.30	154.58	155.70	0.56	0.00	13,916.000	407.66
23.450	0.30	154.06	155.18	0.56	0.00	13,870.000	407.66
23.500	0.30	153.53	154.65	0.56	0.00	13,823.000	407.65
23.550	0.29	153.00	154.12	0.56	0.00	13,777.000	407.64
23.600	0.29	152.46	153.58	0.56	0.00	13,730.000	407.64
23.650	0.29	151.92	153.04	0.56	0.00	13,682.000	407.63
23.700	0.29	151.38	152.50	0.56	0.00	13,635.000	407.62
23.750	0.29	150.83	151.95	0.56	0.00	13,587.000	407.62
23.800	0.28	150.29	151.41	0.56	0.00	13,539.000	407.61
23.850	0.28	149.73	150.85	0.56	0.00	13,491.000	407.60
23.900	0.28	149.17	150.29	0.56	0.00	13,443.000	407.60
23.950	0.28	148.61	149.73	0.56	0.00	13,394.000	407.59
24.000	0.28	148.05	149.17	0.56	0.00	13,345.000	407.58

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APPENDIX C

***NYSDEC STORMWATER
SIZING CALCULATIONS***

**RUNOFF REDUCTION VOLUME, WATER QUALITY VOLUME AND
STREAM CHANNEL PROTECTION SIZING CALCULATIONS**

Volkswagen of Newburgh
Route 17K VW Dealership
Town of Newburgh, NY

JMC Project: **13021**

Drawing Reference: **DA-1, DA-2**

Computed by: **ND**

Checked by: **DL**

WATER QUALITY VOLUME WORKSHEET

JMC Project: **13021**
 Design Point: **1**

Volkswagen of Newburgh	Drainage Area:	PDA-1B, 1C
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Initial Water Quality Treatment Volume						
<i>DESCRIPTION</i>	Design Storm	Area	Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
<i>SYMBOL</i>	P	A	I	%I	R _v	WQ _v
<i>VALUE</i>	1.3	4.07	2.73	67.08	0.653685504	12,555
<i>UNITS</i>	In	Ac	Ac	%	CF	CF
<i>VALUE</i>	As per City of Watershed ($WQ_{v(R)} = 110\% WQ_v$)					13,810

Net Water Quality Treatment Volume = Adjusted WQ_v - Provided RR_v		
Initial Water Quality Treatment Volume	13,810	CF
Adjusted Water Quality Treatment Volume	13,810	CF
Provided Runoff Reduction Volume	757	CF
Net Water Quality Treatment Volume	13,053	CF

RUNOFF REDUCTION VOLUME WORKSHEET

JMC Project: **13021**

Design Point: **1**

Volkswagen of Newburgh	Drainage Area:	PDA-1B & 1C
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Total Water Quality Treatment Volume			
<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
Initial Water Quality Volume	WQ _v	13,810	CF
Adjusted Water Quality Volume	WQ _v	13,810	CF

Minimum Runoff Reduction Volume			
<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
Design Storm [90% Rainfall Event Number] or [1-yr Storm Depth]	P	1.3	In
Total Area of <i>new</i> Impervious Cover	Aic	2.96	Ac
Hydrologic Soil Group (HSG) Specific Reduction Factor	S	0.30	
Runoff Coefficient [0.05 + 0.009 x %I]	R _v	0.95	CF
Impervious Cover targeted for Runoff Reduction [S x Aic]	Ai	0.88	Ac
TOTAL VOLUME Required [RR_v = (P x R_v x Ai) / 12]	RR_v	3,949	CF

Runoff Reduction Techniques (Volume)			
<i>GREEN INFRASTRUCTURE PRACTICE / SMP</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
Vegetated Swale	RR _v	757	CF
Stormwater Surface Infiltration Basin	RR _v	13,053	CF
	RR _v		CF
	RR _v		CF
	RR _v		CF
	RR _v		CF
	RR _v		CF
	RR _v		CF
	RR _v		CF
	RR _v		CF
	RR _v		CF
TOTAL	RR_v	13,810	CF

Runoff Reduction	
<i>Is Total RR_v > Adjusted WQ_v?</i>	YES
<i>Is Total RR_v > Minimum RR_v?</i>	YES

VEGETATED SWALE WORKSHEET

JMC Project: **13021**

Design Point: **1**

Drainage Area: PDA-1C

Vegetated Swale

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	SYMBOL	VALUE	UNITS
Design Storm [90% Rainfall Event Number]	P	1.3	In
Impervious Area	I	1.12	Ac
Area	A	1.29	Ac
Percent Impervious	%I	86.39	%
Runoff Coefficient [0.05 + 0.009 x %I]	R _v	0.83	CF
TOTAL VOLUME Required [WQ _v = (P x R _v x A) / 12]	WQ _v	5,046	CF
TOTAL VOLUME Required (WQ_{v(R)}=110% WQ_v)	WQ _{v(R)}	5,551	CF

Design Parameters			
DESCRIPTION	SYMBOL	VALUE	UNITS
Water Quality Volume	WQ _v	5,551	CF
Water Quality Flow Rate	Q _{wq}	1.33	CFS
10 Year Storm Flow Rate	Q ₁₀	5.44	CFS

Channel Design			
DESCRIPTION	SYMBOL	VALUE	UNITS
<i>Given/Assumed Information</i>			
Channel Longitudinal Slope	S	4.00	%
Channel Bottom Width	W	6.00	Ft
Channel Depth	D	1.20	Ft
Channel Side Slope (Hori./Verti.)	z	3	
<i>Determine WQ_v Flow Depth & Velocity</i>			
WQ _v Flow Depth	Q _{wq} h	0.33	Ft
Manning's Coefficeint (varying with flow depth see fig L.1)	n	0.15	
Water Quality Flow Rate in Channel	Q	2.02	CFS
Velocity of Q $V=Q/(D*(z*D+W))$	V	0.18	FPS
<i>Determine Channel Length</i>			
WQ _v Minimum Detention Time	t	10	min.
Length of Swale Required $L=v*t*60$	l	105	Ft
Length of Swale Provided	L	225	Ft
<i>Determine Q₁₀ Flow Depth & Velocity</i>			
Peak Discharge Q ₁₀ (TR-55 10 year storm)	Q ₁₀	5.44	CFS
Peak Discharge Q ₁₀ Depth	Q ₁₀ h	0.52	Ft
Q ₁₀ Free Board Provided	f	0.68	Ft
Minimum Depth of Swale Required	h	1.02	Ft
Total Depth of Swale Provided	H	1.20	Ft
Velocity of Q ₁₀ $V_{10}=Q_{10}/(Q_{10}h*(z*Q_{10}h+W))$	V ₁₀	1.39	FPS

Runoff Reduction			
DESCRIPTION	SYMBOL	VALUE	UNITS
20% Runoff Reduction of Required WQ _v in HSG A and B	RR _v	1,009	CF
10% Runoff Reduction of Required WQ _v in HSG C and D	RR _v	505	CF
15% Runoff Reduction of Required WQ _v in HSG C Modified*	RR _v	757	CF
12% Runoff Reduction of Required WQ _v in HSG D Modified*	RR _v	606	CF
*Modifications must be in accordance with Soil Restoration Standards			

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Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
VS	VS-10 YR	0	21,976.00	12.100	5.44

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
O-1	VS-10 YR	0	21,976.00	12.100	5.44

Subsection: Time-Depth Curve
 Label: Time-Depth - 1

Return Event: 0 years
 Storm Event: 10 Y

Time-Depth Curve: 10 Y

Label	10 Y
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	0 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.4	0.4	0.4	0.4	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.5	0.5	0.5	0.5
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.6	0.6	0.6	0.6	0.6
8.000	0.6	0.6	0.7	0.7	0.7
8.500	0.7	0.7	0.7	0.8	0.8
9.000	0.8	0.8	0.8	0.9	0.9
9.500	0.9	0.9	1.0	1.0	1.0
10.000	1.0	1.1	1.1	1.1	1.2
10.500	1.2	1.2	1.3	1.3	1.3
11.000	1.4	1.4	1.5	1.5	1.6
11.500	1.6	1.7	1.9	2.1	2.3
12.000	2.7	3.2	3.4	3.6	3.8
12.500	3.9	3.9	4.0	4.0	4.1
13.000	4.1	4.2	4.2	4.2	4.3
13.500	4.3	4.3	4.4	4.4	4.4
14.000	4.5	4.5	4.5	4.5	4.6
14.500	4.6	4.6	4.6	4.7	4.7
15.000	4.7	4.7	4.7	4.8	4.8
15.500	4.8	4.8	4.8	4.8	4.9
16.000	4.9	4.9	4.9	4.9	4.9
16.500	4.9	5.0	5.0	5.0	5.0
17.000	5.0	5.0	5.0	5.0	5.0
17.500	5.1	5.1	5.1	5.1	5.1

Subsection: Time-Depth Curve
 Label: Time-Depth - 1

Return Event: 0 years
 Storm Event: 10 Y

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
18.000	5.1	5.1	5.1	5.1	5.1
18.500	5.1	5.2	5.2	5.2	5.2
19.000	5.2	5.2	5.2	5.2	5.2
19.500	5.2	5.2	5.2	5.2	5.3
20.000	5.3	5.3	5.3	5.3	5.3
20.500	5.3	5.3	5.3	5.3	5.3
21.000	5.3	5.3	5.3	5.4	5.4
21.500	5.4	5.4	5.4	5.4	5.4
22.000	5.4	5.4	5.4	5.4	5.4
22.500	5.4	5.4	5.4	5.4	5.4
23.000	5.5	5.5	5.5	5.5	5.5
23.500	5.5	5.5	5.5	5.5	5.5
24.000	5.5	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time of Concentration Calculations
Label: VS

Return Event: 0 years
Storm Event: 10 Y

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	59.00 ft
Manning's n	0.011
Slope	0.021 ft/ft
2 Year 24 Hour Depth	3.2 in
Average Velocity	1.25 ft/s
Segment Time of Concentration	0.013 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	108.00 ft
Is Paved?	True
Slope	0.028 ft/ft
Average Velocity	3.40 ft/s
Segment Time of Concentration	0.009 hours

Segment #3: TR-55 Channel Flow	
Flow Area	10.0 ft ²
Hydraulic Length	112.00 ft
Manning's n	0.030
Slope	0.040 ft/ft
Wetted Perimeter	14.25 ft
Average Velocity	7.84 ft/s
Segment Time of Concentration	0.004 hours

Segment #4: TR-55 Sheet Flow	
Hydraulic Length	41.00 ft
Manning's n	0.240
Slope	0.021 ft/ft
2 Year 24 Hour Depth	3.2 in
Average Velocity	0.10 ft/s
Segment Time of Concentration	0.114 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.140 hours

Subsection: Time of Concentration Calculations
Label: VS

Return Event: 0 years
Storm Event: 10 Y

==== SCS Channel Flow

$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{0.5})) / n}$
 $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Unpaved surface:
 $V = 16.1345 * (S_f^{0.5})$
Paved Surface:
 $V = 20.3282 * (S_f^{0.5})$
 $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

$T_c = \frac{(0.007 * ((n * L_f)^{0.8}))}{((P^{0.5}) * (S_f^{0.4}))}$
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Runoff CN-Area
Label: VS

Return Event: 0 years
Storm Event: 10 Y

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft ²)	C (%)	UC (%)	Adjusted CN
Porous Pavement-Soil C	86.000	8,992.000	0.0	0.0	86.000
Porous Pavement-Soil D	89.000	1,054.000	0.0	0.0	89.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	7,664.000	0.0	0.0	74.000
Impervious Areas	98.000	38,583.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	56,293.000	(N/A)	(N/A)	92.647

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: VS

Return Event: 0 years
 Storm Event: 10 Y

Storm Event	10 Y
Return Event	0 years
Duration	24.000 hours
Depth	5.5 in
Time of Concentration (Composite)	0.140 hours
Area (User Defined)	56,293.000 ft ²

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
2.850	0.00	0.00	0.00	0.00	0.00
3.100	0.00	0.00	0.01	0.01	0.01
3.350	0.01	0.01	0.01	0.01	0.01
3.600	0.01	0.01	0.01	0.01	0.01
3.850	0.01	0.02	0.02	0.02	0.02
4.100	0.02	0.02	0.02	0.02	0.02
4.350	0.02	0.02	0.02	0.02	0.02
4.600	0.03	0.03	0.03	0.03	0.03
4.850	0.03	0.03	0.03	0.03	0.03
5.100	0.03	0.03	0.03	0.04	0.04
5.350	0.04	0.04	0.04	0.04	0.04
5.600	0.04	0.04	0.04	0.04	0.04
5.850	0.05	0.05	0.05	0.05	0.05
6.100	0.05	0.05	0.05	0.05	0.05
6.350	0.06	0.06	0.06	0.06	0.06
6.600	0.06	0.07	0.07	0.07	0.07
6.850	0.07	0.07	0.07	0.08	0.08
7.100	0.08	0.08	0.08	0.08	0.09
7.350	0.09	0.09	0.09	0.09	0.10
7.600	0.10	0.10	0.10	0.10	0.10
7.850	0.11	0.11	0.11	0.11	0.11
8.100	0.12	0.12	0.12	0.13	0.13
8.350	0.13	0.14	0.14	0.14	0.15
8.600	0.15	0.16	0.16	0.16	0.17
8.850	0.17	0.17	0.18	0.18	0.19
9.100	0.19	0.19	0.20	0.20	0.21
9.350	0.21	0.22	0.22	0.22	0.23
9.600	0.23	0.24	0.24	0.25	0.25
9.850	0.25	0.26	0.26	0.27	0.27
10.100	0.28	0.28	0.29	0.30	0.31
10.350	0.32	0.32	0.33	0.34	0.35
10.600	0.36	0.37	0.38	0.38	0.39
10.850	0.40	0.41	0.42	0.43	0.44
11.100	0.46	0.48	0.50	0.53	0.56
11.350	0.59	0.62	0.65	0.69	0.75

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: VS

Return Event: 0 years
 Storm Event: 10 Y

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
11.600	0.88	1.05	1.30	1.56	1.86
11.850	2.15	2.47	3.05	4.18	5.06
12.100	5.44	5.26	4.31	3.45	2.89
12.350	2.50	2.14	1.83	1.51	1.25
12.600	1.03	0.88	0.80	0.75	0.71
12.850	0.68	0.64	0.61	0.58	0.55
13.100	0.53	0.51	0.50	0.49	0.48
13.350	0.47	0.46	0.45	0.45	0.44
13.600	0.43	0.42	0.41	0.40	0.40
13.850	0.39	0.38	0.37	0.36	0.35
14.100	0.35	0.34	0.34	0.33	0.33
14.350	0.32	0.32	0.32	0.31	0.31
14.600	0.30	0.30	0.30	0.29	0.29
14.850	0.28	0.28	0.28	0.27	0.27
15.100	0.26	0.26	0.26	0.25	0.25
15.350	0.24	0.24	0.24	0.23	0.23
15.600	0.22	0.22	0.22	0.21	0.21
15.850	0.20	0.20	0.20	0.19	0.19
16.100	0.19	0.18	0.18	0.18	0.18
16.350	0.17	0.17	0.17	0.17	0.17
16.600	0.17	0.16	0.16	0.16	0.16
16.850	0.16	0.16	0.15	0.15	0.15
17.100	0.15	0.15	0.14	0.14	0.14
17.350	0.14	0.14	0.14	0.13	0.13
17.600	0.13	0.13	0.13	0.13	0.12
17.850	0.12	0.12	0.12	0.12	0.11
18.100	0.11	0.11	0.11	0.11	0.11
18.350	0.11	0.11	0.11	0.11	0.11
18.600	0.11	0.11	0.11	0.11	0.11
18.850	0.10	0.10	0.10	0.10	0.10
19.100	0.10	0.10	0.10	0.10	0.10
19.350	0.10	0.10	0.10	0.10	0.10
19.600	0.10	0.10	0.10	0.10	0.09
19.850	0.09	0.09	0.09	0.09	0.09
20.100	0.09	0.09	0.09	0.09	0.09
20.350	0.09	0.09	0.09	0.09	0.09
20.600	0.09	0.09	0.09	0.09	0.09
20.850	0.09	0.09	0.08	0.08	0.08
21.100	0.08	0.08	0.08	0.08	0.08
21.350	0.08	0.08	0.08	0.08	0.08
21.600	0.08	0.08	0.08	0.08	0.08
21.850	0.08	0.08	0.08	0.08	0.08
22.100	0.08	0.08	0.08	0.07	0.07
22.350	0.07	0.07	0.07	0.07	0.07

Subsection: Unit Hydrograph (Hydrograph Table)
Label: VS

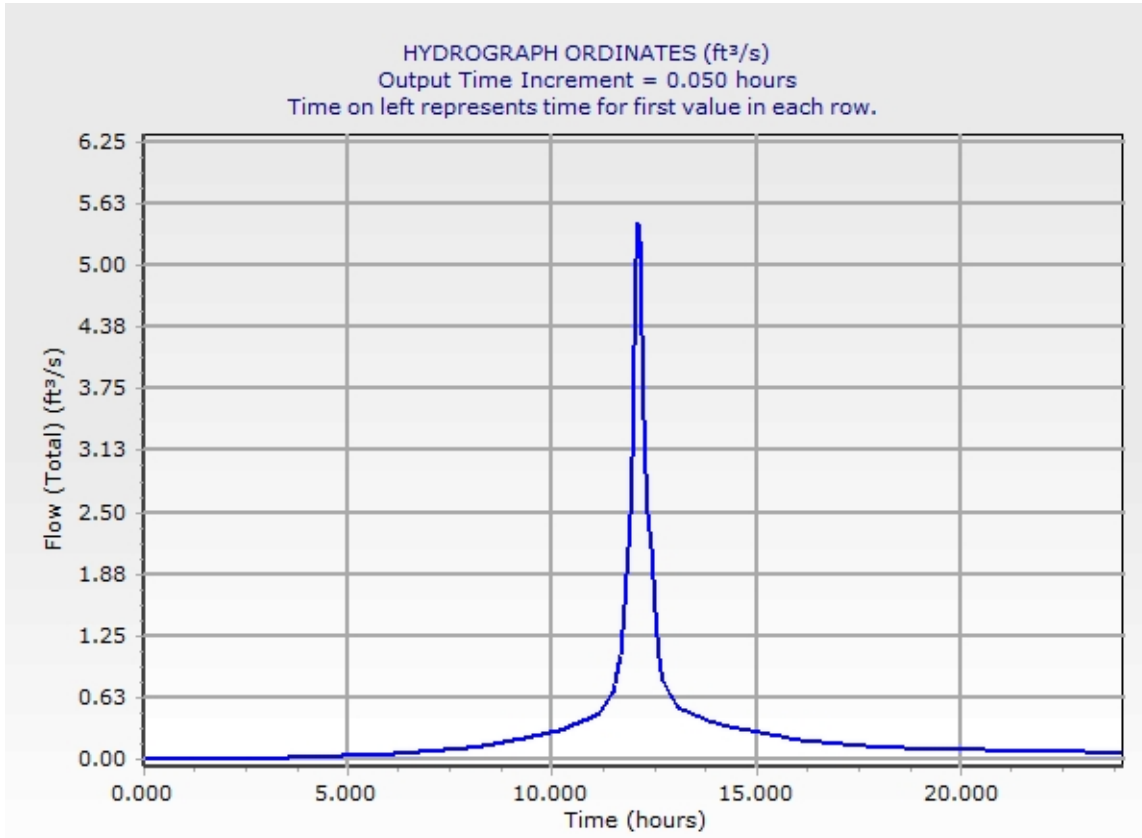
Return Event: 0 years
Storm Event: 10 Y

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)	Flow (ft ³ /s)
22.600	0.07	0.07	0.07	0.07	0.07
22.850	0.07	0.07	0.07	0.07	0.07
23.100	0.07	0.07	0.07	0.07	0.07
23.350	0.07	0.07	0.07	0.06	0.06
23.600	0.06	0.06	0.06	0.06	0.06
23.850	0.06	0.06	0.06	0.06	(N/A)

Subsection: Unit Hydrograph (Hydrograph Table)
Label: VS

Return Event: 0 years
Storm Event: 10 Y



WATER QUALITY FLOW RATE WORKSHEET

JMC Project: **13021**

Design Point: **1**

Water Quality Flow Rate for Vegetated Swale

Rainfall Distribution Type: **III**

		A	B	C
Coefficients for the equation unit peak	C_0	-1.774	0.3301	2.4577
$[R = I_a / P]$	C_1	1.8622	-0.7397	-0.4627
$[C_i = A \times R^2 + B \times R + C]$	C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	SYMBOL	VALUE	UNITS
Design Storm [90% Rainfall Event Number]	P	1.3	In
Impervious Area	I	1.12	Ac
Area	A	1.29	Ac
Percent Impervious	%I	86.39	%
Runoff Coefficient $[0.05 + 0.009 \times \%I]$	R_v	0.83	CF
TOTAL VOLUME Required $[WQ_v = (P \times R_v \times A) / 12]$	WQ_v	5,046	CF
TOTAL VOLUME Required $(WQ_{v(R)} = 110\% WQ_v)$	$WQ_{v(R)}$	5,551	CF

Water Quality Peak Flow Calculation			
DESCRIPTION	SYMBOL	VALUE	UNITS
Water Quality Volume	WQ_v	5,551	CF
Design Storm [90% Rainfall Event Number] or [1-yr Storm Depth]	P	1.3	In
Time of Concentration	t_c	0.1400	Hr
Runoff Volume $[Q = WQ_v / (A \times 3630)]$	Q	1.18	In
Curve Number $[CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25 QP)^{1/2})]$	CN	98.97	
Curve Number	CN	98	
Initial Abstraction $[I_a = 200 / CN - 2]$	I_a	0.04	In
Ratio $[R = I_a / P]$	R	0.03	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
$C_1 = A \times R^2 + B \times R + C$	C_1	-0.48	
$C_2 = A \times R^2 + B \times R + C$	C_2	-0.19	
Unit Peak Discharge	q_u	554.58	cfs/mi ² /in
Peak Discharge $[Q_p = q_u \times A \times Q / 640]$	Q_p	1.33	cfs

TRAPEZOIDAL CHANNEL

LONGITUDINAL SLOPE

BOTTOM WIDTH

increment 0.05 MANNING'S COEF. n=

inches SIDE SLOPE (Hori./Verti.)

h= 4 Flow Depth TOP

PDA-VS	
S(%)	4.00
B(ft)=	6.00
n=	0.15
Z=	3.00

Flow Depth	WIDTH	AREA	Q
in.	ft.	sf	cfs
4.00	8.00	2.33	2.02
4.05	8.03	2.37	2.06
4.10	8.05	2.40	2.11
4.15	8.08	2.43	2.15
4.20	8.10	2.47	2.20
4.25	8.13	2.50	2.24
4.30	8.15	2.54	2.29
4.35	8.18	2.57	2.34
4.40	8.20	2.60	2.38
4.45	8.23	2.64	2.43
4.50	8.25	2.67	2.48
4.55	8.28	2.71	2.53
4.60	8.30	2.74	2.58
4.65	8.33	2.78	2.62
4.70	8.35	2.81	2.67
4.75	8.38	2.85	2.72

TRAPEZOIDAL CHANNEL

LONGITUDINAL SLOPE

BOTTOM WIDTH

increment 0.05 MANNING'S COEF. n=

inches SIDE SLOPE (Hori./Verti.)

h= 5 Flow Depth TOP

PDA-VS	
S(%)	4.00
B(ft)=	6.00
n=	0.12
Z=	3.00

Flow Depth	WIDTH	AREA	Q
in.	ft	sf	cfs
5.00	0.417	8.50	3.02
5.05	0.421	8.53	3.06
5.10	0.425	8.55	3.09
5.15	0.429	8.58	3.13
5.20	0.433	8.60	3.16
5.25	0.438	8.63	3.20
5.30	0.442	8.65	3.24
5.35	0.446	8.68	3.27
5.40	0.450	8.70	3.31
5.45	0.454	8.73	3.34
5.50	0.458	8.75	3.38
5.55	0.463	8.78	3.42
5.60	0.467	8.80	3.45
5.65	0.471	8.83	3.49
5.70	0.475	8.85	3.53
5.75	0.479	8.88	3.56
5.80	0.483	8.90	3.60
5.85	0.488	8.93	3.64
5.90	0.492	8.95	3.68
5.95	0.496	8.98	3.71
6.00	0.500	9.00	3.75
6.05	0.504	9.03	3.79
6.10	0.508	9.05	3.83
6.15	0.513	9.08	3.86
6.20	0.517	9.10	3.90
6.25	0.521	9.13	3.94
6.30	0.525	9.15	3.98
6.35	0.529	9.18	4.02
6.40	0.533	9.20	4.05

INFILTRATION WORKSHEET

JMC Project: **13021**

Design Point: **1**

Drainage Area: **PDA-1B**

Stormwater Surface Infiltration Basin

Water Quality Volume Required

<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
TOTAL VOLUME Required	WQ _v	13,053	In

Water Quality Volume Provided

<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
Water Quality Volume Provided within Infiltration System	WQ _v (p)	14,504	CF

Runoff Reduction

<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
90% of WQ _v Infiltrated	RR _v	13,053	CF

PROPRIETARY PRACTICE WORKSHEET

JMC Project: **13021**
 Design Point: **1**
 Drainage Area: **NORTH**

Continuous Deflective Separation Unit

Rainfall Distribution Type: **III**

		A	B	C
Coefficients for the equation unit peak	C₀	-1.774	0.3301	2.4577
[R = I _a / P]	C₁	1.8622	-0.7397	-0.4627
[C _i = A x R ² + B x R + C]	C₂	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice			
<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
Design Storm [90% Rainfall Event Number]	P	1.3	In
Impervious Area	I	0.73	Ac
Area	A	0.95	Ac
Percent Impervious	%I	76.94	%
Runoff Coefficient [0.05 + 0.009 x %I]	R _V	0.74	CF
TOTAL VOLUME Required [WQ _V = (P x R _V x A) / 12]	WQ _V	3,314	CF

Water Quality Peak Flow Calculation			
<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
Water Quality Volume Required (WQ _R = 110% WQ _V)	WQ _R	3,645	CF
Design Storm [90% Rainfall Event Number] or [1-yr Storm Depth]	P	1.3	In
Time of Concentration	t _c	0.0833	Hr
Runoff Volume [Q = WQ _V / (A x 3630)]	Q	1.06	In
Curve Number [CN = 1000 / (10 + 5P + 10Q - 10 x (Q ² + 1.25 QP) ^{1/2})]	CN	97.77	
Curve Number	CN	98	
Initial Abstraction [I _a = 200 / CN - 2]	I _a	0.05	In
Ratio [R = I _a / P]	R	0.04	
C ₀ = A x R ² + B x R + C	C ₀	2.47	
C ₁ = A x R ² + B x R + C	C ₁	-0.49	
C ₂ = A x R ² + B x R + C	C ₂	-0.19	
Unit Peak Discharge	q _u	597.20	cfs/mi ² /in
Peak Discharge [Q _p = q _u x A x Q / 640]	Q _p	0.94	cfs

Proposed Device			
<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
Water Quality Peak Flow Provided	Q _p	1.1	cfs
Water Quality Volume Provided [WQ _V = 640 x 3600 x Q _p / q _u]	WQ _V	4,244	CF
Model Designation		CDS 2020	
Quantity		1	

PROPRIETARY PRACTICE WORKSHEET

JMC Project: **13021**
 Design Point: **1**
 Drainage Area: **SOUTH**

Continuous Deflective Separation Unit

Rainfall Distribution Type: **III**

		A	B	C
Coefficients for the equation unit peak	C_0	-1.774	0.3301	2.4577
$[R = I_a / P]$	C_1	1.8622	-0.7397	-0.4627
$[C_i = A \times R^2 + B \times R + C]$	C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	SYMBOL	VALUE	UNITS
Design Storm [90% Rainfall Event Number]	P	1.3	In
Impervious Area	I	0.83	Ac
Area	A	0.88	Ac
Percent Impervious	%I	94.72	%
Runoff Coefficient $[0.05 + 0.009 \times \%I]$	R_v	0.90	CF
TOTAL VOLUME Required $[WQ_v = (P \times R_v \times A) / 12]$	WQ_v	3,740	CF

Water Quality Peak Flow Calculation			
DESCRIPTION	SYMBOL	VALUE	UNITS
Water Quality Volume $(WQ_R = 110\% WQ_v)$	WQ_R	4,114	CF
Design Storm [90% Rainfall Event Number] or [1-yr Storm Depth]	P	1.3	In
Time of Concentration	t_c	0.0833	Hr
Runoff Volume $[Q = WQ_v / (A \times 3630)]$	Q	1.29	In
Curve Number $[CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25 QP)^{1/2})]$	CN	99.92	
Curve Number	CN	98	
Initial Abstraction $[I_a = 200 / CN - 2]$	I_a	0.04	In
Ratio $[R = I_a / P]$	R	0.03	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
$C_1 = A \times R^2 + B \times R + C$	C_1	-0.48	
$C_2 = A \times R^2 + B \times R + C$	C_2	-0.19	
Unit Peak Discharge	q_u	591.53	cfs/mi ² /in
Peak Discharge $[Q_p = q_u \times A \times Q / 640]$	Q_p	1.05	cfs

Proposed Device			
DESCRIPTION	SYMBOL	VALUE	UNITS
Water Quality Peak Flow Provided	Q_p	1.1	cfs
Water Quality Volume Provided $[WQ_v = 640 \times 3600 \times Q_p / q_u]$	WQ_v	4,284	CF
Model Designation		CDS 2020	
Quantity		1	

PROPRIETARY PRACTICE WORKSHEET

JMC Project: **13021**
 Design Point: **1**
 Drainage Area: **PDA-1A**

Continuous Deflective Separation Unit

Rainfall Distribution Type: **III**

		A	B	C
Coefficients for the equation unit peak	C₀	-1.774	0.3301	2.4577
[R = I _a / P]	C₁	1.8622	-0.7397	-0.4627
[C _i = A x R ² + B x R + C]	C₂	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice			
<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
Design Storm [90% Rainfall Event Number]	P	1.3	In
Impervious Area	I	0.01	Ac
Area	A	0.41	Ac
Percent Impervious	%I	3.54	%
Runoff Coefficient [0.05 + 0.009 x %I]	R _V	0.08	CF
TOTAL VOLUME Required [WQ_V = (P x R_V x A) / 12]	WQ_V	157	CF

Water Quality Peak Flow Calculation			
<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
Water Quality Volume (WQ _R = 110% WQ _V)	WQ _R	172	CF
Design Storm [90% Rainfall Event Number] or [1-yr Storm Depth]	P	1.3	In
Time of Concentration	t _c	0.1010	Hr
Runoff Volume [Q = WQ _V / (A x 3630)]	Q	0.12	In
Curve Number [CN = 1000 / (10 + 5P + 10Q - 10 x (Q ² + 1.25 QP) ^{1/2})]	CN	76.01	
Curve Number	CN	76	
Initial Abstraction [I _a = 200 / CN - 2]	I _a	0.63	In
Ratio [R = I _a / P]	R	0.49	
C ₀ = A x R ² + B x R + C	C ₀	2.20	
C ₁ = A x R ² + B x R + C	C ₁	-0.38	
C ₂ = A x R ² + B x R + C	C ₂	-0.10	
Unit Peak Discharge	q _u	304.81	cfs/mi ² /in
Peak Discharge [Q_p = q_u x A x Q / 640]	Q_p	0.02	cfs

Proposed Device			
<i>DESCRIPTION</i>	<i>SYMBOL</i>	<i>VALUE</i>	<i>UNITS</i>
Water Quality Peak Flow Provided	Q_p	0.7	cfs
Water Quality Volume Provided [WQ_V = 640 x 3600 x Q_p / q_u]	WQ_V	5,291	CF
Model Designation		CDS 2015-4	
Quantity		1	

STREAM CHANNEL PROTECTION VOLUME C_{pv}

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Unified Stormwater Sizing Criteria (See Section 4.4 & Appendix B.2)

RAINFALL DISTRIBUTION TYPE		III	A	B	C
$(R=I_a/P)$	$C_i=A*R^2+B*R+C$				
Coefficients for the equation unit peak		C_0	-1.774	0.3301	2.4577
Coefficients for the equation unit peak		C_1	1.8622	-0.7397	-0.4627
Coefficients for the equation unit peak		C_2	-0.0648	0.2276	-0.1932

DESIGN PARAMETERS					
	SYMBOL	UNITS	PDA-1B		
TOTAL DEVELOPED AREA	A	acres	4.07		
RAINFALL EVENT (1-year recurrence, 24-hr. duration)	P₁	inches	1.30		
RUNOFF CURVE NUMBER (proposed)	CN		91.00		
TIME OF CONCENTRATION (Use TR-55 equations)	T_c	hours	0.08		
DESIGN CALCULATIONS					
CHANNEL PROTECTION VOLUME, (C_{pv}) ((see Section 4.4 and Appendix B)					
INITIAL ABSTRACTION $I_a=(200/CN)-2$	I_a	inches	0.198		
RATIO $R=I_a/P_1$	R		0.15		
$C_0 = A*R^2 + B*R + C$	C₀		2.47		
$C_1 = A*R^2 + B*R + C$	C₁		-0.53		
$C_2 = A*R^2 + B*R + C$	C₂		-0.16		
UNIT PEAK DIS. $q_u=10*(C_0+C_1*\text{Log}(T_c)+C_2*(\text{log}(T_c))^2)$	q_u	cfs/mi ² /in	715.71		
RUNOFF (TR-55) $Q=((P_1-I_a)^2)/(P_1+4*I_a)$	Q	inches	0.58		
PEAK DISCHARGE $Q_{p1}=q_u*A*Q$ (TR-5 1 year storm)	Q_{p1}	cfs	2.64		
RATIO of out/in flow $(q_o/q_i)=14.121*q_u^{(-0.9703)}$	(q_o/q_i)		0.02		
$(V_s/V_r)=0.682-1.43*(q_o/q_i)+1.64*(q_o/q_i)^2-0.804*(q_o/q_i)^3$	(V_s/V_r)		0.65		
HYG RUNOFF VOLUME $V_r=Q*A*3630$ (TR-55 1year)	V_r	cu. ft.	8,583		
		acres-ft	0.20		
REQUIRED STORAGE VOLUME $V_s=(V_s/V_r)*V_r$ (Cpv)	V_s	cu. ft.	5,567		
		acres-ft	0.13		
Provided Runoff Reduction Volume	RRv	CF	13,810.39		

APPENDIX D

SOIL TESTING DATA

DESIGN DATA SHEET - STORMWATER INFILTRATION SYSTEM

JOB NO. 13021

Owner Route 17 Cars, LLC Address 1143 Dutchess Turnpike, Poughkeepsie, NY 12603

Located at (Street) Route 17K Sec. 95 Block 1 Lot 53
(Indicate nearest cross st.)

Municipality Town of Newburgh Watershed N/A

SOIL INFILTRATION TEST DATA

Presoak Date: 10/16/2013 Run Date: 10/17/2013

Hole #	CLOCK TIME				INFILTRATION			
	Run No.	Start	Stop	Elapse Time Min.	Depth From Grd	To surface water	Water Level Drop In Inches	Soil Rate In/Hr Drop
IT-1	1	8:22 AM	9:22 AM	60			9	9.00
	2	9:30 AM	10:30 AM	60			8.5	8.50
	3	10:32 AM	11:32 AM	60			8	8.00
	4	11:44 AM	12:44 PM	60			7	7.00
IT-2	1	8:26 AM	9:26 AM	60			15	15.00
	2	9:27 AM	10:27 AM	60			14	14.00
	3	10:37 AM	11:37 AM	60			14	14.00
	4	11:40 AM	12:40 PM	60			13	13.00

Notes: _____ Perc test done by: George Vega

- 1) Tests to be repeated at same depth until approximately equal soil rates are obtained at each infiltration test hole. All data to be submitted for review.
- 2) Depth measurements to be made from top of hole. DO NOT REPORT INCREMENTS OF LESS THAN ONE INCH.

DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

DEPTH	HOLE NO. TP-1	HOLE NO. TP-2	HOLE NO. TP-3	HOLE NO. TP-4
G.L.	0-4" Pav't	0-6" Topsoil	0-6" Topsoil	0-6" Topsoil
6"				
12"				
18"				
24"	4"-48" Gray Mottled Clay	6"-42" Light Brown Silt Loam w/ Gravels & Boulders to 24" Dia.		
30"				
36"				
42"				
48"			6"-168" Brown	6"-120"
54"	4"-108" Brown Silty Loam w/ Clay & Gravels	42"-132" Brown Silt Loam w/ Some Clay	Silty Loam w/ Gravels & Boulders 24" Dia.	Light Brown Silt Loam
60"				
66"		Pockets of Mottling at 5'		
72"				
78"	Trace Mottling & Seepage at 7'			
84"				
108"	Bedrock at 9' w/ some			
120"				Bedrock at 10'
132"				
168"		No bedrock No GW Seepage at 11'	No bedrock Some seepage	

WAS GROUNDWATER ENCOUNTERED? _____
 INDICATE LEVEL AT WHICH GROUND WATER IS ENCOUNTERED _____
 INDICATE LEVEL AT WHICH WATER RISES AFTER BEING ENCOUNTERED _____
 DEEP TESTS MADE BY George Vega DATE OF DEEP TESTS 10/16/2013

DESIGN

Soil Rate Used: 7 inches/hr

Name Robert Roth, PE, CPESC Signature _____

Address John Meyer Consulting, PC SEAL
120 Bedford Road
Armonk, NY 10504

APPENDIX E

***STORMWATER PRACTICE
CONSTRUCTION INSPECTION
CHECKLIST
AND
OPERATION, MAINTENANCE AND
MANAGEMENT INSPECTION
CHECKLIST***

Infiltration Basin Construction Inspection Checklist

Project:
 Location:
 Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Runoff diverted		
Soil permeability tested		
Groundwater / bedrock depth		
2. Excavation		
Size and location		
Side slopes stable		
Excavation does not compact subsoils		
3. Embankment		
Barrel		
Anti-seep collar or Filter diaphragm		
Fill material		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
4. Final Excavation		
Drainage area stabilized		
Sediment removed from facility		
Basin floor tilled		
Facility stabilized		
5. Final Inspection		
Pretreatment facility in place		
Inlets / outlets		
Contributing watershed stabilized before flow is routed to the facility		

Comments:

Actions to be Taken:

Bioretention Construction Inspection Checklist

Project:
 Location:
 Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility area cleared		
If designed as exfilter, soil testing for permeability		
Facility location staked out		
2. Excavation		
Size and location		
Lateral slopes completely level		
If designed as exfilter, ensure that excavation does not compact susoils.		
Longitudinal slopes within design range		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
3. Structural Components		
Stone diaphragm installed correctly		
Outlets installed correctly		
Underdrain		
Pretreatment devices installed		
Soil bed composition and texture		
4. Vegetation		
Complies with planting specs		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
5. Final Inspection		
Dimensions		
Proper stone diaphragm		
Proper outlet		
Soil/ filter bed permeability testing		
Effective stand of vegetation and stabilization		
Construction generated sediments removed		
Contributing watershed stabilized before flow is diverted to the practice		

Stormwater Pond/Wetland Operation, Maintenance and Management Inspection Checklist

Project _____
 Location: _____
 Site Status: _____

 Date: _____
 Time: _____

 Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Embankment and emergency spillway (Annual, After Major Storms)		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6. Pond, toe & chimney drains clear and functioning		
7. Seeps/leaks on downstream face		
8. Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam "As-Built"		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		
2. Riser and principal spillway (Annual)		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____		
1. Low flow orifice obstructed		
2. Low flow trash rack. a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
3. Permanent Pool (Wet Ponds) (monthly)		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
4. Sediment Forebays		
1.Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
5. Dry Pond Areas		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
6. Condition of Outfalls (Annual , After Major Storms)		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4.Endwalls / Headwalls		
5. Other (specify)		
7. Other (Monthly)		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Complaints from residents		
3. Aesthetics a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
8. Wetland Vegetation (Annual)		
1. Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		
2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants "choked" with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

Comments:

Actions to be Taken:

APPENDIX F

***CDS UNITS OPERATION AND
MAINTENANCE MANUAL***

CDS Guide

Operation, Design, Performance and Maintenance



CDS®

Using patented continuous deflective separation technology, the CDS system screens, separates and traps debris, sediment, and oil and grease from stormwater runoff. The indirect screening capability of the system allows for 100% removal of floatables and neutrally buoyant material without blinding. Flow and screening controls physically separate captured solids, and minimize the re-suspension and release of previously trapped pollutants. Inline units can treat up to 6 cfs, and internally bypass flows in excess of 50 cfs. Available precast or cast-in-place, offline units can treat flows from 1 to 300 cfs. The pollutant removal capacity of the CDS system has been proven in lab and field testing.

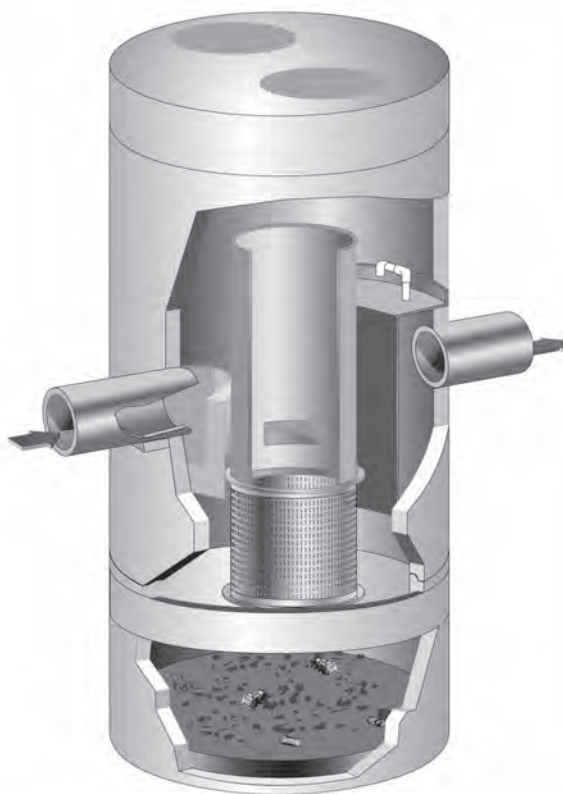
Operation Overview

Stormwater enters the diversion chamber where the diversion weir guides the flow into the unit's separation chamber and pollutants are removed from the flow. All flows up to the system's treatment design capacity enter the separation chamber and are treated.

Swirl concentration and screen deflection force floatables and solids to the center of the separation chamber where 100% of floatables and neutrally buoyant debris larger than the screen apertures are trapped.

Stormwater then moves through the separation screen, under the oil baffle and exits the system. The separation screen remains clog free due to continuous deflection.

During the flow events exceeding the design capacity, the diversion weir bypasses excessive flows around the separation chamber, so captured pollutants are retained in the separation cylinder.



Design Basics

There are three primary methods of sizing a CDS system. The Water Quality Flow Rate Method determines which model size provides the desired removal efficiency at a given flow rate for a defined particle size. The Rational Rainfall Method™ and Probabalistic Method are used when a specific removal efficiency of the net annual sediment load is required.

Typically in the Unites States, CDS systems are designed to achieve an 80% annual solids load reduction based on lab generated performance curves for a gradation with an average particle size (d50) of 125-microns (μm). For some regulatory environments, CDS systems can also be designed to achieve an 80% annual solids load reduction based on an average particle size (d50) of 75-microns (μm).

Water Quality Flow Rate Method

In many cases, regulations require that a specific flow rate, often referred to as the water quality design flow (WQQ), be treated. This WQQ represents the peak flow rate from either an event with a specific recurrence interval (i.e. the six-month storm) or a water quality depth (i.e. 1/2-inch of rainfall).

The CDS is designed to treat all flows up to the WQQ. At influent rates higher than the WQQ, the diversion weir will direct most flow exceeding the treatment flow rate around the separation chamber. This allows removal efficiency to remain relatively constant in the separation chamber and reduces the risk of washout during bypass flows regardless of influent flow rates.

Treatment flow rates are defined as the rate at which the CDS will remove a specific gradation of sediment at a specific removal efficiency. Therefore they are variable based on the gradation and removal efficiency specified by the design engineer.

Rational Rainfall Method™

Differences in local climate, topography and scale make every site hydraulically unique. It is important to take these factors into consideration when estimating the long-term performance of any stormwater treatment system. The Rational Rainfall Method combines site-specific information with laboratory generated performance data, and local historical precipitation records to estimate removal efficiencies as accurately as possible.

Short duration rain gauge records from across the United States and Canada were analyzed to determine the percent of the total annual rainfall that fell at a range of intensities. US stations' depths were totaled every 15 minutes, or hourly, and recorded in 0.01-inch increments. Depths were recorded hourly with 1-mm resolution at Canadian stations. One trend was consistent at all sites; the vast majority of precipitation fell at low intensities and high intensity storms contributed relatively little to the total annual depth.

These intensities, along with the total drainage area and runoff coefficient for each specific site, are translated into flow rates using the Rational Rainfall Method. Since most sites are relatively small and highly impervious, the Rational Rainfall Method is appropriate. Based on the runoff flow rates calculated for each intensity, operating rates within a proposed CDS system are determined. Performance efficiency curve determined from full scale laboratory tests on defined sediment PSDs is applied to

calculate solids removal efficiency. The relative removal efficiency at each operating rate is added to produce a net annual pollutant removal efficiency estimate.

Probabilistic Rational Method

The Probabilistic Rational Method is a sizing program CONTECH developed to estimate a net annual sediment load reduction for a particular CDS model based on site size, site runoff coefficient, regional rainfall intensity distribution, and anticipated pollutant characteristics.

The Probabilistic rational method is an extension of the rational method used to estimate peak discharge rates generated by storm events of varying statistical return frequencies (i.e.: 2-year storm event). Under this method, an adjustment factor is used to adjust the runoff coefficient estimated for the 10-year event, correlating a known hydrologic parameter with the target storm event. The rainfall intensities vary depending on the return frequency of the storm event under consideration. In general, these two frequency dependent parameters increase as the return frequency increases while the drainage area remains constant.

These intensities, along with the total drainage area and runoff coefficient for each specific site, are translated into flow rates using the Rational Method. Since most sites are relatively small and highly impervious, the Rational Method is appropriate. Based on the runoff flow rates calculated for each intensity, operating rates within a proposed CDS are determined. Performance efficiency curve on defined sediment PSDs is applied to calculate solids removal efficiency. The relative removal efficiency at each operating rate is added to produce a net annual pollutant removal efficiency estimate.

Treatment Flow Rate

The inlet throat area is sized to ensure that the WQQ passes through the separation chamber at a water surface elevation equal to the crest of the diversion weir. The diversion weir bypasses excessive flows around the separation chamber, thus helping to prevent re-suspension or re-entrainment of previously captured particles.

Hydraulic Capacity

CDS hydraulic capacity is determined by the length and height of the diversion weir and by the maximum allowable head in the system. Typical configurations allow hydraulic capacities of up to ten times the treatment flow rate. As needed, the crest of the diversion weir may be lowered and the inlet throat may be widened to increase the capacity of the system at a given water surface elevation. The unit is designed to meet project specific hydraulics.

Performance

Full-Scale Laboratory Test Results

A full-scale CDS unit (Model CDS2020-5B) was tested at the facility of University of Florida, Gainesville, FL. This full-scale CDS unit was evaluated under controlled laboratory conditions of pumped influent and the controlled addition of sediment.

Two different gradations of silica sand material (UF Sediment & OK-110) were used in the CDS performance evaluation. The particle size distributions (PSD) of the test materials were

analyzed using standard method "Gradation ASTM D-422 with Hydrometer" by a certified laboratory. UF Sediment is a mixture of three different U.S. Silica Sand products referred as: "Sil-Co-Sil 106", "#1 DRY" and "20/40 Oil Frac". Particle size distribution analysis shows that the UF Sediment has a very fine gradation ($d_{50} = 20$ to $30 \mu\text{m}$) covering a wide size range (uniform coefficient C_u averaged at 10.6). In comparison with the hypothetical TSS gradation specified in the NJDEP (New Jersey Department of Environmental Protection) and NJCAT (New Jersey Corporation for Advanced Technology) protocol for lab testing, the UF Sediment covers a similar range of particle size but with a finer d_{50} (d_{50} for NJDEP is approximately $50 \mu\text{m}$) (NJDEP, 2003). The OK-110 silica sand is a commercial product of U.S. Silica Sand. The particle size distribution analysis of this material, also included in Figure 1, shows that 99.9% of the OK-110 sand is finer than 250 microns, with a mean particle size (d_{50}) of 106 microns. The PSDs for the test material are shown in Figure 1.

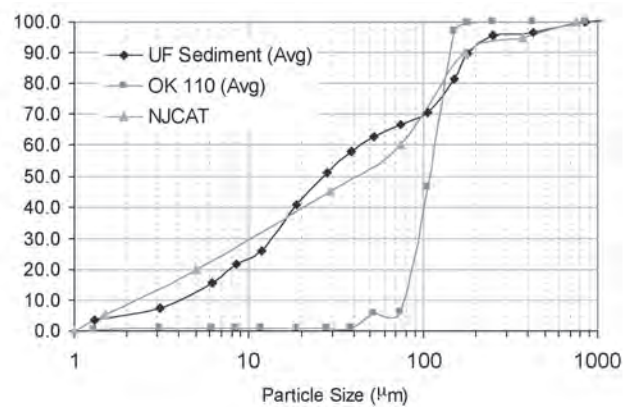


Figure 1. Particle size distributions for the test materials, as compared to the NJCAT/NJDEP theoretical distribution.

Tests were conducted to quantify the CDS unit (1.1 cfs (31.3-L/s) design capacity) performance at various flow rates, ranging from 1% up to 125% of the design capacity of the unit, using the 2400 micron screen. All tests were conducted with controlled influent concentrations approximately 200 mg/L. Effluent samples were taken at equal time intervals across the entire duration of each test run. These samples were then processed with a Dekaport Cone sample splitter to obtain representative sub-samples for Suspended Sediment Concentration (SSC – ASTM Standard Method D3977-97) and particle size distribution analysis.

Results and Modeling

Based on the testing data from the University of Florida, a performance model was developed for the CDS system. A regression analysis was used to develop a fitting curve for the scattered data points at various design flow rates. This model, which demonstrated good agreement with the laboratory data, can then be used to predict CDS system performance with respect to SSC removal for any particle size gradation assuming sandy-silt type of inorganic components of SSC. Figure 2 shows CDS predictive performance for two typical particle size gradations (NJCAT gradation and OK-110 sand).

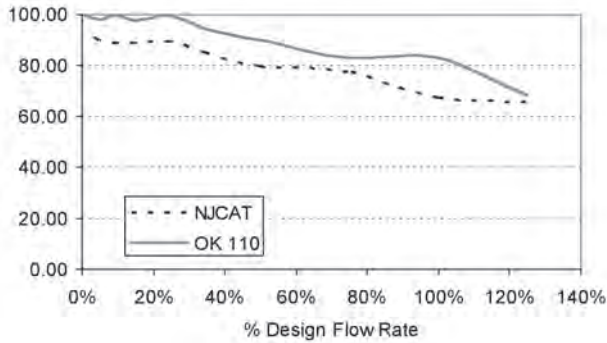


Figure 2. CDS stormwater treatment predictive performance for various particle gradations as a function of operating rate.

Many regulatory jurisdictions set a performance standard for hydrodynamic devices by stating that the devices shall be capable of achieving an 80% removal efficiency for particles having a mean particle size (d50) of 125 microns (WADOE, 2008). The model can be used to calculate the expected performance of such a PSD (shown in Figure 3). Supported by the laboratory data, the model indicates (Figure 4) that the CDS system with 2400 micron screen achieves approximately 80% removal at 100% of design flow rate, for this particle size distribution (d50 = 125 μm).

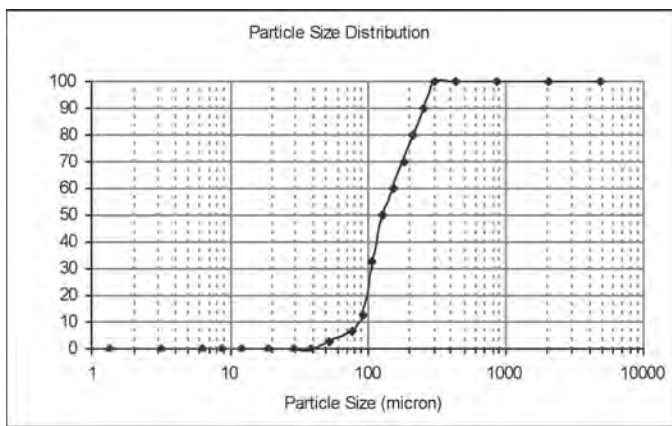


Figure 3. PSD with d50 = 125 microns, used to model performance for Ecology submittal.

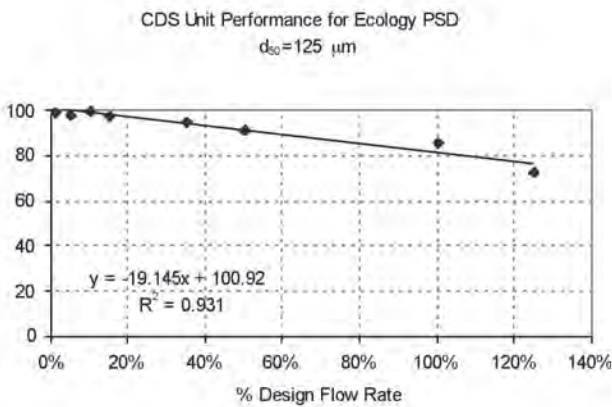


Figure 4. Modeled performance for CDS unit with 2400 microns screen, using Ecology PSD.

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit, e.g., unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant deposition and transport may vary from year to year and regular inspections will help insure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (i.e. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Additionally, installations should be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions to inlet and/or separation screen. The inspection should also identify evidence of vector infestation and accumulations of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If sorbent material is used for enhanced removal of hydrocarbons then the level of discoloration of the sorbent material should also



be identified during inspection. It is useful and often required as part of a permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (screen/cylinder) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained behind the screen. For units possessing a sizable depth below grade (depth to pipe), a single manhole access point would allow both sump cleanout and access behind the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump and/or when an appreciable level of hydrocarbons and trash has accumulated. If sorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Finer, silty particles at the top of the pile typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine if the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of the CDS systems should be done during dry weather conditions when no flow is entering the system. Cleanout of the CDS with a vacuum truck is generally the most effective and convenient method of excavating pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should be pumped out also if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use adsorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash can be netted out if you wish to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure proper safety precautions. Confined Space Entry procedures need to be followed. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many locations, disposal of evacuated sediments may be handled in the same manner as disposal of sediments removed from catch basins or deep sump manholes. Check your local regulations for specific requirements on disposal.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	yd ³	m ³
CDS2015-4	4	1.2	3.0	0.9	0.5	0.4
CDS2015	5	1.5	3.0	0.9	1.3	1.0
CDS2020	5	1.5	3.5	1.1	1.3	1.0
CDS2025	5	1.5	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Note: To avoid underestimating the volume of sediment in the chamber, carefully lower the measuring device to the top of the sediment pile. Finer silty particles at the top of the pile may be more difficult to feel with a measuring stick. These finer particles typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile.



CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment ¹	Floatable Layer Thickness ²	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than eighteen inches the system should be cleaned out. **Note: To avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**
2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.



800.925.5240

contechstormwater.com

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CONTECH Construction Products Inc. provides site solutions for the civil engineering industry. CONTECH's portfolio includes bridges, drainage, sanitary sewer, stormwater and earth stabilization products. For information on other CONTECH division offerings, visit contech-cpi.com or call 800.338.1122

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APPENDIX G

***TEMPORARY EROSION AND SEDIMENT
CONTROL AND PERMANENT INSPECTION
AND MAINTENANCE CHECKLIST***

Temporary Erosion and Sediment Control Inspection and Maintenance Checklist

Erosion and Sediment Control Measure	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Stabilized Construction Entrance	Daily	<ul style="list-style-type: none"> • Periodic top dressing with additional aggregate as required • Clean sediment in public right-of-ways immediately
Silt Fence	Weekly + After Each Rain	<ul style="list-style-type: none"> • Remove & redistribute sediment when bulges develop in the silt fence.
Inlet Protection	Weekly + After Each Rain	<ul style="list-style-type: none"> • Refer to Figures A5.11, A5.12, A5.13 & A5.14 within the NYSDEC New York State Standard and Specifications for Erosion and Sediment Control
Stone Check Dam	Weekly + After Each Rain	<ul style="list-style-type: none"> • Correct all damage immediately. • Notify design engineer if significant erosion has occurred between structures as a liner of stone or other suitable material maybe required in this section of the channel. • Remove sediment accumulated behind the dam as needed to allow the channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam. • Replace stones as needed to maintain the design cross section of the structures.

Temporary Erosion and Sediment Control Inspection and Maintenance Checklist
(Cont'd)

Erosion and Sediment Control Measure	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Temporary Swale	Weekly + After Each Rain	<ul style="list-style-type: none"> • Immediately remove any sediment and reestablish vegetative cover as required. • Inspect entire swale and surrounding area for rilling and repair as required with the placement of additional topsoil, then seeding and mulching, as outlined in Figure No. 5A.2 of the NYSDEC New York State Standards and Specifications for Erosion and Sediment Control.
Temporary Sediment Trap	Weekly + After Each Rain	<ul style="list-style-type: none"> • Remove and redistribute sediment when it reaches an elevation indicated on the construction documents. • Check for rilling within and around the sediment basin and repair as required. • Remove all sediment and debris from the outlet control structure as maybe required.

Permanent Stormwater Management Practice Inspection and Maintenance Checklist

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Vegetated Swale/Open Channel/Level Spreader	Monthly	<ul style="list-style-type: none"> • Check that contributing area is clean of debris. • Confirm vegetation is adequately maintained (mowing, fertilizer, etc.) • Check for rilling/erosion and repair as needed. • Confirm dewatering occurs between storms.
Stormwater Management Basin	Monthly	<ul style="list-style-type: none"> • Check Permanent Pool for undesirable vegetative growth and floatings or floatable debris. Remove as needed. • Check Forebays for sediment and cleanout when it depth <50% design depth. • Check Dry Pond areas for adequate vegetation, undesirable vegetative growth, low flow channels are clear of obstructions, standing water or wet spots and sediment and/or trash accumulation. Repair/remove as necessary.

Permanent Stormwater Management Practice Inspection and Maintenance Checklist
(Cont'd)

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Stormwater Management Basin	Annually + After Major Storms	<ul style="list-style-type: none"> • Check adequacy of vegetation and ground cover; for evidence of embankment erosion, animal burrows, unauthorized plantings and cracking, bulging or sliding of dam, clear/properly functioning drains, seeps/leaks on downstream face, failure of slope protection or riprap. Repair/remove as necessary. • Confirm emergency spillway is clear of obstructions and debris. • Confirm all inlets and outlet structures/pipes are operating properly.
Drain Inlets	Monthly	<ul style="list-style-type: none"> • Check for blockage and/or erosion at top of each inlet. Repair/remove as necessary. • Check for sediment and debris collected within sumps and clean out as necessary.
Vegetated Swale/Open Channel/Level Spreader	Annually + After Major Storms	<ul style="list-style-type: none"> • Clean sediment and re-vegetate as necessary. • Check condition of outlet and repair as necessary
Native Stone Wall	Annually + After Major Storms	<ul style="list-style-type: none"> • Check for erosion and/or damage and repair as necessary.

Permanent Stormwater Management Practice Inspection and Maintenance Checklist
(Cont'd)

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
CDS Water Quality Structure	Quarterly + After Major Storms (See Maintenance Guidelines in Appendix D)	<ul style="list-style-type: none"> • Open access cover for visual inspection and measure the distance from the standing water surface to the sediment pile with a measuring stick or tape. If less than 4 feet, insert hose from vacuum truck into the sump and screen through both access covers to clean out the standing water, layer of oil, sediment, trash, etc. • The screen must be powerwashed to ensure it is free of trash and debris.
Porous Pavement and Permeable Pavers	Monthly and As Needed	<ul style="list-style-type: none"> • Ensure that paving area is clean of debris • Ensure that paving dewaterers between storms • Ensure that the area is clean of sediments • Mow upland and adjacent areas, and seed bare areas
	Quarterly	<ul style="list-style-type: none"> • Vacuum sweep frequently to keep surface free of sediments
	Annually	<ul style="list-style-type: none"> • Inspect the surface for deterioration or spalling

The contract vendee/operator responsible for inspection and maintenance as outlined above:

Route 17 Cars, LLC
Contact Name: Mr. Eric Kahn
1143 Dutchess Turnpike
Poughkeepsie, NY 12603
Phone: (845) 454-2400

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APPENDIX H

CONTRACTOR'S CERTIFICATION



- SITE PLANNING
- CIVIL ENGINEERING
- LANDSCAPE ARCHITECTURE
- TRANSPORTATION ENGINEERING

- LAND SURVEYING
- ENVIRONMENTAL STUDIES
- HAZARDOUS WASTE
- CONSTRUCTION SERVICES

JMC Project 13021
 Volkswagen of Newburgh
 Route 17K
 Town of Newburgh, NY

CONTRACTOR'S CERTIFICATION

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Company Name: _____

Address: _____

Telephone Number: _____

Name and Title: _____

Signature: _____ Date: _____

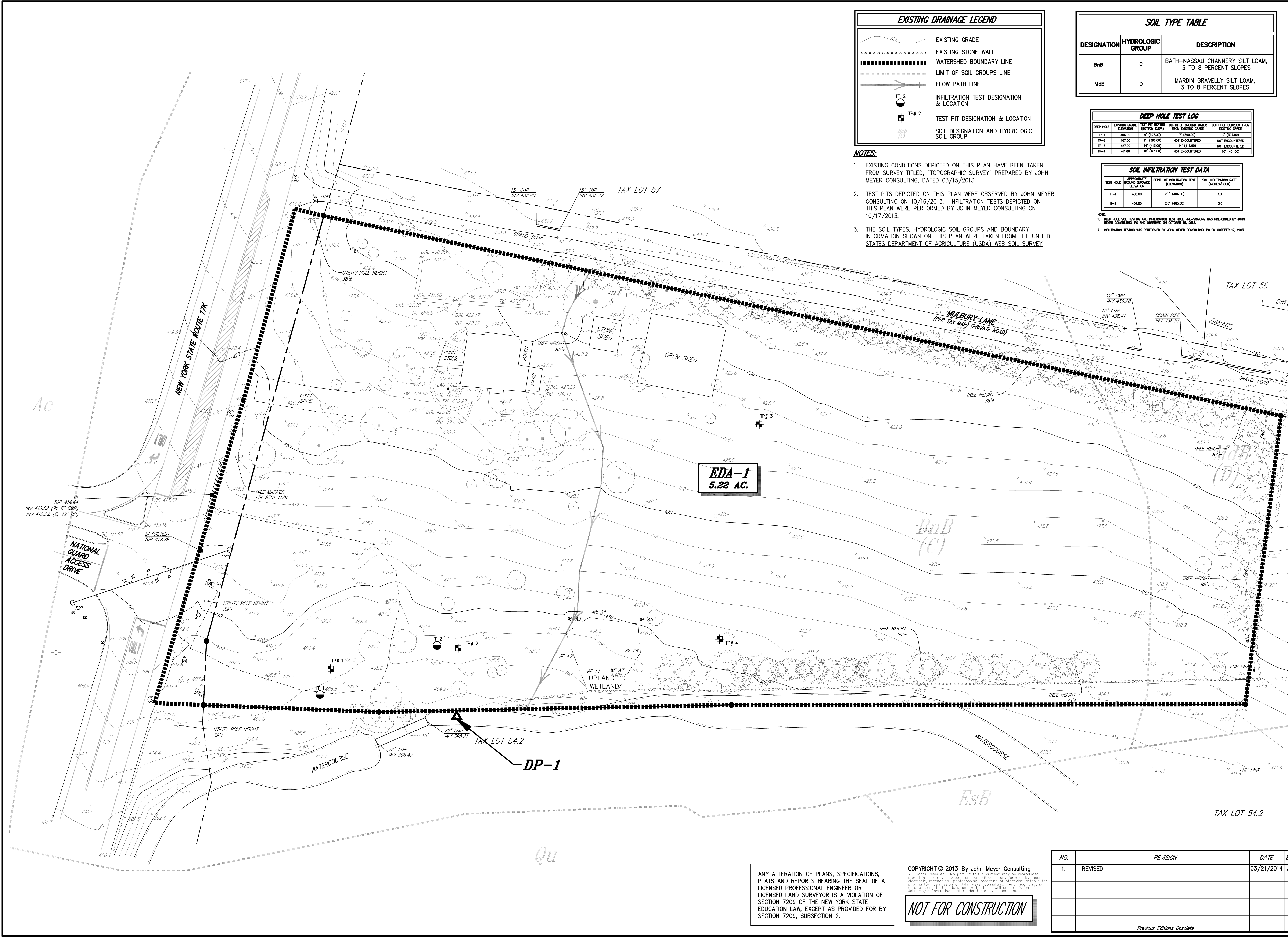
Permit Identification No.: _____

Name and Title of Trained Contractor: _____

Elements of the SWPPP Contractor is responsible for: _____

APPENDIX I

DRAWINGS



EXISTING DRAINAGE LEGEND

- EXISTING GRADE
- EXISTING STONE WALL
- WATERSHED BOUNDARY LINE
- LIMIT OF SOIL GROUPS LINE
- FLOW PATH LINE
- INFILTRATION TEST DESIGNATION & LOCATION
- TEST PIT DESIGNATION & LOCATION
- SOIL DESIGNATION AND HYDROLOGIC SOIL GROUP

- NOTES:**
- EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY" PREPARED BY JOHN MEYER CONSULTING, DATED 03/15/2013.
 - TEST PITS DEPICTED ON THIS PLAN WERE OBSERVED BY JOHN MEYER CONSULTING ON 10/16/2013. INFILTRATION TESTS DEPICTED ON THIS PLAN WERE PERFORMED BY JOHN MEYER CONSULTING ON 10/17/2013.
 - THE SOIL TYPES, HYDROLOGIC SOIL GROUPS AND BOUNDARY INFORMATION SHOWN ON THIS PLAN WERE TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) WEB SOIL SURVEY.

SOIL TYPE TABLE

DESIGNATION	HYDROLOGIC GROUP	DESCRIPTION
BnB	C	BATH-NASSAU CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
MdB	D	MARDIN GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES

DEEP HOLE TEST LOG

DEEP HOLE	EXISTING GRADE ELEVATION	TEST PIT DEPTH FROM EXISTING GRADE	DEPTH OF GROUND WATER FROM EXISTING GRADE	DEPTH OF BEDROCK FROM EXISTING GRADE
DP-1	408.00	7' (267.00)	7' (398.00)	7' (397.00)
DP-2	427.00	17' (246.00)	NOT ENCOUNTERED	NOT ENCOUNTERED
DP-3	427.00	14' (413.00)	14' (413.00)	NOT ENCOUNTERED
DP-4	411.00	10' (400.00)	NOT ENCOUNTERED	10' (400.00)

SOIL INFILTRATION TEST DATA

TEST HOLE	APPROXIMATE GROUND SURFACE ELEVATION	DEPTH OF INFILTRATION TEST (ELEVATION)	SOIL INFILTRATION RATE (INCHES/HOUR)
IT-1	406.00	20' (404.00)	7.0
IT-2	407.00	20' (405.00)	13.0

- NOTE:**
- DEEP HOLE SOIL TESTING AND INFILTRATION TEST HOLE PRE-SOUNDING WAS PERFORMED BY JOHN MEYER CONSULTING, PC AND OBSERVED ON OCTOBER 16, 2013.
 - INFILTRATION TESTING WAS PERFORMED BY JOHN MEYER CONSULTING, PC ON OCTOBER 17, 2013.

Ac

**EDA-1
5.22 AC.**

BnB
(C)

WF A1 WF A7
UPLAND
WETLAND

EsB

Qu

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SCALE	APPROVED	RR
1" = 30'	JE	

DATE: 11/07/2013
PROJECT NO: 13021
DWC: 1302-DRAINAGE
TAR: EDA
LA: EDA
DRAWING NO: **DA-1**

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1143 DUTCHESS TURNPIKE
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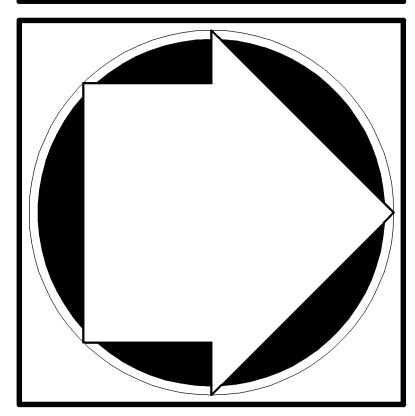
CLARIS CONSTRUCTION INC.
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EXISTING DRAINAGE AREA MAP

VOLKSWAGEN OF NEWBURGH
ROUTE 17K VW DEALERSHIP
TOWN OF NEWBURGH, NEW YORK



DEEP HOLE TEST LOG			
DEEP HOLE	EXISTING GRADE ELEVATION	TEST PIT DEPTH (BOTTOM ELEV.)	DEPTH OF GROUND WATER FROM EXISTING GRADE
TP-1	406.00	9' (397.00)	7' (399.00)
TP-2	407.00	11' (396.00)	NOT ENCOUNTERED
TP-3	427.00	14' (413.00)	NOT ENCOUNTERED
TP-4	411.00	10' (401.00)	NOT ENCOUNTERED

SOIL INFILTRATION TEST DATA		
TEST HOLE	APPROXIMATE GROUND SURFACE ELEVATION	SOIL INFILTRATION RATE (INCHES/HOUR)
IT-1	406.00	7.0
IT-2	407.00	13.0

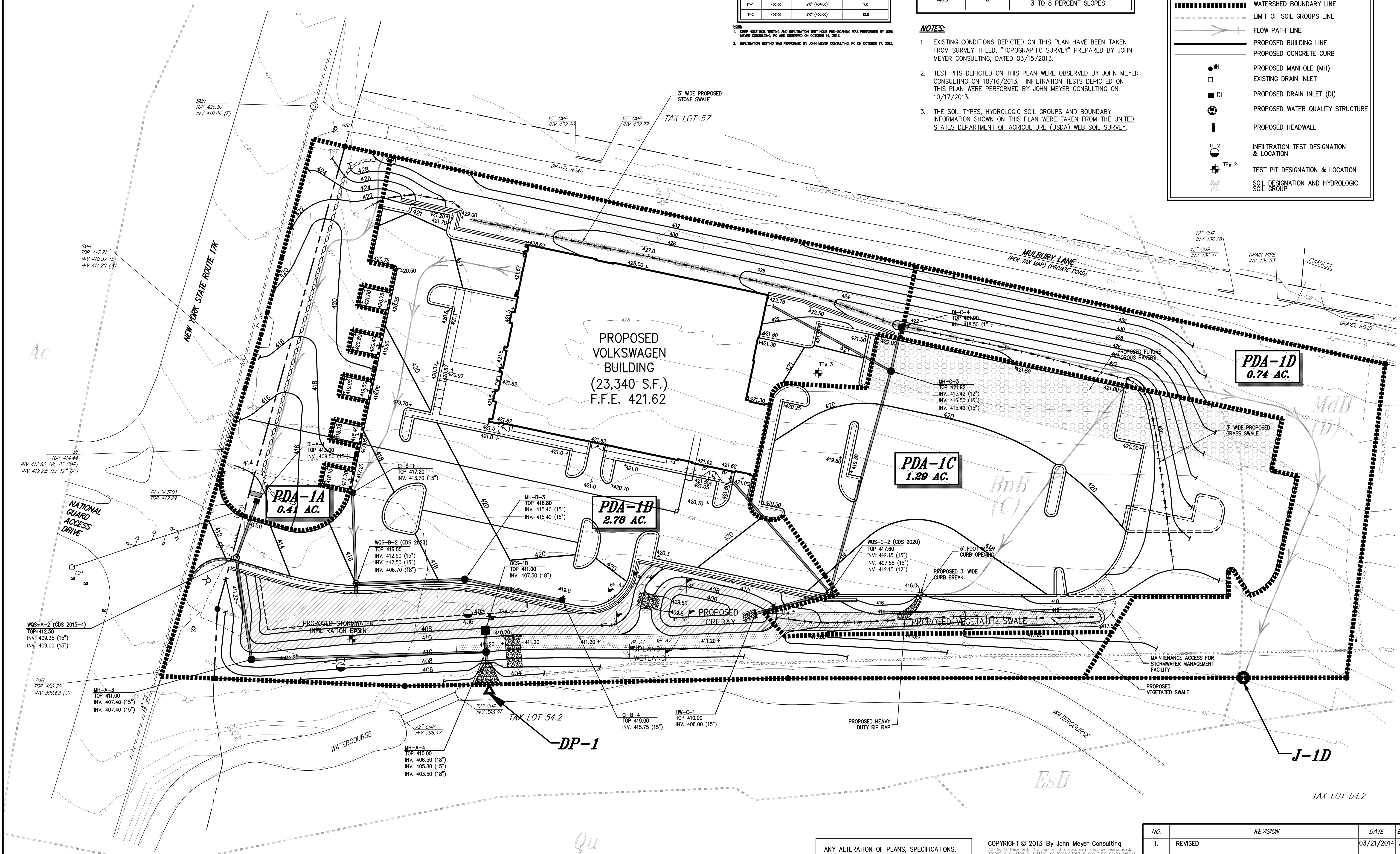
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BnB	C	BATH-NASSAU CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES
MdB	D	MARDIN GRAVELLY SILT LOAM, 3 TO 8 PERCENT SLOPES

PROPOSED DRAINAGE LEGEND

- EXISTING GRADE
- PROPOSED FINISHED GRADE
- PROPOSED DITCH OR SWALE
- EXISTING STONE WALL
- WATERSHED BOUNDARY LINE
- LIMIT OF SOIL GROUPS LINE
- FLOW PATH LINE
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED MANHOLE (MH)
- EXISTING DRAIN INLET
- PROPOSED DRAIN INLET (DI)
- PROPOSED WATER QUALITY STRUCTURE
- PROPOSED HEADWALL
- INFILTRATION TEST DESIGNATION & LOCATION
- TEST PIT DESIGNATION & LOCATION
- SOIL DESIGNATION AND HYDROLOGIC SOIL GROUP

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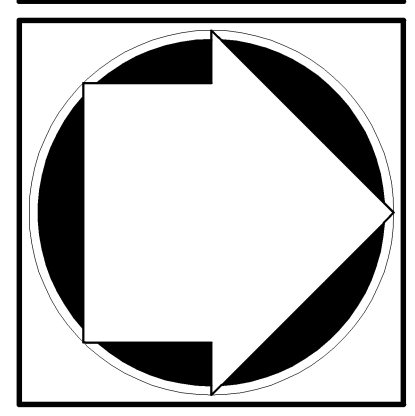
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PROPOSED DRAINAGE AREA MAP

VOLKSWAGEN OF NEWBURGH
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