TECHNICAL REPORT

STORMWATER MANAGEMENT REPORT

WHITTIER FIELD
BLOCK 405, LOTS 1,7,8 & 11
CITY OF CAMDEN
CAMDEN COUNTY, NEW JERSEY

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1.0 INTRODUCTION

Pennoni Associates, Inc., has been retained KIPP Cooper Norcross, Inc. to provide preliminary/final design for a multi-purpose synthetic turf field with bleacher area, restrooms, parking areas, stormwater collection / stormwater management, landscaping and lighting in the City of Camden, Camden County, New Jersey.

2.0 PROJECT DESCRIPTION

The project is bounded by S. 7th Street to the west and Kaighn Avenue to the north in Camden, New Jersey. The property can be found on the United States Geological Survey (USGS) 7.5-minute topographic quadrangle for Camden, New Jersey. A copy of the USGS map is provided as Figure 1. The property consists of Block 405, Lots 1, 7, 8 and 11 (Figure 2). The "site" is defined as the tax map property boundaries. The site is the location of a grass covered vacant lot with remnants of paved driveways from S. 7th Street and Kaighn Avenue (CR 607).

Existing Conditions

For existing condition runoff calculations, the site was analyzed as two (2) drainage sub-areas Existing Drainage Area 1 (EDA-1) and Existing Drainage Area 2 (EDA-2), which drain to two (2) "point of interest" (EO-1 and EO-2) (refer to Appendix A, Proposed Hydrographs).

Existing drainage area 1 (EDA-1) consists of existing grass area and paved entrance to South 7th Street. The stormwater runoff drains offsite in a southernly direction towards an existing stormwater inlet on South 7th Street (EO-1).

Existing drainage area 2 (EDA-2) consists of existing grass area and paved entrance to Kaighn Avenue. The stormwater runoff drains offsite in an easterly direction towards an existing stormwater inlet on Kaighn Avenue (EO-2).

Pre-Developed Drainage Area Plan (CS9001), can be found in Appendix I.

Proposed Conditions

The project construction consists of an artificial turf multi-purpose field, parking areas, stormwater collection / stormwater management, landscaping and lighting.

The proposed watershed areas for this analysis are divided into five (5) sub areas, proposed drainage area 1, 1A thru proposed drainage area 4 (PDA-1, PDA-1A thru PDA-4) (See Dwg. CS9002). The post-developed calculations were analyzed to one (1) "point of interest" (PO-1) (Appendix B, Proposed Hydrographs).

Proposed Drainage Area 1 (PDA-1) consists of the synthetic turf field, restroom building, and bleacher area. The stormwater runoff from the synthetic turf field will be routed through a subsurface detention basin to provide a slow release of stormwater into bioretention basin #1. Proposed drainage area 1A (PDA-1) consists of runoff from the westerly parking area, concession stand, storage shed, seating area and open area. The stormwater runoff flows to a proposed stormwater collection system and is discharged to bioretention basin #1. The basin discharges to bioretention basin #2. Bioretention basin #2 will provide a slow release of stormwater into the existing drainage system on South 7th Street (PO-1).

Proposed drainage area 2 (PDA-2) consists of runoff from the westerly parking area, bleacher area and entrance driveway to South 7th Street. The stormwater runoff flows to a proposed stormwater collection system and is discharged to bioretention basin #2. Bioretention basin #2 will provide a slow release of stormwater into the existing drainage system on South 7th Street (PO-1).

Proposed drainage area 3 (PDA-3) consists of grass and landscaped area adjacent to South 7th Street. The runoff drains to in a southerly direction towards an existing stormwater inlet on South 7th Street (PO-1).

Proposed drainage area 4 (PDA-4) consists of a grass and landscape area on the south easterly side of the site. The stormwater runoff drains in a southernly direction towards a wooded area adjacent to Interstate 676.

Post-Developed Drainage Area Plan (CS9002) can be found in Appendix I.

3.0 SOIL DATA

The site soils consist of Urban land (Ur), 0 to 5 percent slopes as depicted on the United States Department of Agriculture, (USDA) Web Soil Survey of Camden County, New Jersey (Figure 3). Urban land has not been assigned a hydrologic soil group; therefore Type “D” soils have been utilized.

4.0 WATERSHED DATA

Based on a review of FEMA Flood Insurance Rate Maps, and NJ GeoWeb, we have made the following determinations near the project limits:

According to the National Flood Insurance Program's Effective Flood Insurance Rate Map FEMA Panel #34007C0036F, revised 8/17/2016, the proposed site is not located within the FEMA flood hazard area (Figure 4).

5.0 REQUIREMENTS FOR STORMWATER MANAGEMENT

As required by N.J.A.C. 7:8-1.6, all "major development" shall comply with the requirements of N.J.A.C. 7:8 Stormwater Management Rules. A "Major development" means an individual "development," as well as multiple developments that individually or collectively result in:

1. The disturbance of one or more acres of land since February 2, 2004;

2. The creation of one-quarter acre or more of "regulated impervious surface" since February 2, 2004;

3. The creation of one-quarter acre or more of "regulated motor vehicle surface" since March 2, 2021; or

4. A combination of 2 and 3 above that totals an area of one-quarter acre or more. The same surface shall not be counted twice when determining if the combination area equals one-quarter acre or more.

Major development includes all developments that are part of a common plan of development, or sale (for example, phased residential development) that collectively or individually meet one or more of paragraphs 1, 2, 3, or 4 above. Projects undertaken by any government agency that otherwise meet the definition of "major development", but which do not require approval under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., are also considered "major development."

The stormwater management rules at N.J.A.C. 7:8 apply to the project site, as the site meets the definition for a major development based on the following:

1. The disturbance of one or more acres of land since February 2, 2004. **The project will disturb more than one acre of land.**

2. One-quarter acre or more of "regulated impervious surface" has been created on the site since February 2, 2004**. The project will create more than one-quarter acre of "regulated impervious surface".**

3. The creation of one-quarter acre or more of "regulated motor vehicle surface" since March 2, 2021. **The project will create more than one-quarter acre of "regulated motor vehicle surface".**

6.0 DESIGN CRITERIA

GREEN INFRASTRUCTURE:

To satisfy the groundwater recharge, runoff quality and runoff quantity the project design must utilize green infrastructure BMP's (GI BMP) as identified in Table 5-1 at N.J.A.C. 7:8-5.2 (f) or an alternative stormwater management measure approved in accordance with N.J.A.C. 7:8-5.2(g). The following green infrastructure BMP's from Table 5-1 at N.J.A.C. 7:8-5.2 (b) have been incorporated into the project design:

1. Small scale bioretention area – Two (2) small scale bioretention areas are provided as part of the project design. As required by N.J.A.C. 7:8-5.3 (b), the small-scale bioretention area is subject to a maximum contributory drainage area of 2.5 acres.

The proposed small scale bioretention areas will have contributory drainage areas (excludes basin area) of 0.71 acres (Bioretention Basin-1), and 0.83 acres (Bioretention Basin-2). The proposed green infrastructure BMP's comply with N.J.A.C. 7:8-5.3 (b).

2. Small Scale Infiltration Basin – One (1) subsurface infiltration basin is provided as part of the project design. As required by N.J.A.C. 7:8-5.3 (b), the small-scale bioretention area is subject to a maximum contributory drainage area of 2.5 acres.

The proposed subsurface small scale infiltration basin will have contributory drainage areas of 2.50 acres (Subsurface Basin).

GROUNDWATER RECHARGE:

Pursuant to the N.J.A.C. 7:8-5.4 (b) groundwater recharge requirements apply if there is either a 0.25 acre increase in impervious area or 1 acre of disturbance. The project disturbs more than 1 acre and increases motor vehicle surfaces by more than 0.25 acres. Therefore, one of the following requirements shall be met to satisfy the standards for groundwater recharge: (1) 100 percent of the site's average annual pre-developed groundwater recharge volume shall be maintained after development; (2) 100 percent of the difference between the site's pre- and post-developed 2-year runoff volumes shall be infiltrated.

According to the New Jersey State Development and Redevelopment Plan, the site is within a designated Urban Center. Groundwater recharge is not required within an "Urban Redevelopment Area" pursuant to N.J.A.C. 7:8-5.4(b)2 (Appendix F, Supporting Documentation). Therefore, groundwater recharge was not evaluated for this project.

RUNOFF QUANTITY:

Post-construction runoff hydrographs for the 2, 10 and 100-year have been analyzed as part of the stormwater management design. Pursuant to N.J.A.C. 7:8-5.6(b)one of the following peak runoff requirements must be met: (1) demonstrate that the post development hydrograph is less than the pre-development hydrograph at all points during 2, 10 and 100 year storm events; (2) demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the current and projected two-, 10-, and 100-year storm events, as defined and determined pursuant to N.J.A.C. 7:8-5.7(c) and (d), respectively and that the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site.; or (3) design stormwater management measures so that the post-construction peak runoff rates for the current and projected two-, 10-, and 100-year storm events, as defined and determined pursuant to N.J.A.C. 7:8-5.7(c) and (d), respectively, are 50, 75, and 80 percent, respectively, of the pre-construction peak runoff rates. The percentages apply only to the post-construction stormwater runoff that is attributable to the portion of the site on which the proposed development or project is to be constructed.

In accordance with N.J.A.C. 7:8-5.6(b)2 the stormwater management measures are designed to reduce the post-development peak discharge for the 2, 10, and 100-year storm events to release 50%, 75% and 80%, respectively of the pre-development runoff rates, as a result of the proposed development. See Appendices A & B for pre- and post-construction hydrographs.

RUNOFF QUALITY:

Pursuant to N.J.A.C. 7:8-5.2 (f), the green infrastructure BMP's can be utilized to satisfy the requirements of N.J.A.C. 7:8-5.5 for stormwater runoff quality. Stormwater Management measures shall be designed to reduce the post-construction load of total suspended solids (TSS) in stormwater runoff generated from the water quality design storm by 80 percent of the anticipated load from the developed site. The increase in motor vehicle surface, must be treated for 80% TSS reductions.

The water quality standards will apply as the net increase of motor vehicle surface is 0.73 acres which exceeds the maximum net increase of 0.25 acres.

The water quality (WQ) design storm is 1.25 inches of rainfall in 2-hours. In accordance with N.J.A.C. 7:8-5.5, Table 5-4, a one-minute water quality design storm rainfall distribution was utilized for the calculations. Bentley's Pondpack Connect Edition was used to perform the calculations.

The proposed bioretention areas will provide 80% TSS removal for motor vehicle surfaces of 0.28 acres (PDA-1) , and 0.45 acres (PDA-2).

7.0 TECHNIQUES OF ANALYSIS

In accordance with the stormwater runoff calculation methodology at N.J.A.C. 7:8-5.6, the quantity (volume and rate) of stormwater runoff for pre- and post-developed conditions is calculated based on the USDA NRCS methodology as described in Technical Release 55 - Urban Hydrology for Small Watersheds (TR-55), dated June 1986. NRCS 24 hr design storm rainfall depths for New Jersey, as revised September 2004, are used in the calculations.

Pre- and post-developed times of concentration (TC) are determined using the hydraulically longest flow path. Curve numbers (CN) for the drainage areas for the pre- and post-developed condition are based on the hydrologic soil group and land use.

The developed area is made up of Urban Land, Type D soils. Therefore, CNs of 80 for lawn in good condition, 84 for lawn/landscaped areas in fair condition, 98 for impervious areas have been utilized in the calculations. The impervious areas were calculated as separate subareas to generate hydrographs without weighted CNs as outlined in the BMP manual chapter 5.

Using the drainage areas, the TCs and CNs as input data, *Pond Pack Connect Edition,* a hydrologic/hydraulic software program by Bentley, was utilized to generate the runoff volume and rates.

8.0 KEY HYDROLOGIC PRINCIPALS

A 24-hour, NOAA _C storm distribution (Supporting Documentation, Appendix H) was utilized with the following rainfall amounts, within Camden County for each storm analyzed.

Current		Projected	
2 year	3.41 inches	2 year	3.87 inches
10 year	5.26 inches	10 year	5.98 inches
100 year	8.95 inches	100 year	11.12 inches

9.0 PRE- VS. POST-DEVELOPED RUNOFF COMPARISON

The proposed stormwater management system has been designed to reduce the post-development peak discharge for the 2, 10, and 100-year storm events to release 50%, 75% and 80%, respectively as a result of the proposed development.

The pre-developed calculations were analyzed to two (2) points of interest (EO-1 and EO-2). Under post-developed conditions the calculations were analyzed to one (1) “point of interest” (PO-1). The post-development peak discharge for the 2, 10, and 100-year storm events will release 50%, 75% and 80% of the pre-developed peak discharge at PO-1. The reductions are applied to PO-1. These results are detailed in Tables 1 and 2 below.

Table 1
Pre-Developed vs. Post-Developed Current Flow Comparison
(PO-1)

Storm (Year)	Pre-Developed Runoff Rate (cfs)	Allowable Post-Developed Runoff Rate (cfs)	Post-Developed Runoff Rate (cfs)	Runoff Rate Decrease from Pre-Developed (cfs)	% Reduced
2	5.62	2.81	2.62	-3.00	53.3
10	11.31	8.48	7.25	-4.06	35.8
25	15.40	15.40	10.65	-4.75	30.8
100	23.29	18.63	17.71	-5.58	23.9

Table 2
Pre-Developed vs. Post-Developed Projected Flow Comparison
(PO-1)

Storm (Year)	Pre-Developed Runoff Rate (cfs)	Allowable Post-Developed Runoff Rate (cfs)	Post-Developed Runoff Rate (cfs)	Runoff Rate Decrease from Pre-Developed (cfs)	% Reduced
2	7.32	3.66	3.48	-3.84	52.4
10	14.66	10.99	9.22	-5.44	37.1
25	20.26	20.26	13.93	-6.33	31.2
100	33.59	26.87	24.62	-8.97	26.7

The above indicates that the post developed site does not create an increase in runoff rate or runoff volume to the existing sewer system.

The post-development peak discharge for the 2, 10, and 100-year storm events will release 50%, 75% and 80% of the pre-developed peak discharge at PO-2. The reductions are applied to PO-2. These results are detailed in Tables 3 and 4 below.

Table 3
Pre-Developed vs. Post-Developed Current Flow Comparison
(PO-2)

Storm (Year)	Pre-Developed Runoff Rate (cfs)	Allowable Post-Developed Runoff Rate (cfs)	Post-Developed Runoff Rate (cfs)	Runoff Rate Decrease from Pre-Developed (cfs)	% Reduced
2	0.22	0.11	0	-0.22	100
10	0.41	0.30	0	-0.41	100
25	0.55	0.55	0	-0.55	100
100	0.80	0.64	0	-0.80	100

Table 4
Pre-Developed vs. Post-Developed Projected Flow Comparison
(PO-2)

Storm (Year)	Pre-Developed Runoff Rate (cfs)	Allowable Post-Developed Runoff Rate (cfs)	Post-Developed Runoff Rate (cfs)	Runoff Rate Decrease from Pre-Developed (cfs)	% Reduced
2	0.28	0.14	0	-0.14	100
10	0.51	0.38	0	-0.38	100
25	0.69	0.69	0	-0.69	100
100	1.11	0.88	0	-0.88	100

The above indicates that the post developed site does not create an increase in runoff rate or runoff volume to the existing sewer system.

10.0 STORMWATER MANAGEMENT

Stormwater management measures have been designed to reduce the post-development peak discharge for the 2, 10, and 100-year storm events to release 50%, 75% and 80%, respectively as a result of the proposed development. Bentley's Pondpack Connect Edition was used to perform the calculations. One (1) subsurface basin and two (2) bioretention basins are proposed for the project (refer to Appendix C, Storm Basin Routings).

Subsurface Basin (UGB)

The basin consists of a small-scale subsurface infiltration basin consisting of StormTech SC-800 chambers. Runoff enters the basin through a 24" HDPE pipe from the synthetic turf athletic field and a 15" HDPE pipe from the building roof and grass area. An outflow structure provides slow release of the stormwater into bioretention basin #1. The outlet structure consists of a pre-cast concrete box with an 18" orifice (el. 7.00) and a 2.75-foot rectangular weir (el. 9.00) to regulate the discharge from the facility.

Tables 5 and 6 below provides summary of the basin inflow rates, outflow rates, storage volumes and elevations for current and projected rainfall amounts.

Table 5
UGB - Proposed Subsurface Basin Parameters Current Rainfall

Storm (year)	Peak Inflow (cfs)	Peak Outflow Routed (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	7.38	1.14	13,663	7.96
10	11.54	3.456	19,282	8.57
25	14.38	5.12	22,751	8.98
100	19.80	10.20	27,047	9.59

Table 6
UGB - Proposed Underground Basin Parameters Projected Rainfall

Storm (year)	Peak Inflow (cfs)	Peak Outflow Routed (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	8.43	1.46	15,549	8.16
10	13.17	4.43	21,297	8.80
25	17.03	7.38	25,251	9.31
100	24.69	15.00	29,472	10.00

Bioretention Area #1 (Basin #1)

The basin consists of a small-scale surface bioretention basin. Runoff enters the basin through a 24" RCP pipe. An outflow structure provides slow release of the stormwater into bioretention basin #2. The outlet structure consists of a pre-cast concrete box with four (4) 5" diameter orifices, a 3.5-foot rectangular weir (el. 8.00) and grate (el. 9.25) to regulate the discharge from the facility.

Tables 7 and 8 below provides summary of the basin inflow rates, outflow rates, storage volumes and elevations for current and projected rainfall amounts.

Table 7
Bioretention Basin #1 - Proposed Basin Parameters Current Rainfall

Storm (year)	Peak Inflow (cfs)	Peak Outflow Routed (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	1.84	1.55	1,497	7.86
10	5.38	5.07	2,338	8.41
25	8.29	7.45	2,698	8.62
100	14.34	13.56	3,520	9.06

Table 8
Bioretention Basin #1 - Proposed Basin Parameters Projected Rainfall

Storm (year)	Peak Inflow (cfs)	Peak Outflow Routed (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	2.23	2.06	1,708	8.04
10	7.19	6.43	2,548	8.53
25	10.52	10.19	3,057	8.83
100	21.04	15.81	4,365	9.39

Bioretention Area #2 (Basin #2)

The basin consists of a small-scale surface bioretention basin. Runoff enters the basin through 18" RCP pipes and the 24" RCP outflow pipe from bioretention basin #1. An outflow structure provides slow release of the stormwater into the existing sewer system located within S. 7th Street. The outlet structure consists of a pre-cast concrete box with three (3) 8" diameter orifices (el. 6.70), a 3.5-foot rectangular weir (el. 7.25) and grate (el. 8.50) to regulate the discharge from the facility.

Tables 9 and 10 below provides summary of the basin inflow rates, outflow rates, storage volumes and elevations for current and projected rainfall amounts.

Table 9
Bioretention Basin #2 - Proposed Basin Parameters Current Rainfall

Storm (year)	Peak Inflow (cfs)	Peak Outflow Routed (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	3.48	2.46	4,907	7.30
10	7.64	6.87	6,444	7.67
25	11.29	10.05	7,365	7.89
100	18.62	16.86	9,415	8.29

Table 10
Bioretention Basin #2 - Proposed Basin Parameters Projected Rainfall

Storm (year)	Peak Inflow (cfs)	Peak Outflow Routed (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	4.03	3.26	5,190	7.35
10	9.85	8.72	6,995	7.63
25	14.40	13.21	8,289	7.93
100	25.98	23.54	11,094	8.60

11.0 GROUNDWATER MOUNDING

A groundwater mounding (GWM) analysis has been performed to determine the height and range of groundwater mounding beneath the stormwater infiltration facility . The U.S. Geological Survey (USGS), in coordination with N.J. Department of Environmental Protection developed a report entitled "Simulation of Groundwater Mounding Beneath Hypothetical Stormwater Infiltration Basins", this report outlines the method utilized for analysis of groundwater mounding.

A spreadsheet was then developed by USGS to solve the Hantush equation, referred to as the Hantush Spreadsheet, which calculates the maximum height of the mounding formed and assumes all groundwater flow is horizontal above an infinite aquifer.

The maximum height of mounding occurs when the entire volume of runoff has been infiltrated into the subsoil through the bottom of the infiltration basin. Duration of the infiltration in accordance with NJ BMP Manual, Groundwater Table Hydraulic Assessment Guide for Infiltration BMP's, Chapter 13, for each facility is calculated below:

Recharge Rate UGB = 1.90 in/hr x 0.50 x 24 hr = 22.8 in/day/12 in.=1.9 ft day

Recharge Rate Bioretention Area #1 = 1.51 in/hr x 0.50 x 24 hr = 18.1 in/day/12 in.= 1.51 ft day

Recharge Rate Bioretention Area #2 = 2.94 in/hr x 0.50 x 24 hr = 35.28 in/day/12 in. = 2.94 ft day

$$\text{Duration of Infiltration Period, t} = \frac{\text{volume of runoff to be infiltrated (cf)}}{\text{Infiltration area (sf) x recharge rate (ft/day)}}$$

Current Rainfall

$$\text{Infiltration Area (UGB), t} = \frac{5{,}600 \text{ cf}}{11{,}480 \text{ sf x } 1.9 \text{ (ft/day)}} = 0.26 \text{ days / } 6.14 \text{ hrs.}$$

$$\text{Infiltration Area (Bioretention Basin 1), t} = \frac{965 \text{ cf}}{653 \text{ sf x } 1.51 \text{ (ft/day)}} = 0.97 \text{ days / } 23.4 \text{ hrs.}$$

$$\text{Infiltration Area (Bioretention Basin 2), t} = \frac{1{,}397 \text{ cf}}{2{,}178 \text{ sf x } 2.94 \text{ (ft/day)}} = 0.22 \text{ days / } 5.24 \text{ hrs.}$$

Utilizing the Hantush method and minimum input model parameters in accordance with NJ BMP Manual, Groundwater Table Hydraulic Assessment Guide for Infiltration BMP's, Chapter 13, the maximum height and range of the groundwater mound was calculated (Refer to the Appendix F

for Hantush GWM spreadsheet).
Note that the Hantush method is uses conservative values for the horizontal hydraulic conductivity (Kh) in the calculations. Limiting Kh to 5x the recharge rate results.

A higher Kh would result in a flatter curve, less mounding height and a greater horizontal distance with hydraulic conductive zone effects further out.

A minimum of two (2) feet above the estimated seasonal high-water table as measured to the bottom of the basin sand layer is required per NJ Stormwater Regulations (NJAC 7:8).

Table 11 summarizes the calculated groundwater mounding, ESHW elevation and bottom of basin elevations.

Table 11
Groundwater Mounding Results Summary

Basin	Time (Hrs.)	GWM (ft) by Hantush Spreadsheet	ESHW (Elev.)	Bottom of Basin (Elev.)
UGB	6.14	2.90	1.80	6.33
1	23.40	2.34	2.80	6.30
2	5.24	3.36	2.20	5.70

12.0 STORM SEWER DESIGN

Storm sewer design consists of Type “B” inlets, manholes, and RCP and HDPE storm pipes. All proposed conveyance systems have been sized to accommodate the 25-year storm event (Appendix G). Rainfall intensities are based on NOAA data for City of Camden, NJ (Appendix H). The infrastructure is depicted on sheet CS9003, Inlet Drainage Area Plan (Appendix I).

13.0 SOIL EROSION AND SEDIMENT CONTROL

The project will comply with the minimum design and performance standards for erosion control established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq. and implementing rules. Anticipated BMP's to be included in the Soil Erosion and Sediment Control Plan will include, structural and non-structural soil erosion BMP's to be implemented during construction, including: minimizing the area of disturbance, placement of silt fencing around the limit of disturbance, temporary soil stockpiles surrounded with silt fencing, temporary vegetative cover standards, inlet filter covers over all existing stormwater inlets, and an anti-tracking stabilized construction entrance (see Dwg. CS8001). The project will be submitted to the Camden County Conservation District for certification of a Soil Erosion and Sediment Control Plan prior to commencement of construction.

14.0 CONCLUSION

A summary of the stormwater management design is as follows:

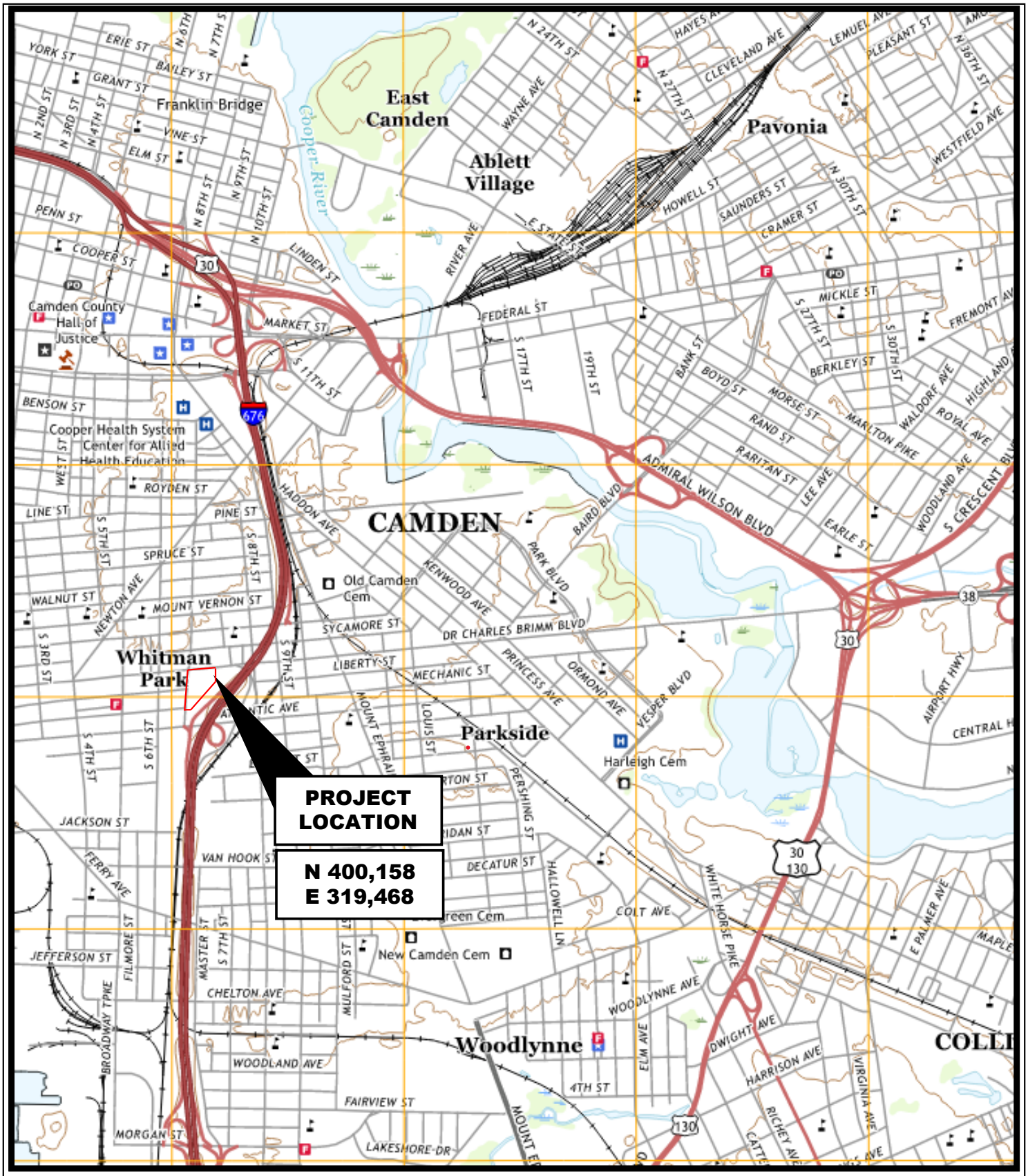
- Pursuant to N.J.A.C. 7:8-5.6(b)2 the stormwater management measures are designed to reduce the post-development peak discharge for the 2, 10, and 100-year storm events to release 50%, 75% and 80%, respectively of the pre-development runoff rates, as a result of the proposed development.

- The project is located within an Urban Redevelopment Area, and therefore, pursuant to N.J.A.C. 7:8-5.4(b)2 the groundwater recharge requirement does not apply.

- Pursuant to N.J.A.C. 7:8-5.5 (b)1, eighty percent TSS removal will be achieved utilizing bioretention areas.

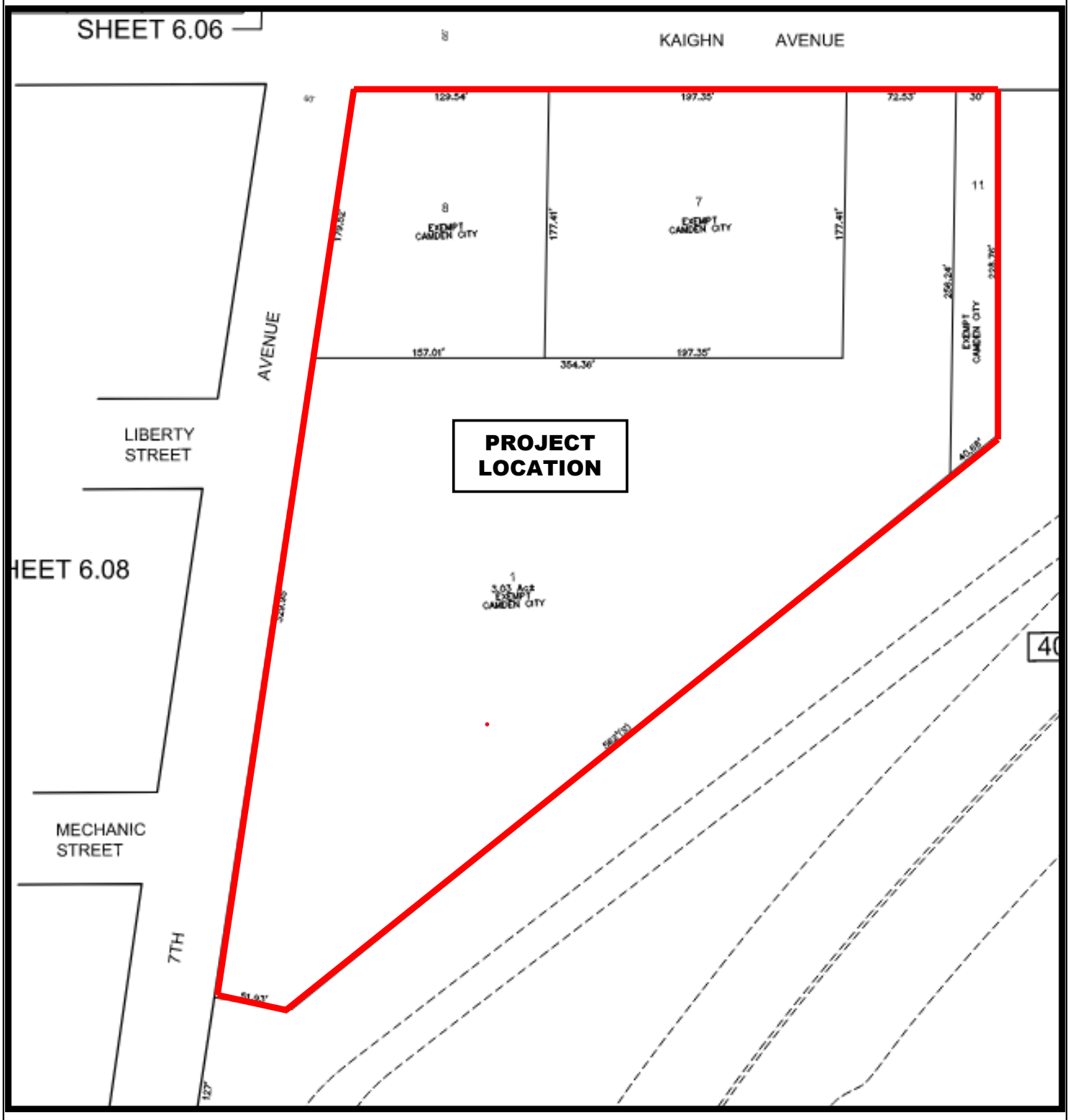
- The bioretention basins meet the definition the small-scale bioretention basins; having a contributory drainage area of 0.71 acres to bioretention Basin 1, and 0.83 acres to bioretention Basin 2, which is less than the maximum 2.5 acres.

Exhibits



USGS 7.5 Min. Camden Quadrangle, Camden County, New Jersey

Pennoni PENNONI ASSOCIATES INC. 2 AQUARIUM DRIVE, SUITE 320 CAMDEN, NEW JERSEY 08103		WHITTIER FIELD BLOCK 405, LOT 1, 7, 8 & 11 CITY OF CAMDEN, CAMDEN COUNTY NEW JERSEY
Job No. KCNAX23001	Scale: 1"=2,000'	Figure 1 –USGS Map

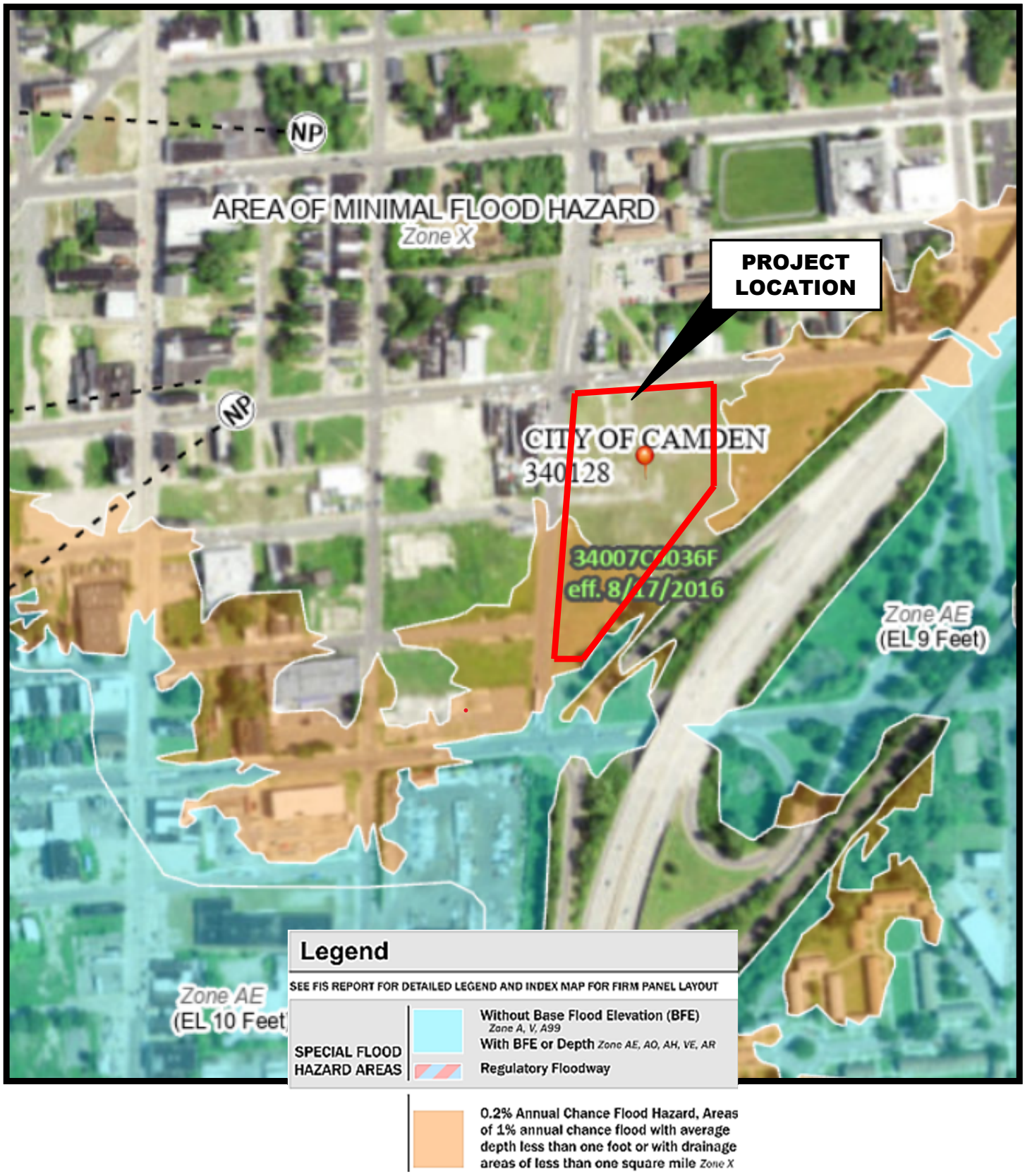


City of Camden Tax Map Plate 7.11, Camden County, New Jersey

Pennoni PENNONI ASSOCIATES INC. 2 AQUARIUM DRIVE, SUITE 320 CAMDEN, NEW JERSEY 08103		WHITTIER FIELD BLOCK 405, LOT 1, 7, 8 & 11 CITY OF CAMDEN, CAMDEN COUNTY NEW JERSEY
Job No. KCNAX23001	Scale: NTS	Figure 2 –Tax Map

NRCS WebSoil Survey, Camden County, New Jersey

Pennoni PENNONI ASSOCIATES INC. 2 AQUARIUM DRIVE, SUITE 320 CAMDEN, NEW JERSEY 08103		WHITTIER FIELD BLOCK 405, LOT 1, 7, 8 & 11 CITY OF CAMDEN, CAMDEN COUNTY NEW JERSEY
Job No. KCNAX23001	Scale: NTS	Figure 3 –Soils Map

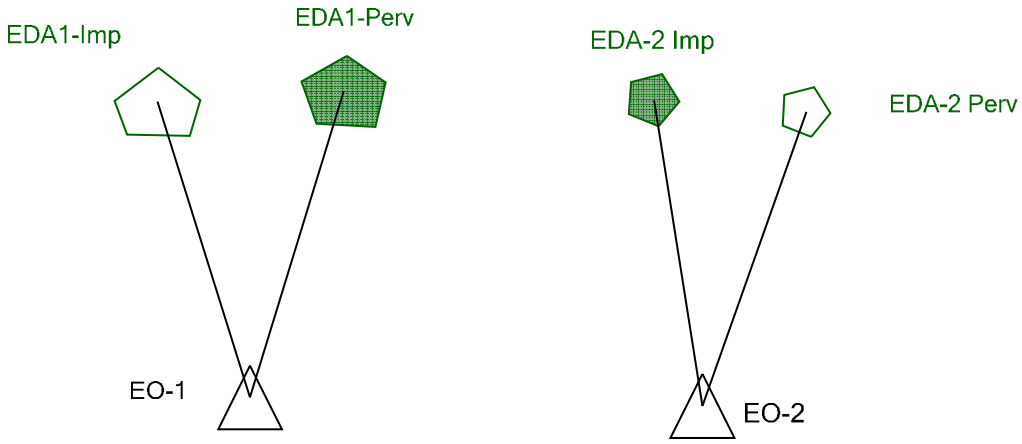


FEMA Panel 34007C0036F, Effective 8/17/2016, Camden County, New Jersey WHITTIER FIELD

Pennoni PENNONI ASSOCIATES INC. 2 AQUARIUM DRIVE, SUITE 320 CAMDEN, NEW JERSEY 08103		BLOCK 405, LOT 1, 7, 8 & 11 CITY OF CAMDEN, CAMDEN COUNTY NEW JERSEY
Job No. KCNAX23001	Scale: NTS	Figure 4 –FEMA Map

Appendix A

PRE-DEVELOPED CURRENT RAINFALL



CN Area Collection - EDA1-Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Vehicular	98.000	0.080	0.00	0.00

CN Area Collection - EDA1-Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
open space	80.000	4.210	0.00	0.00
dirt	89.000	0.160	0.00	0.00

CN Area Collection - EDA-2 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Vehicular	98.000	0.020	0.00	0.00

CN Area Collection - EDA-2 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
dirt	89.000	0.010	0.00	0.00
open space	80.000	0.090	0.00	0.00

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Pre-Developed Current Rainfall

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
EDA1-Perv	2 year	2	24,714.00	12.200	5.48
EDA1-Perv	10 year	10	49,307.00	12.150	11.11
EDA1-Perv	25 year	25	67,363.00	12.150	15.15
EDA1-Perv	100 year	100	103,075.00	12.150	22.94
EDA1-Imp	2 year	2	918.00	12.250	0.15
EDA1-Imp	10 year	10	1,452.00	12.250	0.23
EDA1-Imp	25 year	25	1,818.00	12.250	0.28
EDA1-Imp	100 year	100	2,518.00	12.250	0.39
EDA-2 Imp	2 year	2	230.00	12.150	0.06
EDA-2 Imp	10 year	10	364.00	12.150	0.09
EDA-2 Imp	25 year	25	456.00	12.150	0.11
EDA-2 Imp	100 year	100	631.00	12.150	0.15
EDA-2 Perv	2 year	2	592.00	12.150	0.17
EDA-2 Perv	10 year	10	1,165.00	12.150	0.32
EDA-2 Perv	25 year	25	1,583.00	12.150	0.44
EDA-2 Perv	100 year	100	2,406.00	12.150	0.65

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
EO-1	2 year	2	25,632.00	12.200	5.62
EO-1	10 year	10	50,759.00	12.150	11.31
EO-1	25 year	25	69,181.00	12.150	15.40
EO-1	100 year	100	105,592.00	12.150	23.29
EO-2	2 year	2	822.00	12.150	0.22
EO-2	10 year	10	1,529.00	12.150	0.41
EO-2	25 year	25	2,039.00	12.150	0.55
EO-2	100 year	100	3,038.00	12.150	0.80

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA1-Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.015 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.15 ft/s
Segment Time of Concentration	0.180 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	645.00 ft
Is Paved?	True
Slope	0.006 ft/ft
Average Velocity	1.63 ft/s
Segment Time of Concentration	0.110 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.290 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA1-Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA1-Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.022 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.18 ft/s
Segment Time of Concentration	0.152 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	166.00 ft
Is Paved?	False
Slope	0.022 ft/ft
Average Velocity	2.39 ft/s
Segment Time of Concentration	0.019 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.172 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA1-Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-2 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	40.00 ft
Manning's n	0.150
Slope	0.021 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.15 ft/s
Segment Time of Concentration	0.075 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	217.00 ft
Is Paved?	True
Slope	0.012 ft/ft
Average Velocity	2.23 ft/s
Segment Time of Concentration	0.027 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.102 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-2 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-2 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	40.00 ft
Manning's n	0.150
Slope	0.021 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.15 ft/s
Segment Time of Concentration	0.075 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	217.00 ft
Is Paved?	True
Slope	0.012 ft/ft
Average Velocity	2.23 ft/s
Segment Time of Concentration	0.027 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.102 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-2 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	24.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.290 hours
Area (User Defined)	0.080 acres
Computational Time Increment	0.039 hours
Time to Peak (Computed)	12.222 hours
Flow (Peak, Computed)	0.15 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.15 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.080 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.18 in
Runoff Volume (Pervious)	922.53 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	918.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.290 hours
Computational Time Increment	0.039 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.18 ft³/s
Unit peak time, Tp	0.193 hours
Unit receding limb, Tr	1.702 hours
Total unit time, Tb	1.895 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	24.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.290 hours
Area (User Defined)	0.080 acres
Computational Time Increment	0.039 hours
Time to Peak (Computed)	12.222 hours
Flow (Peak, Computed)	0.23 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.23 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.080 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.02 in
Runoff Volume (Pervious)	1,458.62 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,452.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.290 hours
Computational Time Increment	0.039 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.18 ft³/s
Unit peak time, Tp	0.193 hours
Unit receding limb, Tr	1.702 hours
Total unit time, Tb	1.895 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	24.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.290 hours
Area (User Defined)	0.080 acres
Computational Time Increment	0.039 hours
Time to Peak (Computed)	12.222 hours
Flow (Peak, Computed)	0.28 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.28 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.080 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.29 in
Runoff Volume (Pervious)	1,827.00 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,818.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.290 hours
Computational Time Increment	0.039 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.18 ft³/s
Unit peak time, Tp	0.193 hours
Unit receding limb, Tr	1.702 hours
Total unit time, Tb	1.895 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	24.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.290 hours
Area (User Defined)	0.080 acres
Computational Time Increment	0.039 hours
Time to Peak (Computed)	12.222 hours
Flow (Peak, Computed)	0.39 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.39 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.080 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.71 in
Runoff Volume (Pervious)	2,529.29 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,518.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.290 hours
Computational Time Increment	0.039 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.18 ft³/s
Unit peak time, Tp	0.193 hours
Unit receding limb, Tr	1.702 hours
Total unit time, Tb	1.895 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	24.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.172 hours
Area (User Defined)	4.370 acres
Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	5.59 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	5.48 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	4.370 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.57 in
Runoff Volume (Pervious)	24,830.00 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	24,714.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.172 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	16.84 ft³/s
Unit peak time, Tp	0.114 hours
Unit receding limb, Tr	1.006 hours
Total unit time, Tb	1.121 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	24.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.172 hours
Area (User Defined)	4.370 acres
Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	11.29 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	11.11 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	4.370 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.12 in
Runoff Volume (Pervious)	49,506.85 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	49,307.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.172 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	16.84 ft³/s
Unit peak time, Tp	0.114 hours
Unit receding limb, Tr	1.006 hours
Total unit time, Tb	1.121 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	24.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.172 hours
Area (User Defined)	4.370 acres

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	15.36 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	15.15 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	4.370 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.26 in
Runoff Volume (Pervious)	67,619.76 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	67,363.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.172 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	16.84 ft³/s
Unit peak time, Tp	0.114 hours
Unit receding limb, Tr	1.006 hours
Total unit time, Tb	1.121 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	24.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.172 hours
Area (User Defined)	4.370 acres
Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	23.21 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	22.94 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	4.370 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.52 in
Runoff Volume (Pervious)	103,439.72 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	103,075.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.172 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	16.84 ft³/s
Unit peak time, Tp	0.114 hours
Unit receding limb, Tr	1.006 hours
Total unit time, Tb	1.121 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	24.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.102 hours
Area (User Defined)	0.020 acres
Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.125 hours
Flow (Peak, Computed)	0.06 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.06 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.020 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.18 in
Runoff Volume (Pervious)	230.63 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	230.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.102 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.13 ft³/s
Unit peak time, Tp	0.068 hours
Unit receding limb, Tr	0.596 hours
Total unit time, Tb	0.664 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	24.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.102 hours
Area (User Defined)	0.020 acres
Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.125 hours
Flow (Peak, Computed)	0.09 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.09 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.020 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.02 in
Runoff Volume (Pervious)	364.65 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	364.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.102 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.13 ft³/s
Unit peak time, Tp	0.068 hours
Unit receding limb, Tr	0.596 hours
Total unit time, Tb	0.664 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	24.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.102 hours
Area (User Defined)	0.020 acres
Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.125 hours
Flow (Peak, Computed)	0.11 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.11 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.020 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.29 in
Runoff Volume (Pervious)	456.75 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	456.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.102 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.13 ft³/s
Unit peak time, Tp	0.068 hours
Unit receding limb, Tr	0.596 hours
Total unit time, Tb	0.664 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	24.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.102 hours
Area (User Defined)	0.020 acres
Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.125 hours
Flow (Peak, Computed)	0.16 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.15 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.020 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.71 in
Runoff Volume (Pervious)	632.32 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	631.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.102 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.13 ft³/s
Unit peak time, Tp	0.068 hours
Unit receding limb, Tr	0.596 hours
Total unit time, Tb	0.664 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	24.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.102 hours
Area (User Defined)	0.100 acres
Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.138 hours
Flow (Peak, Computed)	0.17 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.17 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.64 in
Runoff Volume (Pervious)	593.86 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	592.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.102 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.65 ft³/s
Unit peak time, Tp	0.068 hours
Unit receding limb, Tr	0.596 hours
Total unit time, Tb	0.664 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	24.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.102 hours
Area (User Defined)	0.100 acres
Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.125 hours
Flow (Peak, Computed)	0.33 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.32 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.22 in
Runoff Volume (Pervious)	1,167.47 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,165.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.102 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.65 ft³/s
Unit peak time, Tp	0.068 hours
Unit receding limb, Tr	0.596 hours
Total unit time, Tb	0.664 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	24.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.102 hours
Area (User Defined)	0.100 acres
Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.125 hours
Flow (Peak, Computed)	0.45 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.44 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.37 in
Runoff Volume (Pervious)	1,586.20 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,583.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.102 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.65 ft³/s
Unit peak time, Tp	0.068 hours
Unit receding limb, Tr	0.596 hours
Total unit time, Tb	0.664 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	24.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.102 hours
Area (User Defined)	0.100 acres
Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.125 hours
Flow (Peak, Computed)	0.67 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.65 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.64 in
Runoff Volume (Pervious)	2,411.55 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,406.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.102 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.65 ft³/s
Unit peak time, Tp	0.068 hours
Unit receding limb, Tr	0.596 hours
Total unit time, Tb	0.664 hours

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: EO-1
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Summary for Hydrograph Addition at 'EO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA1-Imp
<Catchment to Outflow Node>	EDA1-Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA1-Imp	918.05	12.250	0.15
Flow (From)	EDA1-Perv	24,714.36	12.200	5.48
Flow (In)	EO-1	25,632.41	12.200	5.62

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: EO-1
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Summary for Hydrograph Addition at 'EO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA1-Imp
<Catchment to Outflow Node>	EDA1-Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA1-Imp	1,451.69	12.250	0.23
Flow (From)	EDA1-Perv	49,307.17	12.150	11.11
Flow (In)	EO-1	50,758.86	12.150	11.31

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: EO-1
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Summary for Hydrograph Addition at 'EO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA1-Imp
<Catchment to Outflow Node>	EDA1-Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA1-Imp	1,818.40	12.250	0.28
Flow (From)	EDA1-Perv	67,362.82	12.150	15.15
Flow (In)	EO-1	69,181.23	12.150	15.40

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: EO-1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Summary for Hydrograph Addition at 'EO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA1-Imp
<Catchment to Outflow Node>	EDA1-Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA1-Imp	2,517.50	12.250	0.39
Flow (From)	EDA1-Perv	103,074.66	12.150	22.94
Flow (In)	EO-1	105,592.16	12.150	23.29

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: EO-2
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Summary for Hydrograph Addition at 'EO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2 Imp
<Catchment to Outflow Node>	EDA-2 Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-2 Imp	230.22	12.150	0.06
Flow (From)	EDA-2 Perv	592.21	12.150	0.17
Flow (In)	EO-2	822.43	12.150	0.22

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: EO-2
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Summary for Hydrograph Addition at 'EO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2 Imp
<Catchment to Outflow Node>	EDA-2 Perv

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-2 Imp	364.02	12.150	0.09
Flow (From)	EDA-2 Perv	1,164.64	12.150	0.32
Flow (In)	EO-2	1,528.66	12.150	0.41

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: EO-2
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Summary for Hydrograph Addition at 'EO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2 Imp
<Catchment to Outflow Node>	EDA-2 Perv

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-2 Imp	455.96	12.150	0.11
Flow (From)	EDA-2 Perv	1,582.57	12.150	0.44
Flow (In)	EO-2	2,038.53	12.150	0.55

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: EO-2
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

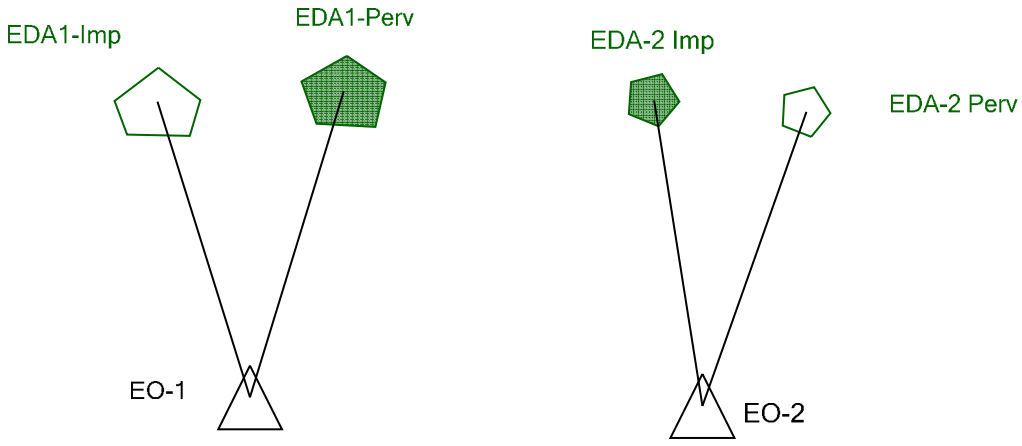
Summary for Hydrograph Addition at 'EO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2 Imp
<Catchment to Outflow Node>	EDA-2 Perv

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-2 Imp	631.24	12.150	0.15
Flow (From)	EDA-2 Perv	2,406.41	12.150	0.65
Flow (In)	EO-2	3,037.65	12.150	0.80

PRE-DEVELOPED PROJECTED RAINFALL



CN Area Collection - EDA1-Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Vehicular	98.000	0.080	0.00	0.00

CN Area Collection - EDA1-Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
open space	80.000	4.210	0.00	0.00
dirt	89.000	0.160	0.00	0.00

CN Area Collection - EDA-2 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Vehicular	98.000	0.020	0.00	0.00

CN Area Collection - EDA-2 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
dirt	89.000	0.010	0.00	0.00
open space	80.000	0.090	0.00	0.00

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Pre-Developed Projected Rainfall

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
EDA1-Perv	2yr projected	2	31,079.00	12.150	7.17
EDA1-Perv	10yr projected	10	62,191.00	12.150	14.41
EDA1-Perv	25 yr projected	25	86,699.00	12.150	19.95
EDA1-Perv	100yr projected	100	146,921.00	12.150	33.12
EDA1-Imp	2yr projected	2	1,062.00	12.250	0.17
EDA1-Imp	10yr projected	10	1,715.00	12.250	0.27
EDA1-Imp	25 yr projected	25	2,200.00	12.250	0.35
EDA1-Imp	100yr projected	100	3,353.00	12.250	0.52
EDA-2 Imp	2yr projected	2	266.00	12.100	0.07
EDA-2 Imp	10yr projected	10	430.00	12.100	0.10
EDA-2 Imp	25 yr projected	25	552.00	12.100	0.13
EDA-2 Imp	100yr projected	100	841.00	12.100	0.20
EDA-2 Perv	2yr projected	2	741.00	12.150	0.21
EDA-2 Perv	10yr projected	10	1,463.00	12.150	0.41
EDA-2 Perv	25 yr projected	25	2,029.00	12.150	0.56
EDA-2 Perv	100yr projected	100	3,415.00	12.150	0.91

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
EO-1	2yr projected	2	32,141.00	12.150	7.32
EO-1	10yr projected	10	63,906.00	12.150	14.66
EO-1	25 yr projected	25	88,899.00	12.150	20.26
EO-1	100yr projected	100	150,274.00	12.150	33.59
EO-2	2yr projected	2	1,007.00	12.150	0.28
EO-2	10yr projected	10	1,893.00	12.150	0.51
EO-2	25 yr projected	25	2,580.00	12.150	0.69
EO-2	100yr projected	100	4,256.00	12.150	1.11

Pre-Developed Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA1-Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.015 ft/ft
2 Year 24 Hour Depth	3.87 in
Average Velocity	0.16 ft/s
Segment Time of Concentration	0.169 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	645.00 ft
Is Paved?	True
Slope	0.006 ft/ft
Average Velocity	1.63 ft/s
Segment Time of Concentration	0.110 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.279 hours

Pre-Developed Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA1-Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Pre-Developed Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA1-Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.022 ft/ft
2 Year 24 Hour Depth	3.87 in
Average Velocity	0.19 ft/s
Segment Time of Concentration	0.143 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	166.00 ft
Is Paved?	False
Slope	0.022 ft/ft
Average Velocity	2.39 ft/s
Segment Time of Concentration	0.019 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.162 hours

Pre-Developed Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA1-Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Pre-Developed Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-2 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	40.00 ft
Manning's n	0.150
Slope	0.021 ft/ft
2 Year 24 Hour Depth	3.87 in
Average Velocity	0.16 ft/s
Segment Time of Concentration	0.070 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	217.00 ft
Is Paved?	True
Slope	0.012 ft/ft
Average Velocity	2.23 ft/s
Segment Time of Concentration	0.027 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.097 hours

Pre-Developed Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-2 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Pre-Developed Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-2 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	40.00 ft
Manning's n	0.150
Slope	0.021 ft/ft
2 Year 24 Hour Depth	3.87 in
Average Velocity	0.16 ft/s
Segment Time of Concentration	0.070 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	217.00 ft
Is Paved?	True
Slope	0.012 ft/ft
Average Velocity	2.23 ft/s
Segment Time of Concentration	0.027 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.097 hours

Pre-Developed Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-2 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	24.000 hours
Depth	3.91 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	0.080 acres
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.241 hours
Flow (Peak, Computed)	0.17 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.17 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.080 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.68 in
Runoff Volume (Pervious)	1,067.31 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,062.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.279 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.19 ft³/s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.637 hours
Total unit time, Tb	1.823 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	24.000 hours
Depth	6.17 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	0.080 acres

Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.241 hours
Flow (Peak, Computed)	0.27 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.27 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.080 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.93 in
Runoff Volume (Pervious)	1,722.56 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,715.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.279 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.19 ft³/s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.637 hours
Total unit time, Tb	1.823 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	24.000 hours
Depth	7.85 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	0.080 acres
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.241 hours
Flow (Peak, Computed)	0.35 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.35 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.080 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.61 in
Runoff Volume (Pervious)	2,210.03 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,200.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.279 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.19 ft³/s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.637 hours
Total unit time, Tb	1.823 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	24.000 hours
Depth	11.84 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	0.080 acres
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.241 hours
Flow (Peak, Computed)	0.53 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.52 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.080 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	11.60 in
Runoff Volume (Pervious)	3,368.23 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,353.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.279 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.19 ft³/s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.637 hours
Total unit time, Tb	1.823 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	24.000 hours
Depth	3.91 in
Time of Concentration (Composite)	0.162 hours
Area (User Defined)	4.370 acres
Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.176 hours
Flow (Peak, Computed)	7.24 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	7.17 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	4.370 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.97 in
Runoff Volume (Pervious)	31,211.12 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	31,079.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.162 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	17.81 ft³/s
Unit peak time, Tp	0.108 hours
Unit receding limb, Tr	0.952 hours
Total unit time, Tb	1.060 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	24.000 hours
Depth	6.17 in
Time of Concentration (Composite)	0.162 hours
Area (User Defined)	4.370 acres

Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.155 hours
Flow (Peak, Computed)	14.51 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	14.41 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	4.370 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.93 in
Runoff Volume (Pervious)	62,421.19 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	62,191.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.162 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	17.81 ft³/s
Unit peak time, Tp	0.108 hours
Unit receding limb, Tr	0.952 hours
Total unit time, Tb	1.060 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	24.000 hours
Depth	7.85 in
Time of Concentration (Composite)	0.162 hours
Area (User Defined)	4.370 acres

Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.155 hours
Flow (Peak, Computed)	20.07 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	19.95 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	4.370 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.48 in
Runoff Volume (Pervious)	87,001.44 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	86,699.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.162 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	17.81 ft³/s
Unit peak time, Tp	0.108 hours
Unit receding limb, Tr	0.952 hours
Total unit time, Tb	1.060 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	24.000 hours
Depth	11.84 in
Time of Concentration (Composite)	0.162 hours
Area (User Defined)	4.370 acres

Computational Time Increment	0.022 hours
Time to Peak (Computed)	12.155 hours
Flow (Peak, Computed)	33.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	33.12 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	4.370 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	9.29 in
Runoff Volume (Pervious)	147,393.41 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	146,921.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.162 hours
Computational Time Increment	0.022 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA1-Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	17.81 ft³/s
Unit peak time, Tp	0.108 hours
Unit receding limb, Tr	0.952 hours
Total unit time, Tb	1.060 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	24.000 hours
Depth	3.91 in
Time of Concentration (Composite)	0.097 hours
Area (User Defined)	0.020 acres
Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	0.07 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.07 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.020 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.68 in
Runoff Volume (Pervious)	266.83 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	266.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.097 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.14 ft³/s
Unit peak time, Tp	0.065 hours
Unit receding limb, Tr	0.569 hours
Total unit time, Tb	0.634 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	24.000 hours
Depth	6.17 in
Time of Concentration (Composite)	0.097 hours
Area (User Defined)	0.020 acres

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	0.11 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.10 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.020 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.93 in
Runoff Volume (Pervious)	430.64 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	430.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.097 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.14 ft³/s
Unit peak time, Tp	0.065 hours
Unit receding limb, Tr	0.569 hours
Total unit time, Tb	0.634 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	24.000 hours
Depth	7.85 in
Time of Concentration (Composite)	0.097 hours
Area (User Defined)	0.020 acres

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	0.14 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.13 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.020 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.61 in
Runoff Volume (Pervious)	552.51 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	552.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.097 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.14 ft³/s
Unit peak time, Tp	0.065 hours
Unit receding limb, Tr	0.569 hours
Total unit time, Tb	0.634 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	24.000 hours
Depth	11.84 in
Time of Concentration (Composite)	0.097 hours
Area (User Defined)	0.020 acres
Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	0.21 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.20 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.020 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	11.60 in
Runoff Volume (Pervious)	842.06 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	841.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.097 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.14 ft³/s
Unit peak time, Tp	0.065 hours
Unit receding limb, Tr	0.569 hours
Total unit time, Tb	0.634 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	24.000 hours
Depth	3.91 in
Time of Concentration (Composite)	0.097 hours
Area (User Defined)	0.100 acres
Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	0.22 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.21 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.05 in
Runoff Volume (Pervious)	742.72 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	741.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.097 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.68 ft³/s
Unit peak time, Tp	0.065 hours
Unit receding limb, Tr	0.569 hours
Total unit time, Tb	0.634 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	24.000 hours
Depth	6.17 in
Time of Concentration (Composite)	0.097 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	0.42 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.41 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.04 in
Runoff Volume (Pervious)	1,466.15 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,463.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.097 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.68 ft³/s
Unit peak time, Tp	0.065 hours
Unit receding limb, Tr	0.569 hours
Total unit time, Tb	0.634 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	24.000 hours
Depth	7.85 in
Time of Concentration (Composite)	0.097 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	0.58 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.56 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.60 in
Runoff Volume (Pervious)	2,033.12 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,029.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.097 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.68 ft³/s
Unit peak time, Tp	0.065 hours
Unit receding limb, Tr	0.569 hours
Total unit time, Tb	0.634 hours

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	24.000 hours
Depth	11.84 in
Time of Concentration (Composite)	0.097 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.013 hours
Time to Peak (Computed)	12.123 hours
Flow (Peak, Computed)	0.95 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.91 ft³/s

Drainage Area	
SCS CN (Composite)	81.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	2.35 in
Maximum Retention (Pervious, 20 percent)	0.47 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	9.43 in
Runoff Volume (Pervious)	3,421.75 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,415.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.097 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Developed Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-2 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.68 ft³/s
Unit peak time, Tp	0.065 hours
Unit receding limb, Tr	0.569 hours
Total unit time, Tb	0.634 hours

Pre-Developed Projected Rainfall

Subsection: Addition Summary
Label: EO-1
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Summary for Hydrograph Addition at 'EO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA1-Imp
<Catchment to Outflow Node>	EDA1-Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA1-Imp	1,062.40	12.250	0.17
Flow (From)	EDA1-Perv	31,079.06	12.150	7.17
Flow (In)	EO-1	32,141.46	12.150	7.32

Pre-Developed Projected Rainfall

Subsection: Addition Summary
Label: EO-1
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Summary for Hydrograph Addition at 'EO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA1-Imp
<Catchment to Outflow Node>	EDA1-Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA1-Imp	1,714.79	12.250	0.27
Flow (From)	EDA1-Perv	62,190.82	12.150	14.41
Flow (In)	EO-1	63,905.61	12.150	14.66

Pre-Developed Projected Rainfall

Subsection: Addition Summary
Label: EO-1
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Summary for Hydrograph Addition at 'EO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA1-Imp
<Catchment to Outflow Node>	EDA1-Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA1-Imp	2,200.15	12.250	0.35
Flow (From)	EDA1-Perv	86,698.70	12.150	19.95
Flow (In)	EO-1	88,898.85	12.150	20.26

Pre-Developed Projected Rainfall

Subsection: Addition Summary
Label: EO-1
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Summary for Hydrograph Addition at 'EO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA1-Imp
<Catchment to Outflow Node>	EDA1-Perv

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA1-Imp	3,353.31	12.250	0.52
Flow (From)	EDA1-Perv	146,920.85	12.150	33.12
Flow (In)	EO-1	150,274.16	12.150	33.59

Pre-Developed Projected Rainfall

Subsection: Addition Summary
Label: EO-2
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Summary for Hydrograph Addition at 'EO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2 Imp
<Catchment to Outflow Node>	EDA-2 Perv

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-2 Imp	266.38	12.100	0.07
Flow (From)	EDA-2 Perv	740.83	12.150	0.21
Flow (In)	EO-2	1,007.21	12.150	0.28

Pre-Developed Projected Rainfall

Subsection: Addition Summary
Label: EO-2
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Summary for Hydrograph Addition at 'EO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2 Imp
<Catchment to Outflow Node>	EDA-2 Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-2 Imp	429.93	12.100	0.10
Flow (From)	EDA-2 Perv	1,462.90	12.150	0.41
Flow (In)	EO-2	1,892.82	12.150	0.51

Pre-Developed Projected Rainfall

Subsection: Addition Summary
Label: EO-2
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Summary for Hydrograph Addition at 'EO-2'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2 Imp
<Catchment to Outflow Node>	EDA-2 Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-2 Imp	551.60	12.100	0.13
Flow (From)	EDA-2 Perv	2,028.85	12.150	0.56
Flow (In)	EO-2	2,580.45	12.150	0.69

Pre-Developed Projected Rainfall

Subsection: Addition Summary
Label: EO-2
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Summary for Hydrograph Addition at 'EO-2'

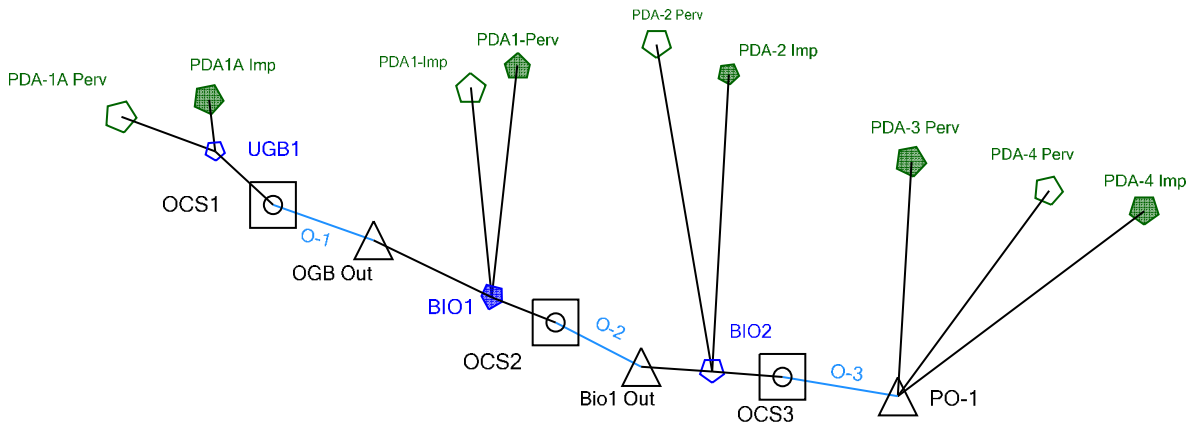
Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-2 Imp
<Catchment to Outflow Node>	EDA-2 Perv

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	EDA-2 Imp	840.69	12.100	0.20
Flow (From)	EDA-2 Perv	3,415.12	12.150	0.91
Flow (In)	EO-2	4,255.81	12.150	1.11

Appendix B

POST DEVELOPED CURRENT RAINFALL



CN Area Collection - PDA-1A Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
open space	84.000	0.150	0.00	0.00

CN Area Collection - PDA1A Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Field	98.000	2.010	0.00	0.00
Impervious Building	98.000	0.030	0.00	0.00
Impervious Bit	98.000	0.310	0.00	0.00

CN Area Collection - PDA1-Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Non-Vehicular	98.000	0.170	0.00	0.00
Impervious Vehicular	98.000	0.280	0.00	0.00

CN Area Collection - PDA1-Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
open space	84.000	0.350	0.00	0.00

CN Area Collection - PDA-2 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open Space	84.000	0.240	0.00	0.00

CN Area Collection - PDA-2 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Vehicular	98.000	0.450	0.00	0.00
Impervious Non-vehicular	98.000	0.280	0.00	0.00

CN Area Collection - PDA-3 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
open space	84.000	0.100	0.00	0.00

CN Area Collection - PDA-4 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
open space	84.000	0.150	0.00	0.00

CN Area Collection - PDA-4 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious non-vehicular	98.000	0.030	0.00	0.00

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA1A Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.005 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.82 ft/s
Segment Time of Concentration	0.034 hours

Segment #2: TR-55 Channel Flow	
Flow Area	3.1 ft²
Hydraulic Length	471.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	6.30 ft
Average Velocity	4.38 ft/s
Segment Time of Concentration	0.030 hours

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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA1A Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-1A Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	84.00 ft
Manning's n	0.150
Slope	0.014 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.15 ft/s
Segment Time of Concentration	0.159 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.159 hours

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-1A Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA1-Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	42.00 ft
Manning's n	0.150
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.104 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	73.00 ft
Is Paved?	True
Slope	0.010 ft/ft
Average Velocity	2.03 ft/s
Segment Time of Concentration	0.010 hours

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	142.00 ft
Is Paved?	True
Slope	0.015 ft/ft
Average Velocity	2.49 ft/s
Segment Time of Concentration	0.016 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.130 hours

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA1-Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA1-Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	42.00 ft
Manning's n	0.150
Slope	0.018 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.14 ft/s
Segment Time of Concentration	0.082 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	73.00 ft
Is Paved?	True
Slope	0.010 ft/ft
Average Velocity	2.03 ft/s
Segment Time of Concentration	0.010 hours

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	142.00 ft
Is Paved?	True
Slope	0.015 ft/ft
Average Velocity	2.49 ft/s
Segment Time of Concentration	0.016 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.108 hours

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA1-Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc =
Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-2 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	69.00 ft
Manning's n	0.150
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.155 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	212.00 ft
Is Paved?	True
Slope	0.015 ft/ft
Average Velocity	2.49 ft/s
Segment Time of Concentration	0.024 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.8 ft²
Hydraulic Length	81.00 ft
Manning's n	0.013
Slope	0.010 ft/ft
Wetted Perimeter	4.70 ft
Average Velocity	6.04 ft/s
Segment Time of Concentration	0.004 hours

Segment #4: TR-55 Channel Flow	
Flow Area	3.1 ft²
Hydraulic Length	36.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	6.30 ft
Average Velocity	5.05 ft/s
Segment Time of Concentration	0.002 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.184 hours

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-2 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-2 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	69.00 ft
Manning's n	0.150
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.155 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	212.00 ft
Is Paved?	True
Slope	0.015 ft/ft
Average Velocity	2.49 ft/s
Segment Time of Concentration	0.024 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.8 ft²
Hydraulic Length	81.00 ft
Manning's n	0.013
Slope	0.010 ft/ft
Wetted Perimeter	4.70 ft
Average Velocity	6.04 ft/s
Segment Time of Concentration	0.004 hours

Segment #4: TR-55 Channel Flow	
Flow Area	3.1 ft²
Hydraulic Length	36.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	6.30 ft
Average Velocity	5.05 ft/s
Segment Time of Concentration	0.002 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.184 hours

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-2 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-3 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	47.00 ft
Manning's n	0.011
Slope	0.030 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	1.44 ft/s
Segment Time of Concentration	0.009 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	153.00 ft
Is Paved?	True
Slope	0.009 ft/ft
Average Velocity	1.91 ft/s
Segment Time of Concentration	0.022 hours

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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-3 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-4 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.011
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.78 ft/s
Segment Time of Concentration	0.007 hours

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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-4 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-4 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.150
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.41 in
Average Velocity	0.10 ft/s
Segment Time of Concentration	0.058 hours

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

Post Developed Tc Calculations

Subsection: Time of Concentration Calculations
Label: PDA-4 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
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

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	48.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	2.350 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	7.39 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	7.18 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	2.350 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.18 in
Runoff Volume (Pervious)	27,099.32 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	27,099.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.64 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	48.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	2.350 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	11.48 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	11.15 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	2.350 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.02 in
Runoff Volume (Pervious)	42,846.83 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	42,847.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.64 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	48.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	2.350 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	14.27 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	13.87 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	2.350 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.29 in
Runoff Volume (Pervious)	53,668.14 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	53,668.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.64 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	48.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	2.350 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	19.59 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	19.04 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	2.350 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.71 in
Runoff Volume (Pervious)	74,297.86 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	74,298.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.64 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	48.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.159 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.167 hours
Flow (Peak, Computed)	0.24 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.24 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.86 in
Runoff Volume (Pervious)	1,012.58 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,013.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.159 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.62 ft³/s
Unit peak time, Tp	0.106 hours
Unit receding limb, Tr	0.931 hours
Total unit time, Tb	1.037 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	48.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.159 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.167 hours
Flow (Peak, Computed)	0.45 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.45 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.51 in
Runoff Volume (Pervious)	1,910.71 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,911.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.159 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.62 ft³/s
Unit peak time, Tp	0.106 hours
Unit receding limb, Tr	0.931 hours
Total unit time, Tb	1.037 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	48.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.159 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.167 hours
Flow (Peak, Computed)	0.59 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.59 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.69 in
Runoff Volume (Pervious)	2,556.30 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,556.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.159 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.62 ft³/s
Unit peak time, Tp	0.106 hours
Unit receding limb, Tr	0.931 hours
Total unit time, Tb	1.037 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	48.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.159 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.167 hours
Flow (Peak, Computed)	0.87 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.87 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.01 in
Runoff Volume (Pervious)	3,817.32 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,817.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.159 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.62 ft³/s
Unit peak time, Tp	0.106 hours
Unit receding limb, Tr	0.931 hours
Total unit time, Tb	1.037 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	48.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.130 hours
Area (User Defined)	0.450 acres

Computational Time Increment	0.017 hours
Time to Peak (Computed)	12.142 hours
Flow (Peak, Computed)	1.20 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.19 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.450 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.18 in
Runoff Volume (Pervious)	5,189.23 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5,189.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.130 hours
Computational Time Increment	0.017 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.29 ft³/s
Unit peak time, Tp	0.087 hours
Unit receding limb, Tr	0.763 hours
Total unit time, Tb	0.850 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	48.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.130 hours
Area (User Defined)	0.450 acres

Computational Time Increment	0.017 hours
Time to Peak (Computed)	12.142 hours
Flow (Peak, Computed)	1.86 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.85 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.450 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.02 in
Runoff Volume (Pervious)	8,204.71 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,204.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.130 hours
Computational Time Increment	0.017 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.29 ft³/s
Unit peak time, Tp	0.087 hours
Unit receding limb, Tr	0.763 hours
Total unit time, Tb	0.850 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	48.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.130 hours
Area (User Defined)	0.450 acres

Computational Time Increment	0.017 hours
Time to Peak (Computed)	12.142 hours
Flow (Peak, Computed)	2.32 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.30 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.450 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.29 in
Runoff Volume (Pervious)	10,276.88 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	10,276.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.130 hours
Computational Time Increment	0.017 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.29 ft³/s
Unit peak time, Tp	0.087 hours
Unit receding limb, Tr	0.763 hours
Total unit time, Tb	0.850 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	48.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.130 hours
Area (User Defined)	0.450 acres

Computational Time Increment	0.017 hours
Time to Peak (Computed)	12.142 hours
Flow (Peak, Computed)	3.18 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	3.16 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.450 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.71 in
Runoff Volume (Pervious)	14,227.25 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	14,226.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.130 hours
Computational Time Increment	0.017 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.29 ft³/s
Unit peak time, Tp	0.087 hours
Unit receding limb, Tr	0.763 hours
Total unit time, Tb	0.850 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	48.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.108 hours
Area (User Defined)	0.350 acres

Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.138 hours
Flow (Peak, Computed)	0.66 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.65 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.350 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.86 in
Runoff Volume (Pervious)	2,362.68 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,363.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.108 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.14 ft³/s
Unit peak time, Tp	0.072 hours
Unit receding limb, Tr	0.635 hours
Total unit time, Tb	0.707 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	48.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.108 hours
Area (User Defined)	0.350 acres

Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.138 hours
Flow (Peak, Computed)	1.23 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.21 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.350 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.51 in
Runoff Volume (Pervious)	4,458.32 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,458.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.108 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.14 ft³/s
Unit peak time, Tp	0.072 hours
Unit receding limb, Tr	0.635 hours
Total unit time, Tb	0.707 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	48.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.108 hours
Area (User Defined)	0.350 acres

Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.138 hours
Flow (Peak, Computed)	1.63 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.60 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.350 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.69 in
Runoff Volume (Pervious)	5,964.70 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5,964.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.108 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.14 ft³/s
Unit peak time, Tp	0.072 hours
Unit receding limb, Tr	0.635 hours
Total unit time, Tb	0.707 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	48.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.108 hours
Area (User Defined)	0.350 acres

Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.124 hours
Flow (Peak, Computed)	2.38 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.33 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.350 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.01 in
Runoff Volume (Pervious)	8,907.07 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,907.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.108 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.14 ft³/s
Unit peak time, Tp	0.072 hours
Unit receding limb, Tr	0.635 hours
Total unit time, Tb	0.707 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	48.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	0.730 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	1.67 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.65 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.730 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.18 in
Runoff Volume (Pervious)	8,418.09 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,419.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.62 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.082 hours
Total unit time, Tb	1.205 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	48.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	0.730 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	2.60 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.57 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.730 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.02 in
Runoff Volume (Pervious)	13,309.87 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	13,312.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.62 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.082 hours
Total unit time, Tb	1.205 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	48.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	0.730 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	3.23 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	3.19 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.730 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.29 in
Runoff Volume (Pervious)	16,671.38 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	16,674.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.62 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.082 hours
Total unit time, Tb	1.205 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	48.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	0.730 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	4.44 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	4.39 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.730 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.71 in
Runoff Volume (Pervious)	23,079.76 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	23,083.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.62 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.082 hours
Total unit time, Tb	1.205 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	48.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	0.36 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.35 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.86 in
Runoff Volume (Pervious)	1,620.12 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,620.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.86 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.082 hours
Total unit time, Tb	1.205 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	48.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	0.67 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.66 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.51 in
Runoff Volume (Pervious)	3,057.13 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,058.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.86 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.082 hours
Total unit time, Tb	1.205 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	48.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	0.89 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.87 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.69 in
Runoff Volume (Pervious)	4,090.08 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,091.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.86 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.082 hours
Total unit time, Tb	1.205 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	48.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	1.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.28 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.01 in
Runoff Volume (Pervious)	6,107.71 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	6,109.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.86 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.082 hours
Total unit time, Tb	1.205 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	48.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.21 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.20 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.86 in
Runoff Volume (Pervious)	675.05 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	675.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.79 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	48.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.39 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.38 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.51 in
Runoff Volume (Pervious)	1,273.81 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,274.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.79 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	48.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.52 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.50 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.69 in
Runoff Volume (Pervious)	1,704.20 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,704.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.79 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	48.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.75 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.73 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.01 in
Runoff Volume (Pervious)	2,544.88 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,545.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.79 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	48.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.030 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.09 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.09 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.030 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.18 in
Runoff Volume (Pervious)	345.95 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	346.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.24 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	48.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.030 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.15 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.14 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.030 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.02 in
Runoff Volume (Pervious)	546.98 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	547.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.24 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	48.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.030 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.18 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.18 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.030 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.29 in
Runoff Volume (Pervious)	685.13 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	685.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.24 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	48.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.030 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.25 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.24 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.030 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.71 in
Runoff Volume (Pervious)	948.48 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	948.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.24 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Storm Event	2yr Type C
Return Event	2 years
Duration	48.000 hours
Depth	3.41 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.30 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.86 in
Runoff Volume (Pervious)	1,012.58 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,013.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Storm Event	10yr Type C
Return Event	10 years
Duration	48.000 hours
Depth	5.26 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.59 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.56 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.51 in
Runoff Volume (Pervious)	1,910.71 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,911.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Storm Event	25yr Type C
Return Event	25 years
Duration	48.000 hours
Depth	6.53 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.77 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.75 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.69 in
Runoff Volume (Pervious)	2,556.30 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,556.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storm Event	100yr Type C
Return Event	100 years
Duration	48.000 hours
Depth	8.95 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	1.13 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.09 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.01 in
Runoff Volume (Pervious)	3,817.32 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,817.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

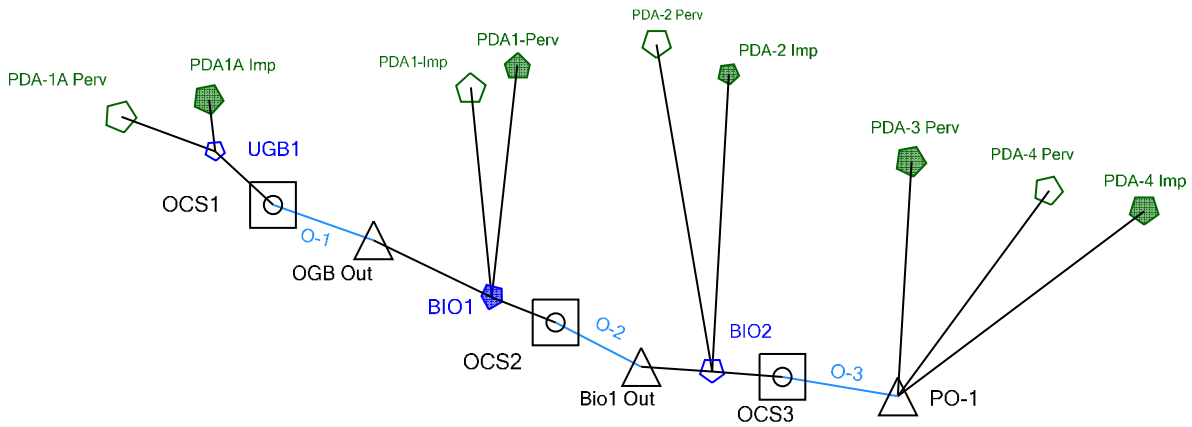
Post Developed Current Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

POST DEVELOPED PROJECTED RAINFALL



Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imper
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	48.000 hours
Depth	3.87 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	2.350 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	8.41 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	8.17 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	2.350 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.64 in
Runoff Volume (Pervious)	31,012.02 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	31,012.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imper
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.64 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imper
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	48.000 hours
Depth	5.98 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	2.350 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	13.06 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	12.69 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	2.350 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.74 in
Runoff Volume (Pervious)	48,981.12 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	48,981.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imper
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.64 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imper
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	48.000 hours
Depth	7.70 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	2.350 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	16.85 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	16.37 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	2.350 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.46 in
Runoff Volume (Pervious)	63,640.93 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	63,641.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imper
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.64 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imper
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	48.000 hours
Depth	11.12 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	2.350 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	24.36 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	23.67 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	2.350 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	10.88 in
Runoff Volume (Pervious)	92,801.55 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	92,801.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1A Imper
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.64 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	48.000 hours
Depth	3.87 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.156 hours
Flow (Peak, Computed)	0.30 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.30 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.26 in
Runoff Volume (Pervious)	1,228.90 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,229.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.149 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.67 ft³/s
Unit peak time, Tp	0.099 hours
Unit receding limb, Tr	0.874 hours
Total unit time, Tb	0.973 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	48.000 hours
Depth	5.98 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.156 hours
Flow (Peak, Computed)	0.55 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.55 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.18 in
Runoff Volume (Pervious)	2,274.81 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,275.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.149 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.67 ft³/s
Unit peak time, Tp	0.099 hours
Unit receding limb, Tr	0.874 hours
Total unit time, Tb	0.973 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	48.000 hours
Depth	7.70 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.156 hours
Flow (Peak, Computed)	0.75 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.75 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.81 in
Runoff Volume (Pervious)	3,162.25 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,162.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.149 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.67 ft³/s
Unit peak time, Tp	0.099 hours
Unit receding limb, Tr	0.874 hours
Total unit time, Tb	0.973 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	48.000 hours
Depth	11.12 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.156 hours
Flow (Peak, Computed)	1.15 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.15 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	9.12 in
Runoff Volume (Pervious)	4,966.51 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,967.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.149 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-1A Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.67 ft³/s
Unit peak time, Tp	0.099 hours
Unit receding limb, Tr	0.874 hours
Total unit time, Tb	0.973 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	48.000 hours
Depth	3.87 in
Time of Concentration (Composite)	0.124 hours
Area (User Defined)	0.450 acres

Computational Time Increment	0.016 hours
Time to Peak (Computed)	12.139 hours
Flow (Peak, Computed)	1.39 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.38 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.450 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.64 in
Runoff Volume (Pervious)	5,938.47 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5,938.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.124 hours
Computational Time Increment	0.016 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.40 ft³/s
Unit peak time, Tp	0.082 hours
Unit receding limb, Tr	0.726 hours
Total unit time, Tb	0.808 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	48.000 hours
Depth	5.98 in
Time of Concentration (Composite)	0.124 hours
Area (User Defined)	0.450 acres

Computational Time Increment	0.016 hours
Time to Peak (Computed)	12.139 hours
Flow (Peak, Computed)	2.16 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.14 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.450 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.74 in
Runoff Volume (Pervious)	9,379.36 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	9,379.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.124 hours
Computational Time Increment	0.016 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.40 ft³/s
Unit peak time, Tp	0.082 hours
Unit receding limb, Tr	0.726 hours
Total unit time, Tb	0.808 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	48.000 hours
Depth	7.70 in
Time of Concentration (Composite)	0.124 hours
Area (User Defined)	0.450 acres

Computational Time Increment	0.016 hours
Time to Peak (Computed)	12.139 hours
Flow (Peak, Computed)	2.79 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.76 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.450 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.46 in
Runoff Volume (Pervious)	12,186.56 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	12,186.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.124 hours
Computational Time Increment	0.016 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.40 ft³/s
Unit peak time, Tp	0.082 hours
Unit receding limb, Tr	0.726 hours
Total unit time, Tb	0.808 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	48.000 hours
Depth	11.12 in
Time of Concentration (Composite)	0.124 hours
Area (User Defined)	0.450 acres

Computational Time Increment	0.016 hours
Time to Peak (Computed)	12.139 hours
Flow (Peak, Computed)	4.04 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	3.99 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.450 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	10.88 in
Runoff Volume (Pervious)	17,770.51 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	17,770.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.124 hours
Computational Time Increment	0.016 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.40 ft³/s
Unit peak time, Tp	0.082 hours
Unit receding limb, Tr	0.726 hours
Total unit time, Tb	0.808 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	48.000 hours
Depth	3.87 in
Time of Concentration (Composite)	0.103 hours
Area (User Defined)	0.350 acres

Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.136 hours
Flow (Peak, Computed)	0.82 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.80 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.350 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.26 in
Runoff Volume (Pervious)	2,867.43 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,868.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.103 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.24 ft³/s
Unit peak time, Tp	0.069 hours
Unit receding limb, Tr	0.605 hours
Total unit time, Tb	0.674 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	48.000 hours
Depth	5.98 in
Time of Concentration (Composite)	0.103 hours
Area (User Defined)	0.350 acres

Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.136 hours
Flow (Peak, Computed)	1.48 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.45 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.350 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.18 in
Runoff Volume (Pervious)	5,307.88 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5,308.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.103 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.24 ft³/s
Unit peak time, Tp	0.069 hours
Unit receding limb, Tr	0.605 hours
Total unit time, Tb	0.674 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	48.000 hours
Depth	7.70 in
Time of Concentration (Composite)	0.103 hours
Area (User Defined)	0.350 acres

Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	2.03 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.98 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.350 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.81 in
Runoff Volume (Pervious)	7,378.59 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	7,379.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.103 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.24 ft³/s
Unit peak time, Tp	0.069 hours
Unit receding limb, Tr	0.605 hours
Total unit time, Tb	0.674 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	48.000 hours
Depth	11.12 in
Time of Concentration (Composite)	0.103 hours
Area (User Defined)	0.350 acres

Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	3.12 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	3.02 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.350 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	9.12 in
Runoff Volume (Pervious)	11,588.53 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	11,589.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.103 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA1-Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.24 ft³/s
Unit peak time, Tp	0.069 hours
Unit receding limb, Tr	0.605 hours
Total unit time, Tb	0.674 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	48.000 hours
Depth	3.87 in
Time of Concentration (Composite)	0.175 hours
Area (User Defined)	0.730 acres

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.154 hours
Flow (Peak, Computed)	1.94 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.93 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.730 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.64 in
Runoff Volume (Pervious)	9,633.52 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	9,634.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.175 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.76 ft³/s
Unit peak time, Tp	0.117 hours
Unit receding limb, Tr	1.026 hours
Total unit time, Tb	1.143 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	48.000 hours
Depth	5.98 in
Time of Concentration (Composite)	0.175 hours
Area (User Defined)	0.730 acres

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.154 hours
Flow (Peak, Computed)	3.02 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	3.00 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.730 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.74 in
Runoff Volume (Pervious)	15,215.41 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	15,216.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.175 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.76 ft³/s
Unit peak time, Tp	0.117 hours
Unit receding limb, Tr	1.026 hours
Total unit time, Tb	1.143 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	48.000 hours
Depth	7.70 in
Time of Concentration (Composite)	0.175 hours
Area (User Defined)	0.730 acres

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.154 hours
Flow (Peak, Computed)	3.89 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	3.86 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.730 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.46 in
Runoff Volume (Pervious)	19,769.31 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	19,771.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.175 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.76 ft³/s
Unit peak time, Tp	0.117 hours
Unit receding limb, Tr	1.026 hours
Total unit time, Tb	1.143 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	48.000 hours
Depth	11.12 in
Time of Concentration (Composite)	0.175 hours
Area (User Defined)	0.730 acres

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.154 hours
Flow (Peak, Computed)	5.63 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	5.59 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.730 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	10.88 in
Runoff Volume (Pervious)	28,827.71 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	28,830.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.175 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.76 ft³/s
Unit peak time, Tp	0.117 hours
Unit receding limb, Tr	1.026 hours
Total unit time, Tb	1.143 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	48.000 hours
Depth	3.87 in
Time of Concentration (Composite)	0.175 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.178 hours
Flow (Peak, Computed)	0.44 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.43 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.26 in
Runoff Volume (Pervious)	1,966.24 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,966.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.175 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.91 ft³/s
Unit peak time, Tp	0.117 hours
Unit receding limb, Tr	1.026 hours
Total unit time, Tb	1.143 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	48.000 hours
Depth	5.98 in
Time of Concentration (Composite)	0.175 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.178 hours
Flow (Peak, Computed)	0.81 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.80 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.18 in
Runoff Volume (Pervious)	3,639.69 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,640.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.175 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.91 ft³/s
Unit peak time, Tp	0.117 hours
Unit receding limb, Tr	1.026 hours
Total unit time, Tb	1.143 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	48.000 hours
Depth	7.70 in
Time of Concentration (Composite)	0.175 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.178 hours
Flow (Peak, Computed)	1.11 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.10 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.81 in
Runoff Volume (Pervious)	5,059.61 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5,060.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.175 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.91 ft³/s
Unit peak time, Tp	0.117 hours
Unit receding limb, Tr	1.026 hours
Total unit time, Tb	1.143 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	48.000 hours
Depth	11.12 in
Time of Concentration (Composite)	0.175 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.023 hours
Time to Peak (Computed)	12.178 hours
Flow (Peak, Computed)	1.71 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.69 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	9.12 in
Runoff Volume (Pervious)	7,946.42 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	7,947.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.175 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.91 ft³/s
Unit peak time, Tp	0.117 hours
Unit receding limb, Tr	1.026 hours
Total unit time, Tb	1.143 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	48.000 hours
Depth	3.87 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.25 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.24 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.26 in
Runoff Volume (Pervious)	819.27 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	819.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.79 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	48.000 hours
Depth	5.98 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.46 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.44 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.18 in
Runoff Volume (Pervious)	1,516.54 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,516.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.79 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	48.000 hours
Depth	7.70 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.63 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.61 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.81 in
Runoff Volume (Pervious)	2,108.17 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,108.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.79 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	48.000 hours
Depth	11.12 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.96 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.93 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	9.12 in
Runoff Volume (Pervious)	3,311.01 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,311.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-3 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.79 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	48.000 hours
Depth	3.87 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.030 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.11 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.10 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.030 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.64 in
Runoff Volume (Pervious)	395.90 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	396.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.24 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	48.000 hours
Depth	5.98 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.030 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.17 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.16 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.030 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.74 in
Runoff Volume (Pervious)	625.29 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	625.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.24 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	48.000 hours
Depth	7.70 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.030 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.22 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.21 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.030 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.46 in
Runoff Volume (Pervious)	812.44 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	812.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.24 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	48.000 hours
Depth	11.12 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.030 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.30 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.030 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	10.88 in
Runoff Volume (Pervious)	1,184.70 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,185.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.24 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Storm Event	2yr C projected
Return Event	2 years
Duration	48.000 hours
Depth	3.87 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.38 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.36 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.26 in
Runoff Volume (Pervious)	1,228.90 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,229.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Storm Event	10yr C projected
Return Event	10 years
Duration	48.000 hours
Depth	5.98 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.69 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.67 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.18 in
Runoff Volume (Pervious)	2,274.81 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,275.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Storm Event	25yr C projected
Return Event	25 years
Duration	48.000 hours
Depth	7.70 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.95 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.91 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.81 in
Runoff Volume (Pervious)	3,162.25 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,162.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Storm Event	100yr C projected
Return Event	100 years
Duration	48.000 hours
Depth	11.12 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	1.45 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.40 ft³/s

Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	1.90 in
Maximum Retention (Pervious, 20 percent)	0.38 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	9.12 in
Runoff Volume (Pervious)	4,966.51 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,966.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Developed Projected Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.19 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.489 hours
Total unit time, Tb	0.544 hours

Appendix C

Basin Volumes

Subsection: Elevation-Area Volume Curve
Label: BIO1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
6.30	0.0	0.015	0.000	0.00	0.00
8.00	0.0	0.030	0.066	1,634.00	1,634.00
9.00	0.0	0.050	0.119	1,724.00	3,358.00
10.00	0.0	0.070	0.179	2,601.00	5,960.00

Basin Volumes

Subsection: Elevation-Area Volume Curve
Label: BIO2
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
5.70	0.0	0.050	0.000	0.00	0.00
7.00	0.0	0.081	0.195	3,674.00	3,674.00
8.00	0.0	0.110	0.285	4,144.00	7,818.00
9.00	0.0	0.140	0.374	5,432.00	13,250.00

Basin Volumes

Subsection: Storage Chamber System
Label: UGB1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storage Chamber			
ID	447	Notes	
Label	SC-800 Chamber		

Storage Chamber			
Effective Length	7.12 ft	Manufacturer	
Section Length Varies?	False	Default Spacing	0.50 ft

Depth-Incremental Volume Per Unit Length Curve

Depth (ft)	Incremental Volume Per Unit Length (ft³/ft)
0.08	0.31
0.17	0.31
0.25	0.31
0.33	0.30
0.42	0.30
0.50	0.30
0.58	0.29
0.67	0.29
0.75	0.28
0.83	0.28
0.92	0.28
1.00	0.27
1.08	0.27
1.17	0.26
1.25	0.25
1.33	0.25
1.42	0.24
1.50	0.24
1.58	0.23
1.67	0.22
1.75	0.21
1.83	0.20
1.92	0.19
2.00	0.18
2.08	0.17
2.17	0.16
2.25	0.14
2.33	0.13
2.42	0.10
2.50	0.07
2.58	0.04
2.67	0.03
2.75	0.01

Storage Chamber

Basin Volumes

Subsection: Storage Chamber System
Label: UGB1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Storage Chamber			
Storage Chamber Type	Incremental Volume Per Unit Length	Maximum Width	4.25 ft

Storage Chamber (Pond)	
Chamber System Invert	6.33 ft
Chamber System Rows	11
Chambers per Row	26
Chamber System Fill Void Space	40.00 %
Chamber System Row Spacing	6.0 in
Chamber System Side Fill	12.0 in
Chamber System Fill Cover Depth	6.0 in
Chamber System Fill Base Depth	6.0 in
Chamber System Fill Side Slope	1.000 H:V
Chamber System End Fill	12.0 in
Chamber System Includes Header?	True
Chamber System Header	SC-800 Chamber
Chambers In Header	9
Chamber System Header Distance	5.00 ft

Chamber System Header			
ID	447	Notes	
Label	SC-800 Chamber		

Storage Chamber			
Effective Length	7.12 ft	Manufacturer	
Section Length Varies?	False	Default Spacing	0.50 ft

Depth-Incremental Volume Per Unit Length Curve

Depth (ft)	Incremental Volume Per Unit Length (ft³/ft)
0.08	0.31
0.17	0.31
0.25	0.31
0.33	0.30
0.42	0.30
0.50	0.30

Basin Volumes

Subsection: Storage Chamber System
Label: UGB1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Depth-Incremental Volume Per Unit Length Curve

Depth (ft)	Incremental Volume Per Unit Length (ft^3/ft)
0.58	0.29
0.67	0.29
0.75	0.28
0.83	0.28
0.92	0.28
1.00	0.27
1.08	0.27
1.17	0.26
1.25	0.25
1.33	0.25
1.42	0.24
1.50	0.24
1.58	0.23
1.67	0.22
1.75	0.21
1.83	0.20
1.92	0.19
2.00	0.18
2.08	0.17
2.17	0.16
2.25	0.14
2.33	0.13
2.42	0.10
2.50	0.07
2.58	0.04
2.67	0.03
2.75	0.01

Storage Chamber			
Storage Chamber Type	Incremental Volume Per Unit Length	Maximum Width	4.25 ft

Table of Contents

Outlet Structure Data

Subsection: Outlet Input Data
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Requested Pond Water Surface Elevations	
Minimum (Headwater)	6.30 ft
Increment (Headwater)	0.25 ft
Maximum (Headwater)	10.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	TW	8.00	10.00
Inlet Box	Riser - 1	Forward	TW	9.25	10.00
Orifice-Circular	Orifice - 1	Forward	TW	7.30	10.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Outlet Structure Data

Subsection: Outlet Input Data
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	4
Elevation	7.30 ft
Orifice Diameter	5.0 in
Orifice Coefficient	0.600

Structure ID: Weir - 1 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	8.00 ft
Weir Length	3.50 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: Riser - 1 Structure Type: Inlet Box	
Number of Openings	1
Elevation	9.25 ft
Orifice Area	2.9 ft²
Orifice Coefficient	0.600
Weir Length	6.96 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	5.70	0.00	None Contributing
6.45	0.00	5.70	0.00	None Contributing
6.55	0.00	5.70	0.00	None Contributing
6.70	0.00	5.70	0.00	None Contributing
6.80	0.00	5.70	0.00	None Contributing
6.95	0.00	5.70	0.00	None Contributing
7.05	0.00	5.70	0.00	None Contributing
7.20	0.00	5.70	0.00	None Contributing
7.30	0.00	5.70	0.00	None Contributing
7.45	0.18	5.70	0.00	Orifice - 1
7.55	0.48	5.70	0.00	Orifice - 1
7.70	1.09	5.70	0.00	Orifice - 1
7.80	1.42	5.70	0.00	Orifice - 1
7.95	1.74	5.70	0.00	Orifice - 1
8.00	1.84	5.70	0.00	Weir - 1 + Orifice - 1
8.05	2.05	5.70	0.00	Weir - 1 + Orifice - 1
8.20	3.12	5.70	0.00	Weir - 1 + Orifice - 1
8.30	4.06	5.70	0.00	Weir - 1 + Orifice - 1
8.45	5.72	5.70	0.00	Weir - 1 + Orifice - 1
8.55	6.96	5.70	0.00	Weir - 1 + Orifice - 1
8.70	9.02	5.70	0.00	Weir - 1 + Orifice - 1
8.80	10.50	5.70	0.00	Weir - 1 + Orifice - 1
8.95	12.87	5.70	0.00	Weir - 1 + Orifice - 1
9.00	13.71	5.70	0.00	Weir - 1 + Orifice - 1
9.05	14.56	5.70	0.00	Weir - 1 + Orifice - 1
9.25	18.14	5.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.31	5.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.44	5.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.85	5.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.93	5.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	5.95	0.00	None Contributing
6.45	0.00	5.95	0.00	None Contributing
6.55	0.00	5.95	0.00	None Contributing
6.70	0.00	5.95	0.00	None Contributing
6.80	0.00	5.95	0.00	None Contributing
6.95	0.00	5.95	0.00	None Contributing
7.05	0.00	5.95	0.00	None Contributing
7.20	0.00	5.95	0.00	None Contributing
7.30	0.00	5.95	0.00	None Contributing
7.45	0.18	5.95	0.00	Orifice - 1
7.55	0.48	5.95	0.00	Orifice - 1
7.70	1.09	5.95	0.00	Orifice - 1
7.80	1.42	5.95	0.00	Orifice - 1
7.95	1.74	5.95	0.00	Orifice - 1
8.00	1.84	5.95	0.00	Weir - 1 + Orifice - 1
8.05	2.05	5.95	0.00	Weir - 1 + Orifice - 1
8.20	3.12	5.95	0.00	Weir - 1 + Orifice - 1
8.30	4.06	5.95	0.00	Weir - 1 + Orifice - 1
8.45	5.72	5.95	0.00	Weir - 1 + Orifice - 1
8.55	6.96	5.95	0.00	Weir - 1 + Orifice - 1
8.70	9.02	5.95	0.00	Weir - 1 + Orifice - 1
8.80	10.50	5.95	0.00	Weir - 1 + Orifice - 1
8.95	12.87	5.95	0.00	Weir - 1 + Orifice - 1
9.00	13.71	5.95	0.00	Weir - 1 + Orifice - 1
9.05	14.56	5.95	0.00	Weir - 1 + Orifice - 1
9.25	18.14	5.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.31	5.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.44	5.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.85	5.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.93	5.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	6.20	0.00	None Contributing
6.45	0.00	6.20	0.00	None Contributing
6.55	0.00	6.20	0.00	None Contributing
6.70	0.00	6.20	0.00	None Contributing
6.80	0.00	6.20	0.00	None Contributing
6.95	0.00	6.20	0.00	None Contributing
7.05	0.00	6.20	0.00	None Contributing
7.20	0.00	6.20	0.00	None Contributing
7.30	0.00	6.20	0.00	None Contributing
7.45	0.18	6.20	0.00	Orifice - 1
7.55	0.48	6.20	0.00	Orifice - 1
7.70	1.09	6.20	0.00	Orifice - 1
7.80	1.42	6.20	0.00	Orifice - 1
7.95	1.74	6.20	0.00	Orifice - 1
8.00	1.84	6.20	0.00	Weir - 1 + Orifice - 1
8.05	2.05	6.20	0.00	Weir - 1 + Orifice - 1
8.20	3.12	6.20	0.00	Weir - 1 + Orifice - 1
8.30	4.06	6.20	0.00	Weir - 1 + Orifice - 1
8.45	5.72	6.20	0.00	Weir - 1 + Orifice - 1
8.55	6.96	6.20	0.00	Weir - 1 + Orifice - 1
8.70	9.02	6.20	0.00	Weir - 1 + Orifice - 1
8.80	10.50	6.20	0.00	Weir - 1 + Orifice - 1
8.95	12.87	6.20	0.00	Weir - 1 + Orifice - 1
9.00	13.71	6.20	0.00	Weir - 1 + Orifice - 1
9.05	14.56	6.20	0.00	Weir - 1 + Orifice - 1
9.25	18.14	6.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.31	6.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.44	6.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.85	6.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.93	6.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	6.30	0.00	None Contributing
6.45	0.00	6.30	0.00	None Contributing
6.55	0.00	6.30	0.00	None Contributing
6.70	0.00	6.30	0.00	None Contributing
6.80	0.00	6.30	0.00	None Contributing
6.95	0.00	6.30	0.00	None Contributing
7.05	0.00	6.30	0.00	None Contributing
7.20	0.00	6.30	0.00	None Contributing
7.30	0.00	6.30	0.00	None Contributing
7.45	0.18	6.30	0.00	Orifice - 1
7.55	0.48	6.30	0.00	Orifice - 1
7.70	1.09	6.30	0.00	Orifice - 1
7.80	1.42	6.30	0.00	Orifice - 1
7.95	1.74	6.30	0.00	Orifice - 1
8.00	1.84	6.30	0.00	Weir - 1 + Orifice - 1
8.05	2.05	6.30	0.00	Weir - 1 + Orifice - 1
8.20	3.12	6.30	0.00	Weir - 1 + Orifice - 1
8.30	4.06	6.30	0.00	Weir - 1 + Orifice - 1
8.45	5.72	6.30	0.00	Weir - 1 + Orifice - 1
8.55	6.96	6.30	0.00	Weir - 1 + Orifice - 1
8.70	9.02	6.30	0.00	Weir - 1 + Orifice - 1
8.80	10.50	6.30	0.00	Weir - 1 + Orifice - 1
8.95	12.87	6.30	0.00	Weir - 1 + Orifice - 1
9.00	13.71	6.30	0.00	Weir - 1 + Orifice - 1
9.05	14.56	6.30	0.00	Weir - 1 + Orifice - 1
9.25	18.14	6.30	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.31	6.30	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.44	6.30	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.85	6.30	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.93	6.30	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	6.45	0.00	Weir - 1
6.45	0.00	6.45	0.00	None Contributing
6.55	0.00	6.45	0.00	None Contributing
6.70	0.00	6.45	0.00	None Contributing
6.80	0.00	6.45	0.00	None Contributing
6.95	0.00	6.45	0.00	None Contributing
7.05	0.00	6.45	0.00	None Contributing
7.20	0.00	6.45	0.00	None Contributing
7.30	0.00	6.45	0.00	None Contributing
7.45	0.18	6.45	0.00	Orifice - 1
7.55	0.48	6.45	0.00	Orifice - 1
7.70	1.09	6.45	0.00	Orifice - 1
7.80	1.42	6.45	0.00	Orifice - 1
7.95	1.74	6.45	0.00	Orifice - 1
8.00	1.84	6.45	0.00	Weir - 1 + Orifice - 1
8.05	2.05	6.45	0.00	Weir - 1 + Orifice - 1
8.20	3.12	6.45	0.00	Weir - 1 + Orifice - 1
8.30	4.06	6.45	0.00	Weir - 1 + Orifice - 1
8.45	5.72	6.45	0.00	Weir - 1 + Orifice - 1
8.55	6.96	6.45	0.00	Weir - 1 + Orifice - 1
8.70	9.02	6.45	0.00	Weir - 1 + Orifice - 1
8.80	10.50	6.45	0.00	Weir - 1 + Orifice - 1
8.95	12.87	6.45	0.00	Weir - 1 + Orifice - 1
9.00	13.71	6.45	0.00	Weir - 1 + Orifice - 1
9.05	14.56	6.45	0.00	Weir - 1 + Orifice - 1
9.25	18.14	6.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.31	6.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.44	6.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.85	6.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.93	6.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	6.70	0.00	Weir - 1
6.45	0.00	6.70	0.00	Weir - 1
6.55	0.00	6.70	0.00	Weir - 1
6.70	0.00	6.70	0.00	None Contributing
6.80	0.00	6.70	0.00	None Contributing
6.95	0.00	6.70	0.00	None Contributing
7.05	0.00	6.70	0.00	None Contributing
7.20	0.00	6.70	0.00	None Contributing
7.30	0.00	6.70	0.00	None Contributing
7.45	0.18	6.70	0.00	Orifice - 1
7.55	0.48	6.70	0.00	Orifice - 1
7.70	1.09	6.70	0.00	Orifice - 1
7.80	1.42	6.70	0.00	Orifice - 1
7.95	1.74	6.70	0.00	Orifice - 1
8.00	1.84	6.70	0.00	Weir - 1 + Orifice - 1
8.05	2.05	6.70	0.00	Weir - 1 + Orifice - 1
8.20	3.12	6.70	0.00	Weir - 1 + Orifice - 1
8.30	4.06	6.70	0.00	Weir - 1 + Orifice - 1
8.45	5.72	6.70	0.00	Weir - 1 + Orifice - 1
8.55	6.96	6.70	0.00	Weir - 1 + Orifice - 1
8.70	9.02	6.70	0.00	Weir - 1 + Orifice - 1
8.80	10.50	6.70	0.00	Weir - 1 + Orifice - 1
8.95	12.87	6.70	0.00	Weir - 1 + Orifice - 1
9.00	13.71	6.70	0.00	Weir - 1 + Orifice - 1
9.05	14.56	6.70	0.00	Weir - 1 + Orifice - 1
9.25	18.14	6.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.31	6.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.44	6.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.85	6.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.93	6.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	6.95	0.00	Weir - 1
6.45	0.00	6.95	0.00	Weir - 1
6.55	0.00	6.95	0.00	Weir - 1
6.70	0.00	6.95	0.00	Weir - 1
6.80	0.00	6.95	0.00	Weir - 1
6.95	0.00	6.95	0.00	None Contributing
7.05	0.00	6.95	0.00	None Contributing
7.20	0.00	6.95	0.00	None Contributing
7.30	0.00	6.95	0.00	None Contributing
7.45	0.18	6.95	0.00	Orifice - 1
7.55	0.48	6.95	0.00	Orifice - 1
7.70	1.09	6.95	0.00	Orifice - 1
7.80	1.42	6.95	0.00	Orifice - 1
7.95	1.74	6.95	0.00	Orifice - 1
8.00	1.84	6.95	0.00	Weir - 1 + Orifice - 1
8.05	2.05	6.95	0.00	Weir - 1 + Orifice - 1
8.20	3.12	6.95	0.00	Weir - 1 + Orifice - 1
8.30	4.06	6.95	0.00	Weir - 1 + Orifice - 1
8.45	5.72	6.95	0.00	Weir - 1 + Orifice - 1
8.55	6.96	6.95	0.00	Weir - 1 + Orifice - 1
8.70	9.02	6.95	0.00	Weir - 1 + Orifice - 1
8.80	10.50	6.95	0.00	Weir - 1 + Orifice - 1
8.95	12.87	6.95	0.00	Weir - 1 + Orifice - 1
9.00	13.71	6.95	0.00	Weir - 1 + Orifice - 1
9.05	14.56	6.95	0.00	Weir - 1 + Orifice - 1
9.25	18.14	6.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.31	6.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.44	6.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.85	6.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.93	6.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	7.20	0.00	Weir - 1
6.45	0.00	7.20	0.00	Weir - 1
6.55	0.00	7.20	0.00	Weir - 1
6.70	0.00	7.20	0.00	Weir - 1
6.80	0.00	7.20	0.00	Weir - 1
6.95	0.00	7.20	0.00	Weir - 1
7.05	0.00	7.20	0.00	Weir - 1
7.20	0.00	7.20	0.00	None Contributing
7.30	0.00	7.20	0.00	None Contributing
7.45	0.18	7.20	0.00	Orifice - 1
7.55	0.48	7.20	0.00	Orifice - 1
7.70	1.09	7.20	0.00	Orifice - 1
7.80	1.42	7.20	0.00	Orifice - 1
7.95	1.74	7.20	0.00	Orifice - 1
8.00	1.84	7.20	0.00	Weir - 1 + Orifice - 1
8.05	2.05	7.20	0.00	Weir - 1 + Orifice - 1
8.20	3.12	7.20	0.00	Weir - 1 + Orifice - 1
8.30	4.06	7.20	0.00	Weir - 1 + Orifice - 1
8.45	5.72	7.20	0.00	Weir - 1 + Orifice - 1
8.55	6.96	7.20	0.00	Weir - 1 + Orifice - 1
8.70	9.02	7.20	0.00	Weir - 1 + Orifice - 1
8.80	10.50	7.20	0.00	Weir - 1 + Orifice - 1
8.95	12.87	7.20	0.00	Weir - 1 + Orifice - 1
9.00	13.71	7.20	0.00	Weir - 1 + Orifice - 1
9.05	14.56	7.20	0.00	Weir - 1 + Orifice - 1
9.25	18.14	7.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.31	7.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.44	7.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.85	7.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.93	7.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	7.30	0.00	Weir - 1
6.45	0.00	7.30	0.00	Weir - 1
6.55	0.00	7.30	0.00	Weir - 1
6.70	0.00	7.30	0.00	Weir - 1
6.80	0.00	7.30	0.00	Weir - 1
6.95	0.00	7.30	0.00	Weir - 1
7.05	0.00	7.30	0.00	Weir - 1
7.20	0.00	7.30	0.00	Weir - 1
7.30	0.00	7.30	0.00	None Contributing
7.45	0.18	7.30	0.00	Orifice - 1
7.55	0.48	7.30	0.00	Orifice - 1
7.70	1.09	7.30	0.00	Orifice - 1
7.80	1.42	7.30	0.00	Orifice - 1
7.95	1.74	7.30	0.00	Orifice - 1
8.00	1.84	7.30	0.00	Weir - 1 + Orifice - 1
8.05	2.05	7.30	0.00	Weir - 1 + Orifice - 1
8.20	3.12	7.30	0.00	Weir - 1 + Orifice - 1
8.30	4.06	7.30	0.00	Weir - 1 + Orifice - 1
8.45	5.72	7.30	0.00	Weir - 1 + Orifice - 1
8.55	6.96	7.30	0.00	Weir - 1 + Orifice - 1
8.70	9.02	7.30	0.00	Weir - 1 + Orifice - 1
8.80	10.50	7.30	0.00	Weir - 1 + Orifice - 1
8.95	12.87	7.30	0.00	Weir - 1 + Orifice - 1
9.00	13.71	7.30	0.00	Weir - 1 + Orifice - 1
9.05	14.56	7.30	0.00	Weir - 1 + Orifice - 1
9.25	18.14	7.30	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.31	7.30	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.44	7.30	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.85	7.30	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.93	7.30	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	7.45	0.00	Weir - 1
6.45	0.00	7.45	0.00	Weir - 1
6.55	0.00	7.45	0.00	Weir - 1
6.70	0.00	7.45	0.00	Weir - 1
6.80	0.00	7.45	0.00	Weir - 1
6.95	0.00	7.45	0.00	Weir - 1
7.05	0.00	7.45	0.00	Weir - 1
7.20	0.00	7.45	0.00	Weir - 1
7.30	0.00	7.45	0.00	Weir - 1
7.45	0.00	7.45	0.00	Orifice - 1
7.55	0.45	7.45	0.00	Orifice - 1
7.70	1.09	7.45	0.00	Orifice - 1
7.80	1.42	7.45	0.00	Orifice - 1
7.95	1.74	7.45	0.00	Orifice - 1
8.00	1.84	7.45	0.00	Weir - 1 + Orifice - 1
8.05	2.05	7.45	0.00	Weir - 1 + Orifice - 1
8.20	3.12	7.45	0.00	Weir - 1 + Orifice - 1
8.30	4.06	7.45	0.00	Weir - 1 + Orifice - 1
8.45	5.72	7.45	0.00	Weir - 1 + Orifice - 1
8.55	6.96	7.45	0.00	Weir - 1 + Orifice - 1
8.70	9.02	7.45	0.00	Weir - 1 + Orifice - 1
8.80	10.50	7.45	0.00	Weir - 1 + Orifice - 1
8.95	12.87	7.45	0.00	Weir - 1 + Orifice - 1
9.00	13.71	7.45	0.00	Weir - 1 + Orifice - 1
9.05	14.56	7.45	0.00	Weir - 1 + Orifice - 1
9.25	18.14	7.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.31	7.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.44	7.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.85	7.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.93	7.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	7.70	0.00	Weir - 1
6.45	0.00	7.70	0.00	Weir - 1
6.55	0.00	7.70	0.00	Weir - 1
6.70	0.00	7.70	0.00	Weir - 1
6.80	0.00	7.70	0.00	Weir - 1
6.95	0.00	7.70	0.00	Weir - 1
7.05	0.00	7.70	0.00	Weir - 1
7.20	0.00	7.70	0.00	Weir - 1
7.30	0.00	7.70	0.00	Weir - 1
7.45	0.00	7.70	0.00	Weir - 1
7.55	0.00	7.70	0.00	Weir - 1
7.70	0.00	7.70	0.00	Orifice - 1
7.80	0.83	7.70	0.00	Orifice - 1
7.95	1.31	7.70	0.00	Orifice - 1
8.00	1.44	7.70	0.00	Weir - 1 + Orifice - 1
8.05	1.67	7.70	0.00	Weir - 1 + Orifice - 1
8.20	2.80	7.70	0.00	Weir - 1 + Orifice - 1
8.30	3.76	7.70	0.00	Weir - 1 + Orifice - 1
8.45	5.44	7.70	0.00	Weir - 1 + Orifice - 1
8.55	6.70	7.70	0.00	Weir - 1 + Orifice - 1
8.70	8.77	7.70	0.00	Weir - 1 + Orifice - 1
8.80	10.27	7.70	0.00	Weir - 1 + Orifice - 1
8.95	12.66	7.70	0.00	Weir - 1 + Orifice - 1
9.00	13.49	7.70	0.00	Weir - 1 + Orifice - 1
9.05	14.35	7.70	0.00	Weir - 1 + Orifice - 1
9.25	17.94	7.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	19.12	7.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.26	7.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.68	7.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.77	7.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	7.95	0.00	Weir - 1
6.45	0.00	7.95	0.00	Weir - 1
6.55	0.00	7.95	0.00	Weir - 1
6.70	0.00	7.95	0.00	Weir - 1
6.80	0.00	7.95	0.00	Weir - 1
6.95	0.00	7.95	0.00	Weir - 1
7.05	0.00	7.95	0.00	Weir - 1
7.20	0.00	7.95	0.00	Weir - 1
7.30	0.00	7.95	0.00	Weir - 1
7.45	0.00	7.95	0.00	Weir - 1
7.55	0.00	7.95	0.00	Weir - 1
7.70	0.00	7.95	0.00	Weir - 1
7.80	0.00	7.95	0.00	Weir - 1
7.95	0.00	7.95	0.00	Orifice - 1
8.00	0.59	7.95	0.00	Weir - 1 + Orifice - 1
8.05	0.95	7.95	0.00	Weir - 1 + Orifice - 1
8.20	2.25	7.95	0.00	Weir - 1 + Orifice - 1
8.30	3.28	7.95	0.00	Weir - 1 + Orifice - 1
8.45	5.03	7.95	0.00	Weir - 1 + Orifice - 1
8.55	6.32	7.95	0.00	Weir - 1 + Orifice - 1
8.70	8.42	7.95	0.00	Weir - 1 + Orifice - 1
8.80	9.93	7.95	0.00	Weir - 1 + Orifice - 1
8.95	12.35	7.95	0.00	Weir - 1 + Orifice - 1
9.00	13.19	7.95	0.00	Weir - 1 + Orifice - 1
9.05	14.05	7.95	0.00	Weir - 1 + Orifice - 1
9.25	17.67	7.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	18.85	7.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	27.01	7.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.44	7.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.54	7.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	8.00	0.00	Weir - 1
6.45	0.00	8.00	0.00	Weir - 1
6.55	0.00	8.00	0.00	Weir - 1
6.70	0.00	8.00	0.00	Weir - 1
6.80	0.00	8.00	0.00	Weir - 1
6.95	0.00	8.00	0.00	Weir - 1
7.05	0.00	8.00	0.00	Weir - 1
7.20	0.00	8.00	0.00	Weir - 1
7.30	0.00	8.00	0.00	Weir - 1
7.45	0.00	8.00	0.00	Weir - 1
7.55	0.00	8.00	0.00	Weir - 1
7.70	0.00	8.00	0.00	Weir - 1
7.80	0.00	8.00	0.00	Weir - 1
7.95	0.00	8.00	0.00	Weir - 1
8.00	0.00	8.00	0.00	Weir - 1 + Orifice - 1
8.05	0.70	8.00	0.00	Weir - 1 + Orifice - 1
8.20	2.11	8.00	0.00	Weir - 1 + Orifice - 1
8.30	3.16	8.00	0.00	Weir - 1 + Orifice - 1
8.45	4.93	8.00	0.00	Weir - 1 + Orifice - 1
8.55	6.23	8.00	0.00	Weir - 1 + Orifice - 1
8.70	8.35	8.00	0.00	Weir - 1 + Orifice - 1
8.80	9.86	8.00	0.00	Weir - 1 + Orifice - 1
8.95	12.28	8.00	0.00	Weir - 1 + Orifice - 1
9.00	13.13	8.00	0.00	Weir - 1 + Orifice - 1
9.05	13.99	8.00	0.00	Weir - 1 + Orifice - 1
9.25	17.61	8.00	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	18.79	8.00	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	26.96	8.00	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	37.40	8.00	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	45.50	8.00	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	8.20	0.00	Weir - 1
6.45	0.00	8.20	0.00	Weir - 1
6.55	0.00	8.20	0.00	Weir - 1
6.70	0.00	8.20	0.00	Weir - 1
6.80	0.00	8.20	0.00	Weir - 1
6.95	0.00	8.20	0.00	Weir - 1
7.05	0.00	8.20	0.00	Weir - 1
7.20	0.00	8.20	0.00	Weir - 1
7.30	0.00	8.20	0.00	Weir - 1
7.45	0.00	8.20	0.00	Weir - 1
7.55	0.00	8.20	0.00	Weir - 1
7.70	0.00	8.20	0.00	Weir - 1
7.80	0.00	8.20	0.00	Weir - 1
7.95	0.00	8.20	0.00	Weir - 1
8.00	0.00	8.20	0.00	Weir - 1
8.05	0.00	8.20	0.00	Weir - 1
8.20	0.00	8.20	0.00	Weir - 1 + Orifice - 1
8.30	2.10	8.20	0.00	Weir - 1 + Orifice - 1
8.45	4.08	8.20	0.00	Weir - 1 + Orifice - 1
8.55	5.45	8.20	0.00	Weir - 1 + Orifice - 1
8.70	7.63	8.20	0.00	Weir - 1 + Orifice - 1
8.80	9.17	8.20	0.00	Weir - 1 + Orifice - 1
8.95	11.62	8.20	0.00	Weir - 1 + Orifice - 1
9.00	12.48	8.20	0.00	Weir - 1 + Orifice - 1
9.05	13.35	8.20	0.00	Weir - 1 + Orifice - 1
9.25	17.00	8.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	18.18	8.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	26.38	8.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	36.83	8.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	44.94	8.20	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	8.45	0.00	Weir - 1
6.45	0.00	8.45	0.00	Weir - 1
6.55	0.00	8.45	0.00	Weir - 1
6.70	0.00	8.45	0.00	Weir - 1
6.80	0.00	8.45	0.00	Weir - 1
6.95	0.00	8.45	0.00	Weir - 1
7.05	0.00	8.45	0.00	Weir - 1
7.20	0.00	8.45	0.00	Weir - 1
7.30	0.00	8.45	0.00	Weir - 1
7.45	0.00	8.45	0.00	Weir - 1
7.55	0.00	8.45	0.00	Weir - 1
7.70	0.00	8.45	0.00	Weir - 1
7.80	0.00	8.45	0.00	Weir - 1
7.95	0.00	8.45	0.00	Weir - 1
8.00	0.00	8.45	0.00	Weir - 1
8.05	0.00	8.45	0.00	Weir - 1
8.20	0.00	8.45	0.00	Weir - 1
8.30	0.00	8.45	0.00	Weir - 1
8.45	0.00	8.45	0.00	Weir - 1 + Orifice - 1
8.55	3.38	8.45	0.00	Weir - 1 + Orifice - 1
8.70	5.97	8.45	0.00	Weir - 1 + Orifice - 1
8.80	7.64	8.45	0.00	Weir - 1 + Orifice - 1
8.95	10.21	8.45	0.00	Weir - 1 + Orifice - 1
9.00	11.09	8.45	0.00	Weir - 1 + Orifice - 1
9.05	11.99	8.45	0.00	Weir - 1 + Orifice - 1
9.25	15.71	8.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	16.91	8.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	25.16	8.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	35.65	8.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	43.79	8.45	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	8.70	0.00	Weir - 1
6.45	0.00	8.70	0.00	Weir - 1
6.55	0.00	8.70	0.00	Weir - 1
6.70	0.00	8.70	0.00	Weir - 1
6.80	0.00	8.70	0.00	Weir - 1
6.95	0.00	8.70	0.00	Weir - 1
7.05	0.00	8.70	0.00	Weir - 1
7.20	0.00	8.70	0.00	Weir - 1
7.30	0.00	8.70	0.00	Weir - 1
7.45	0.00	8.70	0.00	Weir - 1
7.55	0.00	8.70	0.00	Weir - 1
7.70	0.00	8.70	0.00	Weir - 1
7.80	0.00	8.70	0.00	Weir - 1
7.95	0.00	8.70	0.00	Weir - 1
8.00	0.00	8.70	0.00	Weir - 1
8.05	0.00	8.70	0.00	Weir - 1
8.20	0.00	8.70	0.00	Weir - 1
8.30	0.00	8.70	0.00	Weir - 1
8.45	0.00	8.70	0.00	Weir - 1
8.55	0.00	8.70	0.00	Weir - 1
8.70	0.00	8.70	0.00	Weir - 1 + Orifice - 1
8.80	4.73	8.70	0.00	Weir - 1 + Orifice - 1
8.95	7.93	8.70	0.00	Weir - 1 + Orifice - 1
9.00	8.92	8.70	0.00	Weir - 1 + Orifice - 1
9.05	9.90	8.70	0.00	Weir - 1 + Orifice - 1
9.25	13.85	8.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	15.09	8.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	23.48	8.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	34.06	8.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	42.24	8.70	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	8.95	0.00	Weir - 1
6.45	0.00	8.95	0.00	Weir - 1
6.55	0.00	8.95	0.00	Weir - 1
6.70	0.00	8.95	0.00	Weir - 1
6.80	0.00	8.95	0.00	Weir - 1
6.95	0.00	8.95	0.00	Weir - 1
7.05	0.00	8.95	0.00	Weir - 1
7.20	0.00	8.95	0.00	Weir - 1
7.30	0.00	8.95	0.00	Weir - 1
7.45	0.00	8.95	0.00	Weir - 1
7.55	0.00	8.95	0.00	Weir - 1
7.70	0.00	8.95	0.00	Weir - 1
7.80	0.00	8.95	0.00	Weir - 1
7.95	0.00	8.95	0.00	Weir - 1
8.00	0.00	8.95	0.00	Weir - 1
8.05	0.00	8.95	0.00	Weir - 1
8.20	0.00	8.95	0.00	Weir - 1
8.30	0.00	8.95	0.00	Weir - 1
8.45	0.00	8.95	0.00	Weir - 1
8.55	0.00	8.95	0.00	Weir - 1
8.70	0.00	8.95	0.00	Weir - 1
8.80	0.00	8.95	0.00	Weir - 1
8.95	0.00	8.95	0.00	Weir - 1 + Orifice - 1
9.00	4.44	8.95	0.00	Weir - 1 + Orifice - 1
9.05	6.12	8.95	0.00	Weir - 1 + Orifice - 1
9.25	11.10	8.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	12.46	8.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	21.22	8.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	31.99	8.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	40.27	8.95	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: BIO - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.30	0.00	9.00	0.00	Weir - 1
6.45	0.00	9.00	0.00	Weir - 1
6.55	0.00	9.00	0.00	Weir - 1
6.70	0.00	9.00	0.00	Weir - 1
6.80	0.00	9.00	0.00	Weir - 1
6.95	0.00	9.00	0.00	Weir - 1
7.05	0.00	9.00	0.00	Weir - 1
7.20	0.00	9.00	0.00	Weir - 1
7.30	0.00	9.00	0.00	Weir - 1
7.45	0.00	9.00	0.00	Weir - 1
7.55	0.00	9.00	0.00	Weir - 1
7.70	0.00	9.00	0.00	Weir - 1
7.80	0.00	9.00	0.00	Weir - 1
7.95	0.00	9.00	0.00	Weir - 1
8.00	0.00	9.00	0.00	Weir - 1
8.05	0.00	9.00	0.00	Weir - 1
8.20	0.00	9.00	0.00	Weir - 1
8.30	0.00	9.00	0.00	Weir - 1
8.45	0.00	9.00	0.00	Weir - 1
8.55	0.00	9.00	0.00	Weir - 1
8.70	0.00	9.00	0.00	Weir - 1
8.80	0.00	9.00	0.00	Weir - 1
8.95	0.00	9.00	0.00	Weir - 1
9.00	0.00	9.00	0.00	Weir - 1 + Orifice - 1
9.05	4.66	9.00	0.00	Weir - 1 + Orifice - 1
9.25	10.36	9.00	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.30	11.77	9.00	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.55	20.67	9.00	0.00	Weir - 1 + Riser - 1 + Orifice - 1
9.80	31.50	9.00	0.00	Weir - 1 + Riser - 1 + Orifice - 1
10.00	39.82	9.00	0.00	Weir - 1 + Riser - 1 + Orifice - 1

Outlet Structure Data

Subsection: Outlet Input Data
Label: BIO - 2
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Requested Pond Water Surface Elevations	
Minimum (Headwater)	5.70 ft
Increment (Headwater)	0.25 ft
Maximum (Headwater)	9.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	TW	7.25	9.00
Inlet Box	Riser - 1	Forward	TW	8.50	9.00
Orifice-Circular	Orifice - 1	Forward	TW	6.70	9.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Outlet Structure Data

Subsection: Outlet Input Data
Label: BIO - 2
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	3
Elevation	6.70 ft
Orifice Diameter	8.0 in
Orifice Coefficient	0.600

Structure ID: Weir - 1 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	7.25 ft
Weir Length	3.50 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: Riser - 1 Structure Type: Inlet Box	
Number of Openings	1
Elevation	8.50 ft
Orifice Area	2.9 ft²
Orifice Coefficient	0.600
Weir Length	6.96 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Downstream Channel
Catalog Conduit	15 inch
Channel Slope	0.007 ft/ft
Channel Invert Elevation	5.70 ft

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

Outlet Structure Data

Subsection: Outlet Input Data
Label: BIO - 2
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Convergence Tolerances	
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Outlet Structure Data

Subsection: Outlet Input Data
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Requested Pond Water Surface Elevations	
Minimum (Headwater)	6.33 ft
Increment (Headwater)	0.25 ft
Maximum (Headwater)	10.08 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	O - 1	Forward	TW	7.00	10.08
Rectangular Weir	Weir - 1	Forward	TW	9.00	10.08
Tailwater Settings	Tailwater			(N/A)	(N/A)

Outlet Structure Data

Subsection: Outlet Input Data
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Structure ID: O - 1 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	7.00 ft
Orifice Diameter	18.0 in
Orifice Coefficient	0.600

Structure ID: Weir - 1 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	9.00 ft
Weir Length	2.75 ft
Weir Coefficient	3.00 (ft^0.5)/s

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	6.30	0.00	None Contributing
6.55	0.00	6.30	0.00	None Contributing
6.58	0.00	6.30	0.00	None Contributing
6.80	0.00	6.30	0.00	None Contributing
6.83	0.00	6.30	0.00	None Contributing
7.00	0.00	6.30	0.00	None Contributing
7.05	0.01	6.30	0.00	O - 1
7.08	0.03	6.30	0.00	O - 1
7.30	0.37	6.30	0.00	O - 1
7.33	0.44	6.30	0.00	O - 1
7.55	1.18	6.30	0.00	O - 1
7.58	1.30	6.30	0.00	O - 1
7.80	2.37	6.30	0.00	O - 1
7.83	2.54	6.30	0.00	O - 1
8.05	3.88	6.30	0.00	O - 1
8.08	4.09	6.30	0.00	O - 1
8.30	5.63	6.30	0.00	O - 1
8.33	5.84	6.30	0.00	O - 1
8.55	7.61	6.30	0.00	O - 1
8.58	7.75	6.30	0.00	O - 1
8.80	8.72	6.30	0.00	O - 1
8.83	8.84	6.30	0.00	O - 1
9.00	9.51	6.30	0.00	O - 1 + Weir - 1
9.05	9.79	6.30	0.00	O - 1 + Weir - 1
9.08	10.00	6.30	0.00	O - 1 + Weir - 1
9.30	11.94	6.30	0.00	O - 1 + Weir - 1
9.33	12.25	6.30	0.00	O - 1 + Weir - 1
9.55	14.78	6.30	0.00	O - 1 + Weir - 1
9.58	15.15	6.30	0.00	O - 1 + Weir - 1
9.80	18.08	6.30	0.00	O - 1 + Weir - 1
9.83	18.50	6.30	0.00	O - 1 + Weir - 1
10.00	21.01	6.30	0.00	O - 1 + Weir - 1
10.08	22.24	6.30	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	6.33	0.00	None Contributing
6.55	0.00	6.33	0.00	None Contributing
6.58	0.00	6.33	0.00	None Contributing
6.80	0.00	6.33	0.00	None Contributing
6.83	0.00	6.33	0.00	None Contributing
7.00	0.00	6.33	0.00	None Contributing
7.05	0.01	6.33	0.00	O - 1
7.08	0.03	6.33	0.00	O - 1
7.30	0.37	6.33	0.00	O - 1
7.33	0.44	6.33	0.00	O - 1
7.55	1.18	6.33	0.00	O - 1
7.58	1.30	6.33	0.00	O - 1
7.80	2.37	6.33	0.00	O - 1
7.83	2.54	6.33	0.00	O - 1
8.05	3.88	6.33	0.00	O - 1
8.08	4.09	6.33	0.00	O - 1
8.30	5.63	6.33	0.00	O - 1
8.33	5.84	6.33	0.00	O - 1
8.55	7.61	6.33	0.00	O - 1
8.58	7.75	6.33	0.00	O - 1
8.80	8.72	6.33	0.00	O - 1
8.83	8.84	6.33	0.00	O - 1
9.00	9.51	6.33	0.00	O - 1 + Weir - 1
9.05	9.79	6.33	0.00	O - 1 + Weir - 1
9.08	10.00	6.33	0.00	O - 1 + Weir - 1
9.30	11.94	6.33	0.00	O - 1 + Weir - 1
9.33	12.25	6.33	0.00	O - 1 + Weir - 1
9.55	14.78	6.33	0.00	O - 1 + Weir - 1
9.58	15.15	6.33	0.00	O - 1 + Weir - 1
9.80	18.08	6.33	0.00	O - 1 + Weir - 1
9.83	18.50	6.33	0.00	O - 1 + Weir - 1
10.00	21.01	6.33	0.00	O - 1 + Weir - 1
10.08	22.24	6.33	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	6.55	0.00	O - 1
6.55	0.00	6.55	0.00	None Contributing
6.58	0.00	6.55	0.00	None Contributing
6.80	0.00	6.55	0.00	None Contributing
6.83	0.00	6.55	0.00	None Contributing
7.00	0.00	6.55	0.00	None Contributing
7.05	0.01	6.55	0.00	O - 1
7.08	0.03	6.55	0.00	O - 1
7.30	0.37	6.55	0.00	O - 1
7.33	0.44	6.55	0.00	O - 1
7.55	1.18	6.55	0.00	O - 1
7.58	1.30	6.55	0.00	O - 1
7.80	2.37	6.55	0.00	O - 1
7.83	2.54	6.55	0.00	O - 1
8.05	3.88	6.55	0.00	O - 1
8.08	4.09	6.55	0.00	O - 1
8.30	5.63	6.55	0.00	O - 1
8.33	5.84	6.55	0.00	O - 1
8.55	7.61	6.55	0.00	O - 1
8.58	7.75	6.55	0.00	O - 1
8.80	8.72	6.55	0.00	O - 1
8.83	8.84	6.55	0.00	O - 1
9.00	9.51	6.55	0.00	O - 1 + Weir - 1
9.05	9.79	6.55	0.00	O - 1 + Weir - 1
9.08	10.00	6.55	0.00	O - 1 + Weir - 1
9.30	11.94	6.55	0.00	O - 1 + Weir - 1
9.33	12.25	6.55	0.00	O - 1 + Weir - 1
9.55	14.78	6.55	0.00	O - 1 + Weir - 1
9.58	15.15	6.55	0.00	O - 1 + Weir - 1
9.80	18.08	6.55	0.00	O - 1 + Weir - 1
9.83	18.50	6.55	0.00	O - 1 + Weir - 1
10.00	21.01	6.55	0.00	O - 1 + Weir - 1
10.08	22.24	6.55	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	6.80	0.00	O - 1
6.55	0.00	6.80	0.00	O - 1
6.58	0.00	6.80	0.00	O - 1
6.80	0.00	6.80	0.00	None Contributing
6.83	0.00	6.80	0.00	None Contributing
7.00	0.00	6.80	0.00	None Contributing
7.05	0.01	6.80	0.00	O - 1
7.08	0.03	6.80	0.00	O - 1
7.30	0.37	6.80	0.00	O - 1
7.33	0.44	6.80	0.00	O - 1
7.55	1.18	6.80	0.00	O - 1
7.58	1.30	6.80	0.00	O - 1
7.80	2.37	6.80	0.00	O - 1
7.83	2.54	6.80	0.00	O - 1
8.05	3.88	6.80	0.00	O - 1
8.08	4.09	6.80	0.00	O - 1
8.30	5.63	6.80	0.00	O - 1
8.33	5.84	6.80	0.00	O - 1
8.55	7.61	6.80	0.00	O - 1
8.58	7.75	6.80	0.00	O - 1
8.80	8.72	6.80	0.00	O - 1
8.83	8.84	6.80	0.00	O - 1
9.00	9.51	6.80	0.00	O - 1 + Weir - 1
9.05	9.79	6.80	0.00	O - 1 + Weir - 1
9.08	10.00	6.80	0.00	O - 1 + Weir - 1
9.30	11.94	6.80	0.00	O - 1 + Weir - 1
9.33	12.25	6.80	0.00	O - 1 + Weir - 1
9.55	14.78	6.80	0.00	O - 1 + Weir - 1
9.58	15.15	6.80	0.00	O - 1 + Weir - 1
9.80	18.08	6.80	0.00	O - 1 + Weir - 1
9.83	18.50	6.80	0.00	O - 1 + Weir - 1
10.00	21.01	6.80	0.00	O - 1 + Weir - 1
10.08	22.24	6.80	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	7.00	0.00	O - 1
6.55	0.00	7.00	0.00	O - 1
6.58	0.00	7.00	0.00	O - 1
6.80	0.00	7.00	0.00	O - 1
6.83	0.00	7.00	0.00	O - 1
7.00	0.00	7.00	0.00	None Contributing
7.05	0.01	7.00	0.00	O - 1
7.08	0.03	7.00	0.00	O - 1
7.30	0.37	7.00	0.00	O - 1
7.33	0.44	7.00	0.00	O - 1
7.55	1.18	7.00	0.00	O - 1
7.58	1.30	7.00	0.00	O - 1
7.80	2.37	7.00	0.00	O - 1
7.83	2.54	7.00	0.00	O - 1
8.05	3.88	7.00	0.00	O - 1
8.08	4.09	7.00	0.00	O - 1
8.30	5.63	7.00	0.00	O - 1
8.33	5.84	7.00	0.00	O - 1
8.55	7.61	7.00	0.00	O - 1
8.58	7.75	7.00	0.00	O - 1
8.80	8.72	7.00	0.00	O - 1
8.83	8.84	7.00	0.00	O - 1
9.00	9.51	7.00	0.00	O - 1 + Weir - 1
9.05	9.79	7.00	0.00	O - 1 + Weir - 1
9.08	10.00	7.00	0.00	O - 1 + Weir - 1
9.30	11.94	7.00	0.00	O - 1 + Weir - 1
9.33	12.25	7.00	0.00	O - 1 + Weir - 1
9.55	14.78	7.00	0.00	O - 1 + Weir - 1
9.58	15.15	7.00	0.00	O - 1 + Weir - 1
9.80	18.08	7.00	0.00	O - 1 + Weir - 1
9.83	18.50	7.00	0.00	O - 1 + Weir - 1
10.00	21.01	7.00	0.00	O - 1 + Weir - 1
10.08	22.24	7.00	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	7.05	0.00	O - 1
6.55	0.00	7.05	0.00	O - 1
6.58	0.00	7.05	0.00	O - 1
6.80	0.00	7.05	0.00	O - 1
6.83	0.00	7.05	0.00	O - 1
7.00	0.00	7.05	0.00	O - 1
7.05	0.00	7.05	0.00	O - 1
7.08	0.03	7.05	0.00	O - 1
7.30	0.37	7.05	0.00	O - 1
7.33	0.44	7.05	0.00	O - 1
7.55	1.18	7.05	0.00	O - 1
7.58	1.30	7.05	0.00	O - 1
7.80	2.37	7.05	0.00	O - 1
7.83	2.54	7.05	0.00	O - 1
8.05	3.88	7.05	0.00	O - 1
8.08	4.09	7.05	0.00	O - 1
8.30	5.63	7.05	0.00	O - 1
8.33	5.84	7.05	0.00	O - 1
8.55	7.61	7.05	0.00	O - 1
8.58	7.75	7.05	0.00	O - 1
8.80	8.72	7.05	0.00	O - 1
8.83	8.84	7.05	0.00	O - 1
9.00	9.51	7.05	0.00	O - 1 + Weir - 1
9.05	9.79	7.05	0.00	O - 1 + Weir - 1
9.08	10.00	7.05	0.00	O - 1 + Weir - 1
9.30	11.94	7.05	0.00	O - 1 + Weir - 1
9.33	12.25	7.05	0.00	O - 1 + Weir - 1
9.55	14.78	7.05	0.00	O - 1 + Weir - 1
9.58	15.15	7.05	0.00	O - 1 + Weir - 1
9.80	18.08	7.05	0.00	O - 1 + Weir - 1
9.83	18.50	7.05	0.00	O - 1 + Weir - 1
10.00	21.01	7.05	0.00	O - 1 + Weir - 1
10.08	22.24	7.05	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	7.30	0.00	O - 1
6.55	0.00	7.30	0.00	O - 1
6.58	0.00	7.30	0.00	O - 1
6.80	0.00	7.30	0.00	O - 1
6.83	0.00	7.30	0.00	O - 1
7.00	0.00	7.30	0.00	O - 1
7.05	0.00	7.30	0.00	O - 1
7.08	0.00	7.30	0.00	O - 1
7.30	0.00	7.30	0.00	O - 1
7.33	0.18	7.30	0.00	O - 1
7.55	1.18	7.30	0.00	O - 1
7.58	1.30	7.30	0.00	O - 1
7.80	2.37	7.30	0.00	O - 1
7.83	2.54	7.30	0.00	O - 1
8.05	3.88	7.30	0.00	O - 1
8.08	4.09	7.30	0.00	O - 1
8.30	5.63	7.30	0.00	O - 1
8.33	5.84	7.30	0.00	O - 1
8.55	7.61	7.30	0.00	O - 1
8.58	7.75	7.30	0.00	O - 1
8.80	8.72	7.30	0.00	O - 1
8.83	8.84	7.30	0.00	O - 1
9.00	9.51	7.30	0.00	O - 1 + Weir - 1
9.05	9.79	7.30	0.00	O - 1 + Weir - 1
9.08	10.00	7.30	0.00	O - 1 + Weir - 1
9.30	11.94	7.30	0.00	O - 1 + Weir - 1
9.33	12.25	7.30	0.00	O - 1 + Weir - 1
9.55	14.78	7.30	0.00	O - 1 + Weir - 1
9.58	15.15	7.30	0.00	O - 1 + Weir - 1
9.80	18.08	7.30	0.00	O - 1 + Weir - 1
9.83	18.50	7.30	0.00	O - 1 + Weir - 1
10.00	21.01	7.30	0.00	O - 1 + Weir - 1
10.08	22.24	7.30	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	7.55	0.00	O - 1
6.55	0.00	7.55	0.00	O - 1
6.58	0.00	7.55	0.00	O - 1
6.80	0.00	7.55	0.00	O - 1
6.83	0.00	7.55	0.00	O - 1
7.00	0.00	7.55	0.00	O - 1
7.05	0.00	7.55	0.00	O - 1
7.08	0.00	7.55	0.00	O - 1
7.30	0.00	7.55	0.00	O - 1
7.33	0.00	7.55	0.00	O - 1
7.55	0.00	7.55	0.00	O - 1
7.58	0.23	7.55	0.00	O - 1
7.80	1.94	7.55	0.00	O - 1
7.83	2.17	7.55	0.00	O - 1
8.05	3.88	7.55	0.00	O - 1
8.08	4.09	7.55	0.00	O - 1
8.30	5.63	7.55	0.00	O - 1
8.33	5.84	7.55	0.00	O - 1
8.55	7.61	7.55	0.00	O - 1
8.58	7.75	7.55	0.00	O - 1
8.80	8.72	7.55	0.00	O - 1
8.83	8.84	7.55	0.00	O - 1
9.00	9.51	7.55	0.00	O - 1 + Weir - 1
9.05	9.79	7.55	0.00	O - 1 + Weir - 1
9.08	10.00	7.55	0.00	O - 1 + Weir - 1
9.30	11.94	7.55	0.00	O - 1 + Weir - 1
9.33	12.25	7.55	0.00	O - 1 + Weir - 1
9.55	14.78	7.55	0.00	O - 1 + Weir - 1
9.58	15.15	7.55	0.00	O - 1 + Weir - 1
9.80	18.08	7.55	0.00	O - 1 + Weir - 1
9.83	18.50	7.55	0.00	O - 1 + Weir - 1
10.00	21.01	7.55	0.00	O - 1 + Weir - 1
10.08	22.24	7.55	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	7.80	0.00	O - 1
6.55	0.00	7.80	0.00	O - 1
6.58	0.00	7.80	0.00	O - 1
6.80	0.00	7.80	0.00	O - 1
6.83	0.00	7.80	0.00	O - 1
7.00	0.00	7.80	0.00	O - 1
7.05	0.00	7.80	0.00	O - 1
7.08	0.00	7.80	0.00	O - 1
7.30	0.00	7.80	0.00	O - 1
7.33	0.00	7.80	0.00	O - 1
7.55	0.00	7.80	0.00	O - 1
7.58	0.00	7.80	0.00	O - 1
7.80	0.00	7.80	0.00	O - 1
7.83	0.30	7.80	0.00	O - 1
8.05	2.54	7.80	0.00	O - 1
8.08	2.85	7.80	0.00	O - 1
8.30	5.08	7.80	0.00	O - 1
8.33	5.39	7.80	0.00	O - 1
8.55	7.37	7.80	0.00	O - 1
8.58	7.51	7.80	0.00	O - 1
8.80	8.51	7.80	0.00	O - 1
8.83	8.63	7.80	0.00	O - 1
9.00	9.32	7.80	0.00	O - 1 + Weir - 1
9.05	9.60	7.80	0.00	O - 1 + Weir - 1
9.08	9.81	7.80	0.00	O - 1 + Weir - 1
9.30	11.77	7.80	0.00	O - 1 + Weir - 1
9.33	12.08	7.80	0.00	O - 1 + Weir - 1
9.55	14.62	7.80	0.00	O - 1 + Weir - 1
9.58	14.99	7.80	0.00	O - 1 + Weir - 1
9.80	17.93	7.80	0.00	O - 1 + Weir - 1
9.83	18.36	7.80	0.00	O - 1 + Weir - 1
10.00	20.87	7.80	0.00	O - 1 + Weir - 1
10.08	22.10	7.80	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	8.05	0.00	O - 1
6.55	0.00	8.05	0.00	O - 1
6.58	0.00	8.05	0.00	O - 1
6.80	0.00	8.05	0.00	O - 1
6.83	0.00	8.05	0.00	O - 1
7.00	0.00	8.05	0.00	O - 1
7.05	0.00	8.05	0.00	O - 1
7.08	0.00	8.05	0.00	O - 1
7.30	0.00	8.05	0.00	O - 1
7.33	0.00	8.05	0.00	O - 1
7.55	0.00	8.05	0.00	O - 1
7.58	0.00	8.05	0.00	O - 1
7.80	0.00	8.05	0.00	O - 1
7.83	0.00	8.05	0.00	O - 1
8.05	0.00	8.05	0.00	O - 1
8.08	0.38	8.05	0.00	O - 1
8.30	3.17	8.05	0.00	O - 1
8.33	3.55	8.05	0.00	O - 1
8.55	6.01	8.05	0.00	O - 1
8.58	6.19	8.05	0.00	O - 1
8.80	7.37	8.05	0.00	O - 1
8.83	7.51	8.05	0.00	O - 1
9.00	8.29	8.05	0.00	O - 1 + Weir - 1
9.05	8.60	8.05	0.00	O - 1 + Weir - 1
9.08	8.82	8.05	0.00	O - 1 + Weir - 1
9.30	10.86	8.05	0.00	O - 1 + Weir - 1
9.33	11.19	8.05	0.00	O - 1 + Weir - 1
9.55	13.78	8.05	0.00	O - 1 + Weir - 1
9.58	14.16	8.05	0.00	O - 1 + Weir - 1
9.80	17.15	8.05	0.00	O - 1 + Weir - 1
9.83	17.59	8.05	0.00	O - 1 + Weir - 1
10.00	20.13	8.05	0.00	O - 1 + Weir - 1
10.08	21.38	8.05	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	8.30	0.00	O - 1
6.55	0.00	8.30	0.00	O - 1
6.58	0.00	8.30	0.00	O - 1
6.80	0.00	8.30	0.00	O - 1
6.83	0.00	8.30	0.00	O - 1
7.00	0.00	8.30	0.00	O - 1
7.05	0.00	8.30	0.00	O - 1
7.08	0.00	8.30	0.00	O - 1
7.30	0.00	8.30	0.00	O - 1
7.33	0.00	8.30	0.00	O - 1
7.55	0.00	8.30	0.00	O - 1
7.58	0.00	8.30	0.00	O - 1
7.80	0.00	8.30	0.00	O - 1
7.83	0.00	8.30	0.00	O - 1
8.05	0.00	8.30	0.00	O - 1
8.08	0.00	8.30	0.00	O - 1
8.30	0.00	8.30	0.00	O - 1
8.33	0.57	8.30	0.00	O - 1
8.55	4.25	8.30	0.00	O - 1
8.58	4.50	8.30	0.00	O - 1
8.80	6.01	8.30	0.00	O - 1
8.83	6.19	8.30	0.00	O - 1
9.00	7.12	8.30	0.00	O - 1 + Weir - 1
9.05	7.46	8.30	0.00	O - 1 + Weir - 1
9.08	7.70	8.30	0.00	O - 1 + Weir - 1
9.30	9.86	8.30	0.00	O - 1 + Weir - 1
9.33	10.20	8.30	0.00	O - 1 + Weir - 1
9.55	12.87	8.30	0.00	O - 1 + Weir - 1
9.58	13.27	8.30	0.00	O - 1 + Weir - 1
9.80	16.32	8.30	0.00	O - 1 + Weir - 1
9.83	16.76	8.30	0.00	O - 1 + Weir - 1
10.00	19.34	8.30	0.00	O - 1 + Weir - 1
10.08	20.61	8.30	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	8.55	0.00	O - 1
6.55	0.00	8.55	0.00	O - 1
6.58	0.00	8.55	0.00	O - 1
6.80	0.00	8.55	0.00	O - 1
6.83	0.00	8.55	0.00	O - 1
7.00	0.00	8.55	0.00	O - 1
7.05	0.00	8.55	0.00	O - 1
7.08	0.00	8.55	0.00	O - 1
7.30	0.00	8.55	0.00	O - 1
7.33	0.00	8.55	0.00	O - 1
7.55	0.00	8.55	0.00	O - 1
7.58	0.00	8.55	0.00	O - 1
7.80	0.00	8.55	0.00	O - 1
7.83	0.00	8.55	0.00	O - 1
8.05	0.00	8.55	0.00	O - 1
8.08	0.00	8.55	0.00	O - 1
8.30	0.00	8.55	0.00	O - 1
8.33	0.00	8.55	0.00	O - 1
8.55	0.00	8.55	0.00	O - 1
8.58	1.47	8.55	0.00	O - 1
8.80	4.25	8.55	0.00	O - 1
8.83	4.50	8.55	0.00	O - 1
9.00	5.71	8.55	0.00	O - 1 + Weir - 1
9.05	6.11	8.55	0.00	O - 1 + Weir - 1
9.08	6.38	8.55	0.00	O - 1 + Weir - 1
9.30	8.72	8.55	0.00	O - 1 + Weir - 1
9.33	9.08	8.55	0.00	O - 1 + Weir - 1
9.55	11.87	8.55	0.00	O - 1 + Weir - 1
9.58	12.28	8.55	0.00	O - 1 + Weir - 1
9.80	15.41	8.55	0.00	O - 1 + Weir - 1
9.83	15.86	8.55	0.00	O - 1 + Weir - 1
10.00	18.49	8.55	0.00	O - 1 + Weir - 1
10.08	19.78	8.55	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	8.80	0.00	O - 1
6.55	0.00	8.80	0.00	O - 1
6.58	0.00	8.80	0.00	O - 1
6.80	0.00	8.80	0.00	O - 1
6.83	0.00	8.80	0.00	O - 1
7.00	0.00	8.80	0.00	O - 1
7.05	0.00	8.80	0.00	O - 1
7.08	0.00	8.80	0.00	O - 1
7.30	0.00	8.80	0.00	O - 1
7.33	0.00	8.80	0.00	O - 1
7.55	0.00	8.80	0.00	O - 1
7.58	0.00	8.80	0.00	O - 1
7.80	0.00	8.80	0.00	O - 1
7.83	0.00	8.80	0.00	O - 1
8.05	0.00	8.80	0.00	O - 1
8.08	0.00	8.80	0.00	O - 1
8.30	0.00	8.80	0.00	O - 1
8.33	0.00	8.80	0.00	O - 1
8.55	0.00	8.80	0.00	O - 1
8.58	0.00	8.80	0.00	O - 1
8.80	0.00	8.80	0.00	O - 1
8.83	1.47	8.80	0.00	O - 1
9.00	3.80	8.80	0.00	O - 1 + Weir - 1
9.05	4.34	8.80	0.00	O - 1 + Weir - 1
9.08	4.69	8.80	0.00	O - 1 + Weir - 1
9.30	7.37	8.80	0.00	O - 1 + Weir - 1
9.33	7.76	8.80	0.00	O - 1 + Weir - 1
9.55	10.73	8.80	0.00	O - 1 + Weir - 1
9.58	11.16	8.80	0.00	O - 1 + Weir - 1
9.80	14.41	8.80	0.00	O - 1 + Weir - 1
9.83	14.87	8.80	0.00	O - 1 + Weir - 1
10.00	17.57	8.80	0.00	O - 1 + Weir - 1
10.08	18.88	8.80	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	9.00	0.00	O - 1
6.55	0.00	9.00	0.00	O - 1
6.58	0.00	9.00	0.00	O - 1
6.80	0.00	9.00	0.00	O - 1
6.83	0.00	9.00	0.00	O - 1
7.00	0.00	9.00	0.00	O - 1
7.05	0.00	9.00	0.00	O - 1
7.08	0.00	9.00	0.00	O - 1
7.30	0.00	9.00	0.00	O - 1
7.33	0.00	9.00	0.00	O - 1
7.55	0.00	9.00	0.00	O - 1
7.58	0.00	9.00	0.00	O - 1
7.80	0.00	9.00	0.00	O - 1
7.83	0.00	9.00	0.00	O - 1
8.05	0.00	9.00	0.00	O - 1
8.08	0.00	9.00	0.00	O - 1
8.30	0.00	9.00	0.00	O - 1
8.33	0.00	9.00	0.00	O - 1
8.55	0.00	9.00	0.00	O - 1
8.58	0.00	9.00	0.00	O - 1
8.80	0.00	9.00	0.00	O - 1
8.83	0.00	9.00	0.00	O - 1
9.00	0.00	9.00	0.00	O - 1 + Weir - 1
9.05	1.99	9.00	0.00	O - 1 + Weir - 1
9.08	2.59	9.00	0.00	O - 1 + Weir - 1
9.30	6.01	9.00	0.00	O - 1 + Weir - 1
9.33	6.45	9.00	0.00	O - 1 + Weir - 1
9.55	9.67	9.00	0.00	O - 1 + Weir - 1
9.58	10.12	9.00	0.00	O - 1 + Weir - 1
9.80	13.51	9.00	0.00	O - 1 + Weir - 1
9.83	13.99	9.00	0.00	O - 1 + Weir - 1
10.00	16.76	9.00	0.00	O - 1 + Weir - 1
10.08	18.10	9.00	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	9.05	0.00	O - 1
6.55	0.00	9.05	0.00	O - 1
6.58	0.00	9.05	0.00	O - 1
6.80	0.00	9.05	0.00	O - 1
6.83	0.00	9.05	0.00	O - 1
7.00	0.00	9.05	0.00	O - 1
7.05	0.00	9.05	0.00	O - 1
7.08	0.00	9.05	0.00	O - 1
7.30	0.00	9.05	0.00	O - 1
7.33	0.00	9.05	0.00	O - 1
7.55	0.00	9.05	0.00	O - 1
7.58	0.00	9.05	0.00	O - 1
7.80	0.00	9.05	0.00	O - 1
7.83	0.00	9.05	0.00	O - 1
8.05	0.00	9.05	0.00	O - 1
8.08	0.00	9.05	0.00	O - 1
8.30	0.00	9.05	0.00	O - 1
8.33	0.00	9.05	0.00	O - 1
8.55	0.00	9.05	0.00	O - 1
8.58	0.00	9.05	0.00	O - 1
8.80	0.00	9.05	0.00	O - 1
8.83	0.00	9.05	0.00	O - 1
9.00	0.00	9.05	0.00	O - 1
9.05	0.00	9.05	0.00	O - 1 + Weir - 1
9.08	1.62	9.05	0.00	O - 1 + Weir - 1
9.30	5.57	9.05	0.00	O - 1 + Weir - 1
9.33	6.03	9.05	0.00	O - 1 + Weir - 1
9.55	9.34	9.05	0.00	O - 1 + Weir - 1
9.58	9.80	9.05	0.00	O - 1 + Weir - 1
9.80	13.23	9.05	0.00	O - 1 + Weir - 1
9.83	13.71	9.05	0.00	O - 1 + Weir - 1
10.00	16.50	9.05	0.00	O - 1 + Weir - 1
10.08	17.86	9.05	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	9.30	0.00	O - 1
6.55	0.00	9.30	0.00	O - 1
6.58	0.00	9.30	0.00	O - 1
6.80	0.00	9.30	0.00	O - 1
6.83	0.00	9.30	0.00	O - 1
7.00	0.00	9.30	0.00	O - 1
7.05	0.00	9.30	0.00	O - 1
7.08	0.00	9.30	0.00	O - 1
7.30	0.00	9.30	0.00	O - 1
7.33	0.00	9.30	0.00	O - 1
7.55	0.00	9.30	0.00	O - 1
7.58	0.00	9.30	0.00	O - 1
7.80	0.00	9.30	0.00	O - 1
7.83	0.00	9.30	0.00	O - 1
8.05	0.00	9.30	0.00	O - 1
8.08	0.00	9.30	0.00	O - 1
8.30	0.00	9.30	0.00	O - 1
8.33	0.00	9.30	0.00	O - 1
8.55	0.00	9.30	0.00	O - 1
8.58	0.00	9.30	0.00	O - 1
8.80	0.00	9.30	0.00	O - 1
8.83	0.00	9.30	0.00	O - 1
9.00	0.00	9.30	0.00	O - 1
9.05	0.00	9.30	0.00	O - 1
9.08	0.00	9.30	0.00	O - 1
9.30	0.00	9.30	0.00	O - 1 + Weir - 1
9.33	2.19	9.30	0.00	O - 1 + Weir - 1
9.55	7.01	9.30	0.00	O - 1 + Weir - 1
9.58	7.55	9.30	0.00	O - 1 + Weir - 1
9.80	11.35	9.30	0.00	O - 1 + Weir - 1
9.83	11.87	9.30	0.00	O - 1 + Weir - 1
10.00	14.82	9.30	0.00	O - 1 + Weir - 1
10.08	16.22	9.30	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	9.55	0.00	O - 1
6.55	0.00	9.55	0.00	O - 1
6.58	0.00	9.55	0.00	O - 1
6.80	0.00	9.55	0.00	O - 1
6.83	0.00	9.55	0.00	O - 1
7.00	0.00	9.55	0.00	O - 1
7.05	0.00	9.55	0.00	O - 1
7.08	0.00	9.55	0.00	O - 1
7.30	0.00	9.55	0.00	O - 1
7.33	0.00	9.55	0.00	O - 1
7.55	0.00	9.55	0.00	O - 1
7.58	0.00	9.55	0.00	O - 1
7.80	0.00	9.55	0.00	O - 1
7.83	0.00	9.55	0.00	O - 1
8.05	0.00	9.55	0.00	O - 1
8.08	0.00	9.55	0.00	O - 1
8.30	0.00	9.55	0.00	O - 1
8.33	0.00	9.55	0.00	O - 1
8.55	0.00	9.55	0.00	O - 1
8.58	0.00	9.55	0.00	O - 1
8.80	0.00	9.55	0.00	O - 1
8.83	0.00	9.55	0.00	O - 1
9.00	0.00	9.55	0.00	O - 1
9.05	0.00	9.55	0.00	O - 1
9.08	0.00	9.55	0.00	O - 1
9.30	0.00	9.55	0.00	O - 1
9.33	0.00	9.55	0.00	O - 1
9.55	0.00	9.55	0.00	O - 1 + Weir - 1
9.58	2.83	9.55	0.00	O - 1 + Weir - 1
9.80	8.52	9.55	0.00	O - 1 + Weir - 1
9.83	9.13	9.55	0.00	O - 1 + Weir - 1
10.00	12.45	9.55	0.00	O - 1 + Weir - 1
10.08	13.97	9.55	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	9.80	0.00	O - 1
6.55	0.00	9.80	0.00	O - 1
6.58	0.00	9.80	0.00	O - 1
6.80	0.00	9.80	0.00	O - 1
6.83	0.00	9.80	0.00	O - 1
7.00	0.00	9.80	0.00	O - 1
7.05	0.00	9.80	0.00	O - 1
7.08	0.00	9.80	0.00	O - 1
7.30	0.00	9.80	0.00	O - 1
7.33	0.00	9.80	0.00	O - 1
7.55	0.00	9.80	0.00	O - 1
7.58	0.00	9.80	0.00	O - 1
7.80	0.00	9.80	0.00	O - 1
7.83	0.00	9.80	0.00	O - 1
8.05	0.00	9.80	0.00	O - 1
8.08	0.00	9.80	0.00	O - 1
8.30	0.00	9.80	0.00	O - 1
8.33	0.00	9.80	0.00	O - 1
8.55	0.00	9.80	0.00	O - 1
8.58	0.00	9.80	0.00	O - 1
8.80	0.00	9.80	0.00	O - 1
8.83	0.00	9.80	0.00	O - 1
9.00	0.00	9.80	0.00	O - 1
9.05	0.00	9.80	0.00	O - 1
9.08	0.00	9.80	0.00	O - 1
9.30	0.00	9.80	0.00	O - 1
9.33	0.00	9.80	0.00	O - 1
9.55	0.00	9.80	0.00	O - 1
9.58	0.00	9.80	0.00	O - 1
9.80	0.00	9.80	0.00	O - 1 + Weir - 1
9.83	3.50	9.80	0.00	O - 1 + Weir - 1
10.00	8.89	9.80	0.00	O - 1 + Weir - 1
10.08	10.77	9.80	0.00	O - 1 + Weir - 1

Outlet Structure Data

Subsection: Composite Rating Curve
Label: UGB Outlet Structure - 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)	Contributing Structures
6.33	0.00	10.00	0.00	O - 1
6.55	0.00	10.00	0.00	O - 1
6.58	0.00	10.00	0.00	O - 1
6.80	0.00	10.00	0.00	O - 1
6.83	0.00	10.00	0.00	O - 1
7.00	0.00	10.00	0.00	O - 1
7.05	0.00	10.00	0.00	O - 1
7.08	0.00	10.00	0.00	O - 1
7.30	0.00	10.00	0.00	O - 1
7.33	0.00	10.00	0.00	O - 1
7.55	0.00	10.00	0.00	O - 1
7.58	0.00	10.00	0.00	O - 1
7.80	0.00	10.00	0.00	O - 1
7.83	0.00	10.00	0.00	O - 1
8.05	0.00	10.00	0.00	O - 1
8.08	0.00	10.00	0.00	O - 1
8.30	0.00	10.00	0.00	O - 1
8.33	0.00	10.00	0.00	O - 1
8.55	0.00	10.00	0.00	O - 1
8.58	0.00	10.00	0.00	O - 1
8.80	0.00	10.00	0.00	O - 1
8.83	0.00	10.00	0.00	O - 1
9.00	0.00	10.00	0.00	O - 1
9.05	0.00	10.00	0.00	O - 1
9.08	0.00	10.00	0.00	O - 1
9.30	0.00	10.00	0.00	O - 1
9.33	0.00	10.00	0.00	O - 1
9.55	0.00	10.00	0.00	O - 1
9.58	0.00	10.00	0.00	O - 1
9.80	0.00	10.00	0.00	O - 1
9.83	0.00	10.00	0.00	O - 1
10.00	0.00	10.00	0.00	O - 1 + Weir - 1
10.08	6.35	10.00	0.00	O - 1 + Weir - 1

BASIN ROUTINGS CURRENT RAINFALL

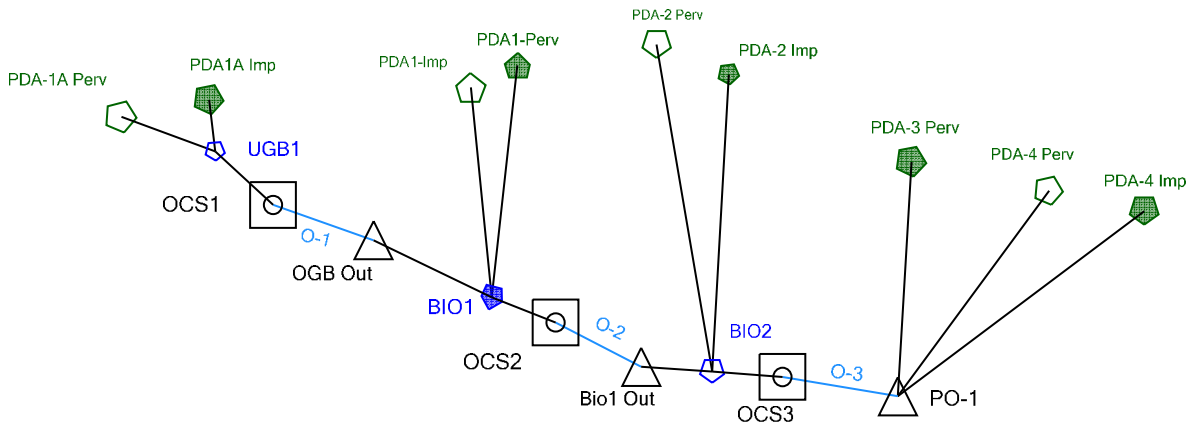


Table of Contents

Current Rainfall Basin Routings

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA1-Perv	2 year	2	2,363.00	12.150	0.65
PDA1-Perv	10 year	10	4,458.00	12.150	1.21
PDA1-Perv	25 year	25	5,964.00	12.150	1.60
PDA1-Perv	100 year	100	8,907.00	12.150	2.33
PDA1-Imp	2 year	2	5,189.00	12.150	1.19
PDA1-Imp	10 year	10	8,204.00	12.150	1.85
PDA1-Imp	25 year	25	10,276.00	12.150	2.30
PDA1-Imp	100 year	100	14,226.00	12.150	3.16
PDA-2 Perv	2 year	2	1,620.00	12.200	0.35
PDA-2 Perv	10 year	10	3,058.00	12.200	0.66
PDA-2 Perv	25 year	25	4,091.00	12.200	0.87
PDA-2 Perv	100 year	100	6,109.00	12.150	1.28
PDA-3 Perv	2 year	2	675.00	12.100	0.20
PDA-3 Perv	10 year	10	1,274.00	12.100	0.38
PDA-3 Perv	25 year	25	1,704.00	12.100	0.50
PDA-3 Perv	100 year	100	2,545.00	12.100	0.73
PDA-2 Imp	2 year	2	8,419.00	12.150	1.65
PDA-2 Imp	10 year	10	13,312.00	12.150	2.57
PDA-2 Imp	25 year	25	16,674.00	12.150	3.19
PDA-2 Imp	100 year	100	23,083.00	12.150	4.39
PDA-4 Perv	2 year	2	1,013.00	12.100	0.30
PDA-4 Perv	10 year	10	1,911.00	12.100	0.56
PDA-4 Perv	25 year	25	2,556.00	12.100	0.75
PDA-4 Perv	100 year	100	3,817.00	12.100	1.09
PDA1A Imp	2 year	2	27,099.00	12.100	7.18
PDA1A Imp	10 year	10	42,847.00	12.100	11.15
PDA1A Imp	25 year	25	53,668.00	12.100	13.87
PDA1A Imp	100 year	100	74,298.00	12.100	19.04
PDA-1A Perv	2 year	2	1,013.00	12.150	0.24
PDA-1A Perv	10 year	10	1,911.00	12.150	0.45
PDA-1A Perv	25 year	25	2,556.00	12.150	0.59
PDA-1A Perv	100 year	100	3,817.00	12.150	0.87
PDA-4 Imp	2 year	2	346.00	12.100	0.09
PDA-4 Imp	10 year	10	547.00	12.100	0.14
PDA-4 Imp	25 year	25	685.00	12.100	0.18
PDA-4 Imp	100 year	100	948.00	12.100	0.24

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PO-1	2 year	2	20,652.00	12.500	2.62

Current Rainfall Basin Routings

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PO-1	10 year	10	47,433.00	12.400	7.25
PO-1	25 year	25	66,924.00	12.350	10.65
PO-1	100 year	100	104,998.00	12.350	17.71

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB1 (IN)	2 year	2	28,112.00	12.100	7.38	(N/A)	(N/A)
UGB1 (OUT)	2 year	2	10,102.00	12.800	1.14	7.96	13,663.00
UGB1 (Reverse)	2 year	2	0.00	23.450	0.00	(N/A)	(N/A)
UGB1 (IN)	10 year	10	44,757.00	12.100	11.54	(N/A)	(N/A)
UGB1 (OUT)	10 year	10	24,821.00	12.500	3.46	8.57	19,282.00
UGB1 (Reverse)	10 year	10	0.00	27.900	0.00	(N/A)	(N/A)
UGB1 (IN)	25 year	25	56,224.00	12.100	14.38	(N/A)	(N/A)
UGB1 (OUT)	25 year	25	35,632.00	12.400	5.12	8.98	22,751.00
UGB1 (Reverse)	25 year	25	0.00	28.350	0.00	(N/A)	(N/A)
UGB1 (IN)	100 year	100	78,115.00	12.100	19.80	(N/A)	(N/A)
UGB1 (OUT)	100 year	100	56,707.00	12.250	10.20	9.59	27,047.00
UGB1 (Reverse)	100 year	100	0.00	26.250	0.00	(N/A)	(N/A)
BIO1 (IN)	2 year	2	17,653.00	12.150	1.84	(N/A)	(N/A)
BIO1 (OUT)	2 year	2	15,860.00	12.500	1.55	7.86	1,497.00
BIO1 (IN)	10 year	10	37,483.00	12.300	5.38	(N/A)	(N/A)
BIO1 (Reverse)	10 year	10	0.00	27.900	0.00	(N/A)	(N/A)
BIO1 (OUT)	10 year	10	35,558.00	12.350	5.07	8.41	2,338.00
BIO1 (IN)	25 year	25	51,872.00	12.150	8.29	(N/A)	(N/A)
BIO1 (Reverse)	25 year	25	0.00	28.350	0.00	(N/A)	(N/A)
BIO1 (OUT)	25 year	25	49,880.00	12.250	7.45	8.62	2,698.00
BIO1 (IN)	100 year	100	79,840.00	12.200	14.34	(N/A)	(N/A)
BIO1 (Reverse)	100 year	100	0.00	26.250	0.00	(N/A)	(N/A)
BIO1 (OUT)	100 year	100	77,754.00	12.300	13.56	9.06	3,520.00
BIO2 (IN)	2 year	2	25,900.00	12.200	3.48	(N/A)	(N/A)
BIO2 (OUT)	2 year	2	18,618.00	12.550	2.46	7.30	4,907.00
BIO2 (IN)	10 year	10	51,928.00	12.300	7.64	(N/A)	(N/A)

Current Rainfall Basin Routings

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
BIO2 (OUT)	10 year	10	43,702.00	12.400	6.87	7.67	6,444.00
BIO2 (IN)	25 year	25	70,645.00	12.200	11.29	(N/A)	(N/A)
BIO2 (OUT)	25 year	25	61,978.00	12.350	10.05	7.89	7,365.00
BIO2 (IN)	100 year	100	106,946.00	12.250	18.62	(N/A)	(N/A)
BIO2 (OUT)	100 year	100	97,688.00	12.350	16.86	8.29	9,415.00

Current Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: BIO1 (IN)
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
6.30	653.4	0.00
6.40	685.6	0.01
6.50	718.6	0.01
6.60	752.4	0.01
6.70	787.0	0.01
6.80	822.3	0.01
6.90	858.4	0.01
7.00	895.3	0.01
7.10	933.0	0.01
7.20	971.4	0.01
7.30	1,010.6	0.01
7.40	1,050.6	0.01
7.50	1,091.3	0.01
7.60	1,132.9	0.01
7.70	1,175.2	0.01
7.80	1,218.3	0.01
7.90	1,262.2	0.01
8.00	1,306.8	0.02
8.10	1,384.0	0.02
8.20	1,463.3	0.02
8.30	1,544.9	0.02
8.40	1,628.7	0.02
8.50	1,714.7	0.02
8.60	1,803.0	0.02
8.70	1,893.4	0.02
8.80	1,986.1	0.02
8.90	2,080.9	0.02
9.00	2,178.0	0.03
9.10	2,258.5	0.03
9.20	2,340.5	0.03
9.25	2,382.1	0.03
9.30	2,424.0	0.03
9.40	2,508.9	0.03
9.50	2,595.3	0.03
9.60	2,683.2	0.03
9.70	2,772.5	0.03
9.80	2,863.3	0.03
9.90	2,955.5	0.03
10.00	3,049.2	0.04

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.30	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	12.500	7.86	1,497.00

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	12.150	1.84	0.000	0.00
Infiltration...	12.500	0.00	0.000	0.00
Pond Outflow...	12.500	1.55	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	17,653.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	1,654.00	Forward
Pond Outflow...	0.00	Reverse	15,860.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	17,653.00 ft³
Volume (Total Out ICPM)	17,514.00 ft³
Volume (Ending)	138.00 ft³
Elevation (Ending)	6.44 ft
Difference	1.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.30	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.350	8.41	2,338.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.300	5.38	27.900	0.00
Infiltration...	12.350	0.00	0.000	0.00
Pond Outflow...	12.350	5.07	0.008	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	37,483.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	1,763.00	Forward
Pond Outflow...	0.00	Reverse	35,558.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	37,483.00 ft³
Volume (Total Out ICPM)	37,321.00 ft³
Volume (Ending)	161.00 ft³
Elevation (Ending)	6.47 ft
Difference	1.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.30	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.300	8.62	2,698.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.150	8.29	28.350	0.00
Infiltration...	12.300	0.00	0.000	0.00
Pond Outflow...	12.250	7.45	0.008	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	51,872.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	1,817.00	Forward
Pond Outflow...	0.00	Reverse	49,880.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	51,872.00 ft³
Volume (Total Out ICPM)	51,697.00 ft³
Volume (Ending)	174.00 ft³
Elevation (Ending)	6.48 ft
Difference	1.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.30	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	12.300	9.06	3,520.00

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	12.200	14.34	26.250	0.00
Infiltration...	12.300	0.00	0.000	0.00
Pond Outflow...	12.300	13.56	0.007	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	79,840.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	1,895.00	Forward
Pond Outflow...	0.00	Reverse	77,754.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	79,840.00 ft³
Volume (Total Out ICPM)	79,649.00 ft³
Volume (Ending)	190.00 ft³
Elevation (Ending)	6.50 ft
Difference	1.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Current Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: BIO2 (IN)
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
5.70	2,178.0	0.00
5.80	2,270.4	0.05
5.90	2,364.6	0.05
6.00	2,460.9	0.06
6.10	2,559.0	0.06
6.20	2,659.0	0.06
6.30	2,761.0	0.06
6.40	2,864.8	0.07
6.50	2,970.6	0.07
6.60	3,078.3	0.07
6.70	3,188.0	0.07
6.80	3,299.5	0.08
6.90	3,413.0	0.08
7.00	3,528.4	0.08
7.10	3,646.0	0.08
7.20	3,765.6	0.09
7.25	3,826.1	0.09
7.30	3,887.1	0.09
7.40	4,010.5	0.09
7.50	4,135.9	0.10
7.60	4,263.2	0.10
7.70	4,392.4	0.10
7.80	4,523.5	0.10
7.90	4,656.6	0.11
8.00	4,791.6	0.11
8.10	4,915.2	0.11
8.20	5,040.4	0.12
8.30	5,167.1	0.12
8.40	5,295.4	0.12
8.50	5,425.3	0.13
8.60	5,556.8	0.13
8.70	5,689.8	0.13
8.80	5,824.4	0.13
8.90	5,960.6	0.14
9.00	6,098.4	0.14

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	5.70	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.550	7.30	4,907.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.200	3.48	0.000	0.00
Infiltration...	12.550	0.00	0.000	0.00
Pond Outflow...	12.550	2.46	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	25,900.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	7,282.00	Forward
Pond Outflow...	0.00	Reverse	18,618.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	25,900.00 ft³
Volume (Total Out ICPM)	25,900.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	5.70 ft
Difference	0.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	5.70	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.400	7.67	6,444.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.300	7.64	0.000	0.00
Infiltration...	12.400	0.00	0.000	0.00
Pond Outflow...	12.400	6.87	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	51,928.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	8,226.00	Forward
Pond Outflow...	0.00	Reverse	43,702.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	51,928.00 ft³
Volume (Total Out ICPM)	51,928.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	5.70 ft
Difference	0.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	5.70	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.350	7.89	7,365.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.200	11.29	0.000	0.00
Infiltration...	12.350	0.00	0.000	0.00
Pond Outflow...	12.350	10.05	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	70,645.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	8,666.00	Forward
Pond Outflow...	0.00	Reverse	61,978.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	70,645.00 ft³
Volume (Total Out ICPM)	70,645.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	5.70 ft
Difference	0.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	5.70	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.350	8.29	9,415.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.250	18.62	0.000	0.00
Infiltration...	12.350	0.00	0.000	0.00
Pond Outflow...	12.350	16.86	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	106,946.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	9,258.00	Forward
Pond Outflow...	0.00	Reverse	97,688.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	106,946.00 ft³
Volume (Total Out ICPM)	106,946.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	5.70 ft
Difference	0.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Current Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
6.33	12,976.1	0.00
6.35	12,986.6	0.15
6.38	13,002.4	0.15
6.40	13,012.9	0.15
6.43	13,028.7	0.15
6.45	13,039.2	0.15
6.48	13,055.0	0.15
6.50	13,065.5	0.15
6.53	13,081.3	0.15
6.55	13,091.8	0.15
6.58	13,107.6	0.15
6.60	13,118.1	0.15
6.63	13,134.0	0.15
6.65	13,144.5	0.15
6.68	13,160.3	0.15
6.70	13,170.9	0.15
6.73	13,186.7	0.15
6.75	13,197.3	0.15
6.78	13,213.1	0.15
6.80	13,223.7	0.15
6.83	13,239.6	0.15
6.85	13,250.2	0.15
6.88	13,266.0	0.15
6.90	13,276.6	0.15
6.93	13,292.5	0.15
6.95	13,303.1	0.15
6.98	13,319.0	0.15
7.00	13,329.6	0.15
7.03	13,345.5	0.15
7.05	13,356.1	0.15
7.08	13,372.1	0.15
7.10	13,382.7	0.15
7.13	13,398.6	0.16
7.15	13,409.2	0.16
7.18	13,425.2	0.16
7.20	13,435.8	0.16
7.23	13,451.8	0.16
7.25	13,462.4	0.16
7.28	13,478.4	0.16
7.30	13,489.0	0.16
7.33	13,505.0	0.16
7.35	13,515.7	0.16

Current Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
7.38	13,531.7	0.16
7.40	13,542.4	0.16
7.43	13,558.4	0.16
7.45	13,569.0	0.16
7.48	13,585.1	0.16
7.50	13,595.7	0.16
7.53	13,611.8	0.16
7.55	13,622.5	0.16
7.58	13,638.5	0.16
7.60	13,649.2	0.16
7.63	13,665.3	0.16
7.65	13,676.0	0.16
7.68	13,692.0	0.16
7.70	13,702.7	0.16
7.73	13,718.8	0.16
7.75	13,729.6	0.16
7.78	13,745.6	0.16
7.80	13,756.4	0.16
7.83	13,772.5	0.16
7.85	13,783.2	0.16
7.88	13,799.3	0.16
7.90	13,810.1	0.16
7.93	13,826.2	0.16
7.95	13,837.0	0.16
7.98	13,853.1	0.16
8.00	13,863.9	0.16
8.03	13,880.0	0.16
8.05	13,890.8	0.16
8.08	13,907.0	0.16
8.10	13,917.7	0.16
8.13	13,933.9	0.16
8.15	13,944.7	0.16
8.18	13,960.9	0.16
8.20	13,971.7	0.16
8.23	13,987.9	0.16
8.25	13,998.7	0.16
8.28	14,014.9	0.16
8.30	14,025.7	0.16
8.33	14,041.9	0.16
8.35	14,052.7	0.16
8.38	14,069.0	0.16
8.40	14,079.8	0.16

Current Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
8.43	14,096.1	0.16
8.45	14,106.9	0.16
8.48	14,123.2	0.16
8.50	14,134.0	0.16
8.53	14,150.3	0.16
8.55	14,161.1	0.16
8.58	14,177.4	0.16
8.60	14,188.3	0.16
8.63	14,204.6	0.16
8.65	14,215.4	0.16
8.68	14,231.7	0.16
8.70	14,242.6	0.16
8.73	14,258.9	0.17
8.75	14,269.8	0.17
8.78	14,286.1	0.17
8.80	14,297.0	0.17
8.83	14,313.4	0.17
8.85	14,324.3	0.17
8.88	14,340.6	0.17
8.90	14,351.5	0.17
8.93	14,367.9	0.17
8.95	14,378.8	0.17
8.98	14,395.2	0.17
9.00	14,406.1	0.17
9.03	14,422.5	0.17
9.05	14,433.5	0.17
9.08	14,449.9	0.17
9.10	14,460.8	0.17
9.13	14,477.2	0.17
9.15	14,488.2	0.17
9.18	14,504.6	0.17
9.20	14,515.5	0.17
9.23	14,532.0	0.17
9.25	14,542.9	0.17
9.28	14,559.4	0.17
9.30	14,570.4	0.17
9.33	14,586.8	0.17
9.35	14,597.8	0.17
9.38	14,614.3	0.17
9.40	14,625.3	0.17
9.43	14,641.8	0.17
9.45	14,652.8	0.17

Current Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
9.48	14,669.3	0.17
9.50	14,680.3	0.17
9.53	14,696.8	0.17
9.55	14,707.8	0.17
9.58	14,724.3	0.17
9.60	14,735.3	0.17
9.63	14,751.9	0.17
9.65	14,762.9	0.17
9.68	14,779.4	0.17
9.70	14,790.5	0.17
9.73	14,807.0	0.17
9.75	14,818.1	0.17
9.78	14,834.6	0.17
9.80	14,845.7	0.17
9.83	14,862.3	0.17
9.85	14,873.3	0.17
9.88	14,889.9	0.17
9.90	14,901.0	0.17
9.93	14,917.6	0.17
9.95	14,928.7	0.17
9.98	14,945.3	0.17
10.00	14,956.4	0.17
10.03	14,973.0	0.17
10.08	15,000.8	0.17

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB1
Scenario: 2 year

Return Event: 2 years
Storm Event: 2yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.33	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.700	7.96	13,663.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	7.38	0.000	0.00
Infiltration...	12.700	0.00	0.007	0.00
Pond Outflow...	12.800	1.14	23.450	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	28,112.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	18,024.00	Forward
Pond Outflow...	0.00	Reverse	10,102.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	28,112.00 ft³
Volume (Total Out ICPM)	28,126.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	6.33 ft
Difference	-14.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.05 %

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB1
Scenario: 10 year

Return Event: 10 years
Storm Event: 10yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.33	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.450	8.57	19,282.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	11.54	0.000	0.00
Infiltration...	12.450	0.00	0.008	0.00
Pond Outflow...	12.500	3.46	27.900	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	44,757.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	19,986.00	Forward
Pond Outflow...	0.00	Reverse	24,821.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	44,758.00 ft³
Volume (Total Out ICPM)	44,807.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	6.33 ft
Difference	-49.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.11 %

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB1
Scenario: 25 year

Return Event: 25 years
Storm Event: 25yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.33	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.400	8.98	22,751.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	14.38	0.000	0.00
Infiltration...	12.400	0.00	0.008	0.00
Pond Outflow...	12.400	5.12	28.350	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	56,224.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	20,667.00	Forward
Pond Outflow...	0.00	Reverse	35,632.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	56,224.00 ft³
Volume (Total Out ICPM)	56,299.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	6.33 ft
Difference	-75.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.13 %

Current Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100yr Type C

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.33	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.300	9.59	27,047.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	19.80	0.000	0.00
Infiltration...	12.300	0.00	0.007	0.00
Pond Outflow...	12.250	10.20	26.250	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	78,115.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	21,414.00	Forward
Pond Outflow...	0.00	Reverse	56,707.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	78,116.00 ft³
Volume (Total Out ICPM)	78,121.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	6.33 ft
Difference	-6.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.01 %

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Projected Rainfall Basin Routings

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA1-Perv	2yr projected	2	2,868.00	12.150	0.80
PDA1-Perv	10yr projected	10	5,308.00	12.150	1.45
PDA1-Perv	25 yr projected	25	7,379.00	12.150	1.98
PDA1-Perv	100yr projected	100	11,589.00	12.150	3.02
PDA1-Imp	2yr projected	2	5,938.00	12.150	1.38
PDA1-Imp	10yr projected	10	9,379.00	12.150	2.14
PDA1-Imp	25 yr projected	25	12,186.00	12.150	2.76
PDA1-Imp	100yr projected	100	17,770.00	12.150	3.99
PDA-2 Perv	2yr projected	2	1,966.00	12.150	0.43
PDA-2 Perv	10yr projected	10	3,640.00	12.150	0.80
PDA-2 Perv	25 yr projected	25	5,060.00	12.150	1.10
PDA-2 Perv	100yr projected	100	7,947.00	12.150	1.69
PDA-3 Perv	2yr projected	2	819.00	12.100	0.24
PDA-3 Perv	10yr projected	10	1,516.00	12.100	0.44
PDA-3 Perv	25 yr projected	25	2,108.00	12.100	0.61
PDA-3 Perv	100yr projected	100	3,311.00	12.100	0.93
PDA-2 Imp	2yr projected	2	9,634.00	12.150	1.93
PDA-2 Imp	10yr projected	10	15,216.00	12.150	3.00
PDA-2 Imp	25 yr projected	25	19,771.00	12.150	3.86
PDA-2 Imp	100yr projected	100	28,830.00	12.150	5.59
PDA-4 Perv	2yr projected	2	1,229.00	12.100	0.36
PDA-4 Perv	10yr projected	10	2,275.00	12.100	0.67
PDA-4 Perv	25 yr projected	25	3,162.00	12.100	0.91
PDA-4 Perv	100yr projected	100	4,966.00	12.100	1.40
PDA1A Imper	2yr projected	2	31,012.00	12.100	8.17
PDA1A Imper	10yr projected	10	48,981.00	12.100	12.69
PDA1A Imper	25 yr projected	25	63,641.00	12.100	16.37
PDA1A Imper	100yr projected	100	92,801.00	12.100	23.67
PDA-1A Perv	2yr projected	2	1,229.00	12.150	0.30
PDA-1A Perv	10yr projected	10	2,275.00	12.150	0.55
PDA-1A Perv	25 yr projected	25	3,162.00	12.150	0.75
PDA-1A Perv	100yr projected	100	4,967.00	12.150	1.15
PDA-4 Imp	2yr projected	2	396.00	12.100	0.10
PDA-4 Imp	10yr projected	10	625.00	12.100	0.16
PDA-4 Imp	25 yr projected	25	812.00	12.100	0.21
PDA-4 Imp	100yr projected	100	1,185.00	12.100	0.30

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PO-1	2yr projected	2	27,050.00	12.450	3.48

Projected Rainfall Basin Routings

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PO-1	10yr projected	10	58,398.00	12.350	9.22
PO-1	25 yr projected	25	85,202.00	12.350	13.93
PO-1	100yr projected	100	139,732.00	12.350	24.62

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB1 (IN)	2yr projected	2	32,241.00	12.100	8.43	(N/A)	(N/A)
UGB1 (OUT)	2yr projected	2	13,585.00	12.750	1.46	8.16	15,549.00
UGB1 (Reverse)	2yr projected	2	0.00	26.100	0.00	(N/A)	(N/A)
UGB1 (IN)	10yr projected	10	51,256.00	12.100	13.17	(N/A)	(N/A)
UGB1 (OUT)	10yr projected	10	30,898.00	12.400	4.43	8.80	21,297.00
UGB1 (Reverse)	10yr projected	10	0.00	25.550	0.00	(N/A)	(N/A)
UGB1 (IN)	25 yr projected	25	66,803.00	12.100	17.03	(N/A)	(N/A)
UGB1 (OUT)	25 yr projected	25	45,738.00	12.300	7.38	9.31	25,251.00
UGB1 (Reverse)	25 yr projected	25	0.00	26.850	0.00	(N/A)	(N/A)
UGB1 (IN)	100yr projected	100	97,768.00	12.100	24.69	(N/A)	(N/A)
UGB1 (OUT)	100yr projected	100	75,946.00	12.200	15.00	10.00	29,472.00
UGB1 (Reverse)	100yr projected	100	0.00	26.600	0.00	(N/A)	(N/A)
BIO1 (IN)	2yr projected	2	22,391.00	12.350	2.23	(N/A)	(N/A)
BIO1 (Reverse)	2yr projected	2	0.00	26.100	0.00	(N/A)	(N/A)
BIO1 (OUT)	2yr projected	2	20,567.00	12.550	2.06	8.04	1,708.00
BIO1 (IN)	10yr projected	10	45,586.00	12.150	7.19	(N/A)	(N/A)
BIO1 (Reverse)	10yr projected	10	0.00	25.550	0.00	(N/A)	(N/A)
BIO1 (OUT)	10yr projected	10	43,620.00	12.250	6.43	8.53	2,548.00
BIO1 (IN)	25 yr projected	25	65,303.00	12.250	10.52	(N/A)	(N/A)
BIO1 (Reverse)	25 yr projected	25	0.00	26.850	0.00	(N/A)	(N/A)
BIO1 (OUT)	25 yr projected	25	63,264.00	12.300	10.19	8.83	3,057.00

Projected Rainfall Basin Routings

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
BIO1 (IN)	100yr projected	100	105,305.00	12.200	21.04	(N/A)	(N/A)
BIO1 (Reverse)	100yr projected	100	0.00	26.600	0.00	(N/A)	(N/A)
BIO1 (OUT)	100yr projected	100	103,153.00	12.250	19.48	9.39	4,365.00
BIO2 (IN)	2yr projected	2	32,168.00	12.200	4.03	(N/A)	(N/A)
BIO2 (OUT)	2yr projected	2	24,606.00	12.450	3.26	7.37	5,190.00
BIO2 (IN)	10yr projected	10	62,476.00	12.200	9.85	(N/A)	(N/A)
BIO2 (OUT)	10yr projected	10	53,982.00	12.400	8.72	7.80	6,995.00
BIO2 (IN)	25 yr projected	25	88,094.00	12.250	14.40	(N/A)	(N/A)
BIO2 (OUT)	25 yr projected	25	79,119.00	12.350	13.21	8.09	8,289.00
BIO2 (IN)	100yr projected	100	139,930.00	12.250	25.98	(N/A)	(N/A)
BIO2 (OUT)	100yr projected	100	130,270.00	12.350	23.54	8.60	11,094.00

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: BIO1 (IN)
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
6.30	653.4	0.00
6.40	685.6	0.01
6.50	718.6	0.01
6.60	752.4	0.01
6.70	787.0	0.01
6.80	822.3	0.01
6.90	858.4	0.01
7.00	895.3	0.01
7.10	933.0	0.01
7.20	971.4	0.01
7.30	1,010.6	0.01
7.40	1,050.6	0.01
7.50	1,091.3	0.01
7.60	1,132.9	0.01
7.70	1,175.2	0.01
7.80	1,218.3	0.01
7.90	1,262.2	0.01
8.00	1,306.8	0.02
8.10	1,384.0	0.02
8.20	1,463.3	0.02
8.30	1,544.9	0.02
8.40	1,628.7	0.02
8.50	1,714.7	0.02
8.60	1,803.0	0.02
8.70	1,893.4	0.02
8.80	1,986.1	0.02
8.90	2,080.9	0.02
9.00	2,178.0	0.03
9.10	2,258.5	0.03
9.20	2,340.5	0.03
9.25	2,382.1	0.03
9.30	2,424.0	0.03
9.40	2,508.9	0.03
9.50	2,595.3	0.03
9.60	2,683.2	0.03
9.70	2,772.5	0.03
9.80	2,863.3	0.03
9.90	2,955.5	0.03
10.00	3,049.2	0.04

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.30	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	12.550	8.04	1,708.00

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	12.350	2.23	26.100	0.00
Infiltration...	12.550	0.00	0.000	0.00
Pond Outflow...	12.550	2.06	0.007	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	22,391.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	1,684.00	Forward
Pond Outflow...	0.00	Reverse	20,567.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	22,391.00 ft³
Volume (Total Out ICPM)	22,251.00 ft³
Volume (Ending)	139.00 ft³
Elevation (Ending)	6.44 ft
Difference	1.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.30	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.350	8.53	2,548.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.150	7.19	25.550	0.00
Infiltration...	12.350	0.00	0.000	0.00
Pond Outflow...	12.250	6.43	0.007	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	45,586.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	1,796.00	Forward
Pond Outflow...	0.00	Reverse	43,620.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	45,586.00 ft³
Volume (Total Out ICPM)	45,415.00 ft³
Volume (Ending)	169.00 ft³
Elevation (Ending)	6.48 ft
Difference	1.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.30	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.350	8.83	3,057.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.250	10.52	26.850	0.00
Infiltration...	12.350	0.00	0.000	0.00
Pond Outflow...	12.300	10.19	0.007	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	65,303.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	1,857.00	Forward
Pond Outflow...	0.00	Reverse	63,264.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	65,303.00 ft³
Volume (Total Out ICPM)	65,121.00 ft³
Volume (Ending)	181.00 ft³
Elevation (Ending)	6.49 ft
Difference	1.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: BIO1 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
6.30	653.4	0.00
6.40	685.6	0.01
6.50	718.6	0.01
6.60	752.4	0.01
6.70	787.0	0.01
6.80	822.3	0.01
6.90	858.4	0.01
7.00	895.3	0.01
7.10	933.0	0.01
7.20	971.4	0.01
7.30	1,010.6	0.01
7.40	1,050.6	0.01
7.50	1,091.3	0.01
7.60	1,132.9	0.01
7.70	1,175.2	0.01
7.80	1,218.3	0.01
7.90	1,262.2	0.01
8.00	1,306.8	0.02
8.10	1,384.0	0.02
8.20	1,463.3	0.02
8.30	1,544.9	0.02
8.40	1,628.7	0.02
8.50	1,714.7	0.02
8.60	1,803.0	0.02
8.70	1,893.4	0.02
8.80	1,986.1	0.02
8.90	2,080.9	0.02
9.00	2,178.0	0.03
9.10	2,258.5	0.03
9.20	2,340.5	0.03
9.25	2,382.1	0.03
9.30	2,424.0	0.03
9.40	2,508.9	0.03
9.50	2,595.3	0.03
9.60	2,683.2	0.03
9.70	2,772.5	0.03
9.80	2,863.3	0.03
9.90	2,955.5	0.03
10.00	3,049.2	0.04

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.30	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	12.300	9.39	4,365.00

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	12.200	21.04	26.600	0.00
Infiltration...	12.300	0.00	0.000	0.00
Pond Outflow...	12.250	19.48	0.007	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	105,305.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	1,950.00	Forward
Pond Outflow...	0.00	Reverse	103,153.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	105,305.00 ft³
Volume (Total Out ICPM)	105,104.00 ft³
Volume (Ending)	200.00 ft³
Elevation (Ending)	6.51 ft
Difference	1.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: BIO2 (IN)
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
5.70	2,178.0	0.00
5.80	2,270.4	0.05
5.90	2,364.6	0.05
6.00	2,460.9	0.06
6.10	2,559.0	0.06
6.20	2,659.0	0.06
6.30	2,761.0	0.06
6.40	2,864.8	0.07
6.50	2,970.6	0.07
6.60	3,078.3	0.07
6.70	3,188.0	0.07
6.80	3,299.5	0.08
6.90	3,413.0	0.08
7.00	3,528.4	0.08
7.10	3,646.0	0.08
7.20	3,765.6	0.09
7.25	3,826.1	0.09
7.30	3,887.1	0.09
7.40	4,010.5	0.09
7.50	4,135.9	0.10
7.60	4,263.2	0.10
7.70	4,392.4	0.10
7.80	4,523.5	0.10
7.90	4,656.6	0.11
8.00	4,791.6	0.11
8.10	4,915.2	0.11
8.20	5,040.4	0.12
8.30	5,167.1	0.12
8.40	5,295.4	0.12
8.50	5,425.3	0.13
8.60	5,556.8	0.13
8.70	5,689.8	0.13
8.80	5,824.4	0.13
8.90	5,960.6	0.14
9.00	6,098.4	0.14

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	5.70	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	12.450	7.37	5,190.00

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	12.200	4.03	0.000	0.00
Infiltration...	12.450	0.00	0.000	0.00
Pond Outflow...	12.450	3.26	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	32,168.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	7,562.00	Forward
Pond Outflow...	0.00	Reverse	24,606.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	32,168.00 ft³
Volume (Total Out ICPM)	32,168.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	5.70 ft
Difference	0.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	5.70	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.400	7.80	6,995.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.200	9.85	0.000	0.00
Infiltration...	12.400	0.00	0.000	0.00
Pond Outflow...	12.400	8.72	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	62,476.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	8,494.00	Forward
Pond Outflow...	0.00	Reverse	53,982.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	62,476.00 ft³
Volume (Total Out ICPM)	62,476.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	5.70 ft
Difference	0.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	5.70	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.350	8.09	8,289.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.250	14.40	0.000	0.00
Infiltration...	12.350	0.00	0.000	0.00
Pond Outflow...	12.350	13.21	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	88,094.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	8,975.00	Forward
Pond Outflow...	0.00	Reverse	79,119.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	88,094.00 ft³
Volume (Total Out ICPM)	88,094.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	5.70 ft
Difference	0.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: BIO2 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
5.70	2,178.0	0.00
5.80	2,270.4	0.05
5.90	2,364.6	0.05
6.00	2,460.9	0.06
6.10	2,559.0	0.06
6.20	2,659.0	0.06
6.30	2,761.0	0.06
6.40	2,864.8	0.07
6.50	2,970.6	0.07
6.60	3,078.3	0.07
6.70	3,188.0	0.07
6.80	3,299.5	0.08
6.90	3,413.0	0.08
7.00	3,528.4	0.08
7.10	3,646.0	0.08
7.20	3,765.6	0.09
7.25	3,826.1	0.09
7.30	3,887.1	0.09
7.40	4,010.5	0.09
7.50	4,135.9	0.10
7.60	4,263.2	0.10
7.70	4,392.4	0.10
7.80	4,523.5	0.10
7.90	4,656.6	0.11
8.00	4,791.6	0.11
8.10	4,915.2	0.11
8.20	5,040.4	0.12
8.30	5,167.1	0.12
8.40	5,295.4	0.12
8.50	5,425.3	0.13
8.60	5,556.8	0.13
8.70	5,689.8	0.13
8.80	5,824.4	0.13
8.90	5,960.6	0.14
9.00	6,098.4	0.14

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	5.70	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	12.350	8.60	11,094.00

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	12.250	25.98	0.000	0.00
Infiltration...	12.350	0.00	0.000	0.00
Pond Outflow...	12.350	23.54	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	139,930.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	9,660.00	Forward
Pond Outflow...	0.00	Reverse	130,270.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	139,930.00 ft³
Volume (Total Out ICPM)	139,930.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	5.70 ft
Difference	0.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
6.33	12,976.1	0.00
6.35	12,986.6	0.15
6.38	13,002.4	0.15
6.40	13,012.9	0.15
6.43	13,028.7	0.15
6.45	13,039.2	0.15
6.48	13,055.0	0.15
6.50	13,065.5	0.15
6.53	13,081.3	0.15
6.55	13,091.8	0.15
6.58	13,107.6	0.15
6.60	13,118.1	0.15
6.63	13,134.0	0.15
6.65	13,144.5	0.15
6.68	13,160.3	0.15
6.70	13,170.9	0.15
6.73	13,186.7	0.15
6.75	13,197.3	0.15
6.78	13,213.1	0.15
6.80	13,223.7	0.15
6.83	13,239.6	0.15
6.85	13,250.2	0.15
6.88	13,266.0	0.15
6.90	13,276.6	0.15
6.93	13,292.5	0.15
6.95	13,303.1	0.15
6.98	13,319.0	0.15
7.00	13,329.6	0.15
7.03	13,345.5	0.15
7.05	13,356.1	0.15
7.08	13,372.1	0.15
7.10	13,382.7	0.15
7.13	13,398.6	0.16
7.15	13,409.2	0.16
7.18	13,425.2	0.16
7.20	13,435.8	0.16
7.23	13,451.8	0.16
7.25	13,462.4	0.16
7.28	13,478.4	0.16
7.30	13,489.0	0.16
7.33	13,505.0	0.16
7.35	13,515.7	0.16

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
7.38	13,531.7	0.16
7.40	13,542.4	0.16
7.43	13,558.4	0.16
7.45	13,569.0	0.16
7.48	13,585.1	0.16
7.50	13,595.7	0.16
7.53	13,611.8	0.16
7.55	13,622.5	0.16
7.58	13,638.5	0.16
7.60	13,649.2	0.16
7.63	13,665.3	0.16
7.65	13,676.0	0.16
7.68	13,692.0	0.16
7.70	13,702.7	0.16
7.73	13,718.8	0.16
7.75	13,729.6	0.16
7.78	13,745.6	0.16
7.80	13,756.4	0.16
7.83	13,772.5	0.16
7.85	13,783.2	0.16
7.88	13,799.3	0.16
7.90	13,810.1	0.16
7.93	13,826.2	0.16
7.95	13,837.0	0.16
7.98	13,853.1	0.16
8.00	13,863.9	0.16
8.03	13,880.0	0.16
8.05	13,890.8	0.16
8.08	13,907.0	0.16
8.10	13,917.7	0.16
8.13	13,933.9	0.16
8.15	13,944.7	0.16
8.18	13,960.9	0.16
8.20	13,971.7	0.16
8.23	13,987.9	0.16
8.25	13,998.7	0.16
8.28	14,014.9	0.16
8.30	14,025.7	0.16
8.33	14,041.9	0.16
8.35	14,052.7	0.16
8.38	14,069.0	0.16
8.40	14,079.8	0.16

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
8.43	14,096.1	0.16
8.45	14,106.9	0.16
8.48	14,123.2	0.16
8.50	14,134.0	0.16
8.53	14,150.3	0.16
8.55	14,161.1	0.16
8.58	14,177.4	0.16
8.60	14,188.3	0.16
8.63	14,204.6	0.16
8.65	14,215.4	0.16
8.68	14,231.7	0.16
8.70	14,242.6	0.16
8.73	14,258.9	0.17
8.75	14,269.8	0.17
8.78	14,286.1	0.17
8.80	14,297.0	0.17
8.83	14,313.4	0.17
8.85	14,324.3	0.17
8.88	14,340.6	0.17
8.90	14,351.5	0.17
8.93	14,367.9	0.17
8.95	14,378.8	0.17
8.98	14,395.2	0.17
9.00	14,406.1	0.17
9.03	14,422.5	0.17
9.05	14,433.5	0.17
9.08	14,449.9	0.17
9.10	14,460.8	0.17
9.13	14,477.2	0.17
9.15	14,488.2	0.17
9.18	14,504.6	0.17
9.20	14,515.5	0.17
9.23	14,532.0	0.17
9.25	14,542.9	0.17
9.28	14,559.4	0.17
9.30	14,570.4	0.17
9.33	14,586.8	0.17
9.35	14,597.8	0.17
9.38	14,614.3	0.17
9.40	14,625.3	0.17
9.43	14,641.8	0.17
9.45	14,652.8	0.17

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
9.48	14,669.3	0.17
9.50	14,680.3	0.17
9.53	14,696.8	0.17
9.55	14,707.8	0.17
9.58	14,724.3	0.17
9.60	14,735.3	0.17
9.63	14,751.9	0.17
9.65	14,762.9	0.17
9.68	14,779.4	0.17
9.70	14,790.5	0.17
9.73	14,807.0	0.17
9.75	14,818.1	0.17
9.78	14,834.6	0.17
9.80	14,845.7	0.17
9.83	14,862.3	0.17
9.85	14,873.3	0.17
9.88	14,889.9	0.17
9.90	14,901.0	0.17
9.93	14,917.6	0.17
9.95	14,928.7	0.17
9.98	14,945.3	0.17
10.00	14,956.4	0.17
10.03	14,973.0	0.17
10.08	15,000.8	0.17

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB1
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.33	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.600	8.16	15,549.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	8.43	0.000	0.00
Infiltration...	12.600	0.00	0.007	0.00
Pond Outflow...	12.750	1.46	26.100	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	32,241.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	18,648.00	Forward
Pond Outflow...	0.00	Reverse	13,585.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	32,241.00 ft³
Volume (Total Out ICPM)	32,233.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	6.33 ft
Difference	7.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.02 %

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB1
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.33	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.400	8.80	21,297.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	13.17	0.000	0.00
Infiltration...	12.400	0.00	0.007	0.00
Pond Outflow...	12.400	4.43	25.550	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	51,256.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	20,419.00	Forward
Pond Outflow...	0.00	Reverse	30,898.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	51,256.00 ft³
Volume (Total Out ICPM)	51,317.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	6.33 ft
Difference	-61.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.12 %

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB1
Scenario: 25 yr projected

Return Event: 25 years
Storm Event: 25yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.33	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	12.350	9.31	25,251.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	17.03	0.000	0.00
Infiltration...	12.350	0.00	0.007	0.00
Pond Outflow...	12.300	7.38	26.850	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	66,803.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	21,066.00	Forward
Pond Outflow...	0.00	Reverse	45,738.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	66,803.00 ft³
Volume (Total Out ICPM)	66,804.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	6.33 ft
Difference	-1.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
6.33	12,976.1	0.00
6.35	12,986.6	0.15
6.38	13,002.4	0.15
6.40	13,012.9	0.15
6.43	13,028.7	0.15
6.45	13,039.2	0.15
6.48	13,055.0	0.15
6.50	13,065.5	0.15
6.53	13,081.3	0.15
6.55	13,091.8	0.15
6.58	13,107.6	0.15
6.60	13,118.1	0.15
6.63	13,134.0	0.15
6.65	13,144.5	0.15
6.68	13,160.3	0.15
6.70	13,170.9	0.15
6.73	13,186.7	0.15
6.75	13,197.3	0.15
6.78	13,213.1	0.15
6.80	13,223.7	0.15
6.83	13,239.6	0.15
6.85	13,250.2	0.15
6.88	13,266.0	0.15
6.90	13,276.6	0.15
6.93	13,292.5	0.15
6.95	13,303.1	0.15
6.98	13,319.0	0.15
7.00	13,329.6	0.15
7.03	13,345.5	0.15
7.05	13,356.1	0.15
7.08	13,372.1	0.15
7.10	13,382.7	0.15
7.13	13,398.6	0.16
7.15	13,409.2	0.16
7.18	13,425.2	0.16
7.20	13,435.8	0.16
7.23	13,451.8	0.16
7.25	13,462.4	0.16
7.28	13,478.4	0.16
7.30	13,489.0	0.16
7.33	13,505.0	0.16
7.35	13,515.7	0.16

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
7.38	13,531.7	0.16
7.40	13,542.4	0.16
7.43	13,558.4	0.16
7.45	13,569.0	0.16
7.48	13,585.1	0.16
7.50	13,595.7	0.16
7.53	13,611.8	0.16
7.55	13,622.5	0.16
7.58	13,638.5	0.16
7.60	13,649.2	0.16
7.63	13,665.3	0.16
7.65	13,676.0	0.16
7.68	13,692.0	0.16
7.70	13,702.7	0.16
7.73	13,718.8	0.16
7.75	13,729.6	0.16
7.78	13,745.6	0.16
7.80	13,756.4	0.16
7.83	13,772.5	0.16
7.85	13,783.2	0.16
7.88	13,799.3	0.16
7.90	13,810.1	0.16
7.93	13,826.2	0.16
7.95	13,837.0	0.16
7.98	13,853.1	0.16
8.00	13,863.9	0.16
8.03	13,880.0	0.16
8.05	13,890.8	0.16
8.08	13,907.0	0.16
8.10	13,917.7	0.16
8.13	13,933.9	0.16
8.15	13,944.7	0.16
8.18	13,960.9	0.16
8.20	13,971.7	0.16
8.23	13,987.9	0.16
8.25	13,998.7	0.16
8.28	14,014.9	0.16
8.30	14,025.7	0.16
8.33	14,041.9	0.16
8.35	14,052.7	0.16
8.38	14,069.0	0.16
8.40	14,079.8	0.16

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
8.43	14,096.1	0.16
8.45	14,106.9	0.16
8.48	14,123.2	0.16
8.50	14,134.0	0.16
8.53	14,150.3	0.16
8.55	14,161.1	0.16
8.58	14,177.4	0.16
8.60	14,188.3	0.16
8.63	14,204.6	0.16
8.65	14,215.4	0.16
8.68	14,231.7	0.16
8.70	14,242.6	0.16
8.73	14,258.9	0.17
8.75	14,269.8	0.17
8.78	14,286.1	0.17
8.80	14,297.0	0.17
8.83	14,313.4	0.17
8.85	14,324.3	0.17
8.88	14,340.6	0.17
8.90	14,351.5	0.17
8.93	14,367.9	0.17
8.95	14,378.8	0.17
8.98	14,395.2	0.17
9.00	14,406.1	0.17
9.03	14,422.5	0.17
9.05	14,433.5	0.17
9.08	14,449.9	0.17
9.10	14,460.8	0.17
9.13	14,477.2	0.17
9.15	14,488.2	0.17
9.18	14,504.6	0.17
9.20	14,515.5	0.17
9.23	14,532.0	0.17
9.25	14,542.9	0.17
9.28	14,559.4	0.17
9.30	14,570.4	0.17
9.33	14,586.8	0.17
9.35	14,597.8	0.17
9.38	14,614.3	0.17
9.40	14,625.3	0.17
9.43	14,641.8	0.17
9.45	14,652.8	0.17

Projected Rainfall Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB1 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
9.48	14,669.3	0.17
9.50	14,680.3	0.17
9.53	14,696.8	0.17
9.55	14,707.8	0.17
9.58	14,724.3	0.17
9.60	14,735.3	0.17
9.63	14,751.9	0.17
9.65	14,762.9	0.17
9.68	14,779.4	0.17
9.70	14,790.5	0.17
9.73	14,807.0	0.17
9.75	14,818.1	0.17
9.78	14,834.6	0.17
9.80	14,845.7	0.17
9.83	14,862.3	0.17
9.85	14,873.3	0.17
9.88	14,889.9	0.17
9.90	14,901.0	0.17
9.93	14,917.6	0.17
9.95	14,928.7	0.17
9.98	14,945.3	0.17
10.00	14,956.4	0.17
10.03	14,973.0	0.17
10.08	15,000.8	0.17

Projected Rainfall Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB1
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100yr C projected

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.33	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	12.250	10.00	29,472.00

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	12.100	24.69	0.000	0.00
Infiltration...	12.250	0.00	0.007	0.00
Pond Outflow...	12.200	15.00	26.600	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	97,768.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	21,829.00	Forward
Pond Outflow...	0.00	Reverse	75,946.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	97,768.00 ft³
Volume (Total Out ICPM)	97,775.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	6.33 ft
Difference	-6.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.01 %

Appendix D

Table of Contents

WQ Hydrographs and Routings

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-2 Imp	base	1	1,690.00	1.150	0.80
PDA1-Imp	base	1	1,051.00	1.100	0.58

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PO-1	base	1	0.00	0.000	0.00

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
BIO1 (IN)	base	1	1,051.00	1.100	0.58	(N/A)	(N/A)
BIO1 (OUT)	base	1	2.00	2.150	0.00	7.30	965.00
BIO2 (IN)	base	1	1,692.00	1.150	0.80	(N/A)	(N/A)
BIO2 (OUT)	base	1	0.00	0.000	0.00	6.19	1,397.00

WQ Hydrographs and Routings

Subsection: Time-Depth Curve
Label: wq
Scenario: base

Return Event: 1 years
Storm Event: Gauged Event (1.3 in)

Time-Depth Curve: Gauged Event (1.3 in)	
Label	Gauged Event (1.3 in)
Start Time	0.000 hours
Increment	0.083 hours
End Time	1.999 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.083 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	0.00	0.01	0.02	0.03	0.05
0.417	0.08	0.10	0.13	0.17	0.20
0.833	0.26	0.36	0.63	0.89	0.99
1.250	1.05	1.08	1.12	1.15	1.18
1.666	1.20	1.23	1.23	1.24	1.25

WQ Hydrographs and Routings

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: base

Return Event: 1 years
Storm Event: Gauged Event (1.3 in)

Storm Event	Gauged Event (1.3 in)
Return Event	1 years
Duration	24.000 hours
Depth	1.25 in
Time of Concentration (Composite)	0.130 hours
Area (User Defined)	0.280 acres
Computational Time Increment	0.017 hours
Time to Peak (Computed)	1.128 hours
Flow (Peak, Computed)	0.59 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	0.58 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.280 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.03 in
Runoff Volume (Pervious)	1,051.54 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,051.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.130 hours
Computational Time Increment	0.017 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440

WQ Hydrographs and Routings

Subsection: Unit Hydrograph Summary
Label: PDA1-Imp
Scenario: base

Return Event: 1 years
Storm Event: Gauged Event (1.3 in)

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	1.42 ft³/s
Unit peak time, Tp	0.087 hours
Unit receding limb, Tr	0.763 hours
Total unit time, Tb	0.850 hours

WQ Hydrographs and Routings

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: base

Return Event: 1 years
Storm Event: Gauged Event (1.3 in)

Storm Event	Gauged Event (1.3 in)
Return Event	1 years
Duration	24.000 hours
Depth	1.25 in
Time of Concentration (Composite)	0.184 hours
Area (User Defined)	0.450 acres
Computational Time Increment	0.025 hours
Time to Peak (Computed)	1.156 hours
Flow (Peak, Computed)	0.80 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.150 hours
Flow (Peak Interpolated Output)	0.80 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.450 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.03 in
Runoff Volume (Pervious)	1,689.97 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,690.00 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.184 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440

WQ Hydrographs and Routings

Subsection: Unit Hydrograph Summary
Label: PDA-2 Imp
Scenario: base

Return Event: 1 years
Storm Event: Gauged Event (1.3 in)

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	1.61 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.082 hours
Total unit time, Tb	1.205 hours

WQ Hydrographs and Routings

Subsection: Elevation-Area Volume Curve
Label: BIO1
Scenario: base

Return Event: 1 years
Storm Event: Gauged Event (1.3 in)

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
6.30	0.0	0.015	0.000	0.00	0.00
8.00	0.0	0.030	0.066	1,634.00	1,634.00
9.00	0.0	0.050	0.119	1,724.00	3,358.00
10.00	0.0	0.070	0.179	2,601.00	5,960.00

WQ Hydrographs and Routings

Subsection: Elevation-Area Volume Curve
Label: BIO2
Scenario: base

Return Event: 1 years
Storm Event: Gauged Event (1.3 in)

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
5.70	0.0	0.050	0.000	0.00	0.00
7.00	0.0	0.081	0.195	3,674.00	3,674.00
8.00	0.0	0.110	0.285	4,144.00	7,818.00
9.00	0.0	0.140	0.374	5,432.00	13,250.00

WQ Hydrographs and Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: base

Return Event: 1 years
Storm Event: Gauged Event (1.3 in)

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.7500 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	6.30	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	2.150	7.30	965.00

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	1.100	0.58	0.000	0.00
Infiltration...	2.150	0.00	0.000	0.00
Pond Outflow...	2.150	0.00	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	1,051.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	1,039.00	Forward
Pond Outflow...	0.00	Reverse	2.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	1,051.00 ft³
Volume (Total Out ICPM)	1,041.00 ft³
Volume (Ending)	10.00 ft³
Elevation (Ending)	6.31 ft
Difference	0.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.01 %

WQ Hydrographs and Routings

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: base

Return Event: 1 years
Storm Event: Gauged Event (1.3 in)

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	5.70	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.00	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.050	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
2.150	6.19	1,397.00

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	1.150	0.80	0.000	0.00
Infiltration...	2.150	0.00	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	1,692.00	Forward	0.00	Reverse
Infiltration...	0.00	Reverse	1,692.00	Forward
Pond Outflow...	0.00	Reverse	0.00	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.00 ft³
Volume (Total In ICPM)	1,692.00 ft³
Volume (Total Out ICPM)	1,692.00 ft³
Volume (Ending)	0.00 ft³
Elevation (Ending)	5.70 ft
Difference	0.00 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.00 %

Appendix E

March 28, 2024

KCNAX23001

KIPP Team and Family Schools, Inc.
Attn: Mr. Douglas Chu
Director of Facilities and Real Estate
525 Clinton Street
Camden, NJ 08103

RE: Infiltration Testing Summary Report
KCNA – Whittier Field
726 Kaighn Avenue
Block 405, Lot 1
Camden, NJ

Dear Mr. Chu,

Pennoni is pleased to submit this report summarizing the infiltration tests performed as part of the above referenced project in Camden, New Jersey. The purpose of the study was to determine the soil profile, depth to groundwater and seasonal high-water table (SHWT), the presence of potential confining soil strata, and to estimate the infiltration rates in the general areas of potential Stormwater Management (SWM) facilities.

FIELD WORK

On March 22, 2024, eight test pits were excavated to depths varying between 12 and 13 ft below the ground surface (bgs), using a rubber tire backhoe. Testing locations were selected and established in the field by Pennoni personnel. Approximate testing locations are presented on the Test Location Plan, Drawing TL-1. The test pits were performed to determine soil strata and the depth to groundwater and SHWT, prior to infiltration testing (described below). Following the conclusion of the excavations and testing, the test pits were backfilled with the excavated soil in 10 to 12 in. lifts and tamped with the excavator bucket.

Our M. Arkan, PE directed the field work, and our T. Hall, EIT observed the test pits and performed the infiltration testing. The test pit and infiltration logs are attached.

SUBSURFACE STRATIGRAPHY

The test pits disclosed a surficial topsoil layer varying from approximately 3 to 6 in. thick. The underlying subsoils have been grouped into three principal strata based on their engineering properties and our interpretation of their origin. Table 1 presents the strata descriptions.

Table 1: Soil Stratum Descriptions

STRATUM	THICKNESS (FT)	DESCRIPTION
F	4.0 – 5.5	FILL: Brown to black coarse to medium to fine SAND, some fine to coarse Gravel, some Brick, Concrete, and Metal Fragments, little Fabric and Debris, little Silt
1	7.5 – 8.5	Brown fine to medium to coarse SAND and CLAY, some Silt
2	--	Reddish brown medium to coarse to fine SAND, trace Silt, trace fine Gravel

Observations for groundwater were made during and shortly after the completion of the test pit excavations. Groundwater was encountered at depths varying between 12.5 and 13.0 ft bgs (Elev. -0.2 to Elev. -1.8). These observations are for the time and locations noted and may not be indicative of seasonal or daily fluctuations. Seasonal variations on the order of several feet should be anticipated. Evidence of the SHWT was observed from mottling and redoximorphic features during testing at depths varying between 8 and 11 ft bgs (Elev. 0.7 to Elev. 2.8).

INFILTRATION TESTING SUMMARY

Pennoni performed a total of ten single ring infiltration tests, with at least one performed at each test pit location. A pre-soak was performed prior to testing, where the single rings were filled with approximately 3 in. of water and allowed to drain completely. In pre-soaks where the water level dropped less than 1 in. after 60 minutes, the pre-soak was ended. The rings were refilled and the time to drop 1 in. measured until stabilized infiltration rates were observed (two testing measurements of time within 0.5 second). The following table presents a summary of the field results for the infiltration tests performed.

Table 2: Testing Results

Test #	Ground Surface Elev.	Limiting Zone Depth, ft (Elev.) [Type]	Testing Depth, ft (Elev.)	Tested Stratum	Field Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
INF-1	12.5	11 (1.5) [SH]	5.5 (7.0)	1	2.38	0.82
INF-2	12.8	11 (1.8) [SH]	6.0 (6.8)	1	1.90	0.65
INF-3A	11.2	13 (-1.8) [GW]	5.5 (5.7)	1	0.06	< 1.00
INF-3B	11.2	13 (-1.8) [GW]	6.0 (5.2)	1	3.20	1.10
INF-4	10.8	8 (2.8) [SH]	5.0 (5.8)	1	1.51	0.52
INF-5	10.0	8 (2.0) [SH]	6.0 (4.0)	1	4.09	1.40
INF-6	10.2	8 (2.2) [SH]	6.0 (4.2)	1	2.94	1.01
INF-7	12.4	11 (1.4) [SH]	5.5 (6.9)	1	1.83	0.63
INF-8A	11.7	11 (0.7) [SH]	5.0 (6.7)	1	0.13	< 1.00
INF-8B	11.7	11 (0.7) [SH]	6.0 (5.7)	1	2.65	0.91

SH – Seasonal High-Water Table
GW – Groundwater Table

Field infiltration rates in Stratum 1 were observed to vary from 0.06 to 4.09 in/hr. Generally, Stratum 1 consisted of Silty Sand material, however, pockets of medium stiff Clay were encountered embedded within the stratum that contributes to lower infiltration rates.

LIMITATIONS

This work has been performed in accordance with generally accepted professional practice in the field of geotechnical engineering. Our conclusions and recommendations are based on the data revealed by this exploration. We are not responsible for any conclusions or opinions drawn from the data included herein, other than those specifically stated, nor are the recommendations presented in this report intended for direct use as construction specifications. This report is intended for use with regard to the specific project described herein; any changes in loads, structures, or locations should be brought to our attention so that we may determine how they may affect our conclusions. An attempt has been made to provide for normal contingencies, but the possibility remains that unexpected conditions may be present which we are not aware of. If additional or contradictory data are revealed in the future, we should be notified so that modifications to this report can be made, if necessary. If we do not review relevant construction documents and witness the

relevant construction operations, then we cannot be responsible for any problems that may result from misinterpretation or misunderstanding of this report or failure to comply with our recommendations.

We trust that the information presented in this report is what you require at this time and we thank you for the opportunity to assist you with this project. If you have any questions, or if you need any further assistance with this project, please contact this office at your earliest convenience.

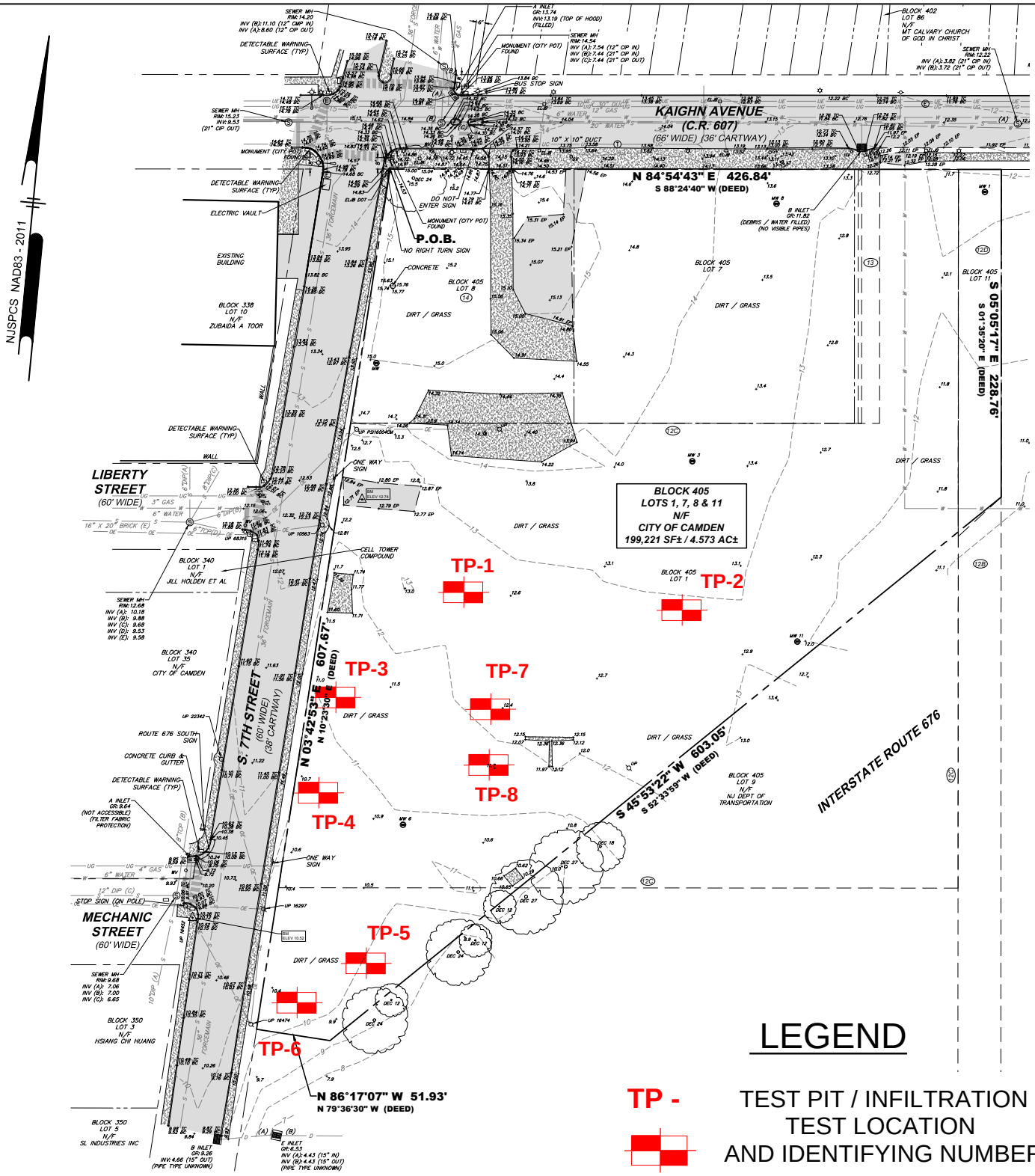
Respectfully,

PENNONI ASSOCIATES INC.

Tristan Hall, EIT
Graduate Geotechnical Engineer

Murat Arkan, PE
Senior Geotechnical Engineer

Enclosures: Test Location Plan (TL-1)
Test Pit Logs (TP-1 through TP-8)
Infiltration Testing Logs (INF-1 through INF-8B)



LEGEND

TP - TEST PIT / INFILTRATION TEST LOCATION AND IDENTIFYING NUMBER

PENNONI ASSOCIATES INC.
1900 Market Street, Suite 300
Philadelphia, PA 19103
T 215.222.3000 F 215.222.3588

KCNA - Whittier Field
726 Kaighn Avenue
Camden, NJ

Test Location Plan

KIPP Team and Family Schools, Inc.
525 Clinton Street
Camden, NJ 08103

PROJECT	KCNAX23001
DATE	25 MARCH 2024
DRAWING SCALE	NTS
DRAWN BY	TH
APPROVED BY	MA

TL - 1

SHEET 1 OF 1

TEST PIT LOG

Test Pit TP-1
PAGE 1 OF 1

CLIENT KIPP Team and Family Schools, Inc.
PROJECT NAME KCNA - Whittier Field
PROJECT NUMBER KCNAX23001
PROJECT LOCATION 726 Kaighn Ave, Camden, NJ
DATE STARTED 3/22/24 **COMPLETED** 3/22/24
GROUND ELEVATION 12.5' NAVD 1988
EXCAVATION CONTRACTOR Ambient Group, LLC
WATER ENCOUNTERED:
EXCAVATION METHOD Rubber Tire Backhoe
DURING EXCAVATION Not Encountered
OPERATOR / HELPER Steve
AT END OF EXCAVATION Not Encountered
LOGGED BY T. Hall **CHECKED BY** M. Arkan
AFTER EXCAVATION Not Encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	Depth	DESCRIPTION	Elev.	REMARKS
0			T	0.3	4" TOPSOIL	12.2	
			F		FILL: Brown to black C/M/F SAND, some Brick, Concrete Boulders, Metal Fragments, little Silt		
				4.5		8.0	
5			1		Brown fine SAND, trace Silt		
					Brown fine SAND, some Clay		
					Brown fine SAND, little Silt		
10							Mottling @ 11'
				12.0		0.5	
					Test Pit terminated at 12.0 feet.		

NOTES:

Test Pit TP-2
PAGE 1 OF 1

TEST PIT LOG

CLIENT KIPP Team and Family Schools, Inc.
PROJECT NAME KCNA - Whittier Field
PROJECT NUMBER KCNAX23001
PROJECT LOCATION 726 Kaighn Ave, Camden, NJ
DATE STARTED 3/22/24 **COMPLETED** 3/22/24
GROUND ELEVATION 12.8' NAVD 1988
EXCAVATION CONTRACTOR Ambient Group, LLC
WATER ENCOUNTERED:
EXCAVATION METHOD Rubber Tire Backhoe
DURING EXCAVATION 13.0' / Elev -0.2'
OPERATOR / HELPER Steve
AT END OF EXCAVATION 13.0' / Elev -0.2'
LOGGED BY T. Hall **CHECKED BY** M. Arkan
AFTER EXCAVATION 13.0' / Elev -0.2'

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	Depth	DESCRIPTION	Elev.	REMARKS
0			T	0.4	5" TOPSOIL	12.4	
			F		FILL: Brown to black C/M/F SAND, some Brick Fragments, little Silt (4" Iron Pipe ontop of stacked brick)		
				4.5		8.3	
5			1		Brown fine SAND, some Clay Brown fine SAND, little Silt		Damp
10							Mottling @ 11'
				13.0	Light brown F/M/C SAND, trace Silt	-0.2	Moist

Test Pit terminated at 13.0 feet.

NOTES:

TEST PIT LOG

Test Pit TP-3
PAGE 1 OF 1

CLIENT KIPP Team and Family Schools, Inc.
PROJECT NAME KCNA - Whittier Field
PROJECT NUMBER KCNAX23001
PROJECT LOCATION 726 Kaighn Ave, Camden, NJ
DATE STARTED 3/22/24 **COMPLETED** 3/22/24
GROUND ELEVATION 11.2' NAVD 1988
EXCAVATION CONTRACTOR Ambient Group, LLC
WATER ENCOUNTERED:
EXCAVATION METHOD Rubber Tire Backhoe
▽ **DURING EXCAVATION** 13.0' / Elev -1.8'
OPERATOR / HELPER Steve
▼ **AT END OF EXCAVATION** 13.0' / Elev -1.8'
LOGGED BY T. Hall **CHECKED BY** M. Arkan
▼ **AFTER EXCAVATION** 13.0' / Elev -1.8'

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0				Depth / Elev.	
			T	0.3 / 11.0 — 3" TOPSOIL	
			F	FILL: Brown to black C/M/F SAND, some Brick and Concrete Fragments, little Silt	
5				5.5 / 5.7 — Brown fine SAND and stiff CLAY, some Silt	
			1	Brown fine SAND, little Silt	
10				Brown F/M/C SAND, little fine Gravel, trace Silt	
▼				13.0 / -1.8	
			2	13.3 / -2.1 — Reddish brown M/C/F SAND, trace fine Gravel, trace Silt	
				Test Pit terminated at 13.3 feet.	

NOTES:

Test Pit TP-4
PAGE 1 OF 1

TEST PIT LOG

CLIENT KIPP Team and Family Schools, Inc.
PROJECT NAME KCNA - Whittier Field
PROJECT NUMBER KCNAX23001
PROJECT LOCATION 726 Kaighn Ave, Camden, NJ
DATE STARTED 3/22/24 **COMPLETED** 3/22/24
GROUND ELEVATION 10.8' NAVD 1988
EXCAVATION CONTRACTOR Ambient Group, LLC
WATER ENCOUNTERED:
EXCAVATION METHOD Rubber Tire Backhoe
DURING EXCAVATION 12.5' / Elev -1.7'
OPERATOR / HELPER Steve
AT END OF EXCAVATION 12.5' / Elev -1.7'
LOGGED BY T. Hall **CHECKED BY** M. Arkan
AFTER EXCAVATION 12.5' / Elev -1.7'

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0				Depth / Elev.	
			T	0.3 / 10.5 — 4" TOPSOIL	
			F	FILL: Brown to black C/M/F SAND, some Brick and Concrete Fragments, little Silt	
5				5.0 / 5.8 — Brown fine SAND, some Clay	
			1	Brown fine SAND, little Silt	Mottling @ 8'
10				Brown F/M/C SAND, little fine Gravel, trace Silt	
				12.5 / -1.7 — Test Pit terminated at 12.5 feet.	

NOTES:

TEST PIT LOG

Test Pit TP-5
PAGE 1 OF 1

CLIENT KIPP Team and Family Schools, Inc.
PROJECT NAME KCNA - Whittier Field
PROJECT NUMBER KCNAX23001
PROJECT LOCATION 726 Kaighn Ave, Camden, NJ
DATE STARTED 3/22/24 **COMPLETED** 3/22/24
GROUND ELEVATION 10.0' NAVD 1988
EXCAVATION CONTRACTOR Ambient Group, LLC
WATER ENCOUNTERED:
EXCAVATION METHOD Rubber Tire Backhoe
DURING EXCAVATION Not Encountered
OPERATOR / HELPER Steve
AT END OF EXCAVATION Not Encountered
LOGGED BY T. Hall **CHECKED BY** M. Arkan
AFTER EXCAVATION Not Encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	Depth	DESCRIPTION	Elev.	REMARKS
0			T	0.4	5" TOPSOIL	9.6	
			F		FILL: Brown to black C/M/F SAND, some Brick, Concrete Boulders, little Silt		
5				5.0		5.0	
			1		Brown fine SAND, some Clay		
					Brown fine SAND, little Silt		Mottling @ 8'
10				12.0		-2.0	
					Test Pit terminated at 12.0 feet.		

NOTES:

TEST PIT LOG

Test Pit TP-6
PAGE 1 OF 1

CLIENT KIPP Team and Family Schools, Inc.
PROJECT NAME KCNA - Whittier Field
PROJECT NUMBER KCNAX23001
PROJECT LOCATION 726 Kaighn Ave, Camden, NJ
DATE STARTED 3/22/24 **COMPLETED** 3/22/24
GROUND ELEVATION 10.2' NAVD 1988
EXCAVATION CONTRACTOR Ambient Group, LLC
WATER ENCOUNTERED:
EXCAVATION METHOD Rubber Tire Backhoe
DURING EXCAVATION Not Encountered
OPERATOR / HELPER Steve
AT END OF EXCAVATION Not Encountered
LOGGED BY T. Hall **CHECKED BY** M. Arkan
AFTER EXCAVATION Not Encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0				Depth / Elev.	
			T	0.5 / 9.7 — 6" TOPSOIL	
			F	FILL: Black F/M/C SAND, some F/C Gravel, some Silt FILL: Brown to black C/M/F SAND, some Brick, Concrete Boulders, Metal Fragments, Fabric and Debris, little Silt (CONCRETE SLAB / BOULDER)	
5				5.5 / 4.7	
			1	Brown fine SAND, some Clay Brown fine SAND, some Silt	Mottling @ 8'
10				12.0 / -1.8	
				Test Pit terminated at 12.0 feet.	

NOTES:

TEST PIT LOG

Test Pit TP-7
PAGE 1 OF 1

CLIENT KIPP Team and Family Schools, Inc.
PROJECT NAME KCNA - Whittier Field
PROJECT NUMBER KCNAX23001
PROJECT LOCATION 726 Kaighn Ave, Camden, NJ
DATE STARTED 3/22/24 **COMPLETED** 3/22/24
GROUND ELEVATION 12.4' NAVD 1988
EXCAVATION CONTRACTOR Ambient Group, LLC
WATER ENCOUNTERED:
EXCAVATION METHOD Rubber Tire Backhoe
DURING EXCAVATION Not Encountered
OPERATOR / HELPER Steve
AT END OF EXCAVATION Not Encountered
LOGGED BY T. Hall **CHECKED BY** M. Arkan
AFTER EXCAVATION Not Encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0				Depth / Elev.	
			T	0.5 — 6" TOPSOIL — 11.9	
			F	FILL: Brown to black C/M/F SAND, some Brick and Concrete Fragments, little Silt	
				4.0 — 8.4	
5				Brown fine SAND, little Silt (pockets of medium stiff Clay)	
			1	Brown fine SAND, some Silt (pockets of Clay)	
10					Mottling @ 11'
				12.5 — -0.1	
				Test Pit terminated at 12.5 feet.	

NOTES:

TEST PIT LOG

Test Pit TP-8
PAGE 1 OF 1

CLIENT KIPP Team and Family Schools, Inc.
PROJECT NAME KCNA - Whittier Field
PROJECT NUMBER KCNAX23001
PROJECT LOCATION 726 Kaighn Ave, Camden, NJ
DATE STARTED 3/22/24 **COMPLETED** 3/22/24
GROUND ELEVATION 11.7' NAVD 1988
EXCAVATION CONTRACTOR Ambient Group, LLC
WATER ENCOUNTERED:
EXCAVATION METHOD Rubber Tire Backhoe
DURING EXCAVATION Not Encountered
OPERATOR / HELPER Steve
AT END OF EXCAVATION Not Encountered
LOGGED BY T. Hall **CHECKED BY** M. Arkan
AFTER EXCAVATION Not Encountered

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0				Depth / Elev.	
			T	0.4 — 5" TOPSOIL — 11.3	
			F	FILL: Brown to black C/M/F SAND, some Brick and Concrete Fragments, little Silt	
				4.5 — 7.2	
5				Brown fine SAND and CLAY, little Silt	
			1	Brown fine SAND, some Silt	
10					Mottling @ 11'
				12.0 — -0.3	
				Test Pit terminated at 12.0 feet.	

NOTES:

Infiltration Test Number: INF-1

Project: KCNA - Whittier Field	Project Number: KCNAX23001	Date: 03/22/24
Location: 726 Kaighn Avenue, Camden, NJ	Test Location: TP-1	Testing Depth (ft): 5.5
Test Performed By: T. Hall	Ring Seating Depth (in): 4	Ring Diameter (in): 6
Ground Surface Elev. 12.5		Testing Elev. 7.0
Test Soil Strata: Sand and Clay		
Limiting Zones: SHWT @ 11 ft (Elev. 1.5)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	ΔHeight (in.)	ΔTime (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	3.00	0.00	3.00	56.00	3.21	1.10
1	3.00	2.00	1.00	24.83	2.42	0.83
2	3.00	2.00	1.00	25.17	2.38	0.82
3	3.00	2.00	1.00	25.17	2.38	0.82
4						
5						
6						
7						
8						
9						
10						
				Hydraulic Conductivity (in/hr)		0.82

Infiltration Test Number: INF-2

Project: KCNA - Whittier Field	Project Number: KCNAX23001	Date: 03/22/24
Location: 726 Kaighn Avenue, Camden, NJ	Test Location: TP-2	Testing Depth (ft): 6.0
Test Performed By: T. Hall	Ring Seating Depth (in): 4	Ring Diameter (in): 6
Ground Surface Elev. 12.8		Testing Elev. 6.8
Test Soil Strata: Sand and Clay		
Limiting Zones: SHWT @ 11 ft (Elev. 1.8) ; GW @ 13 ft (Elev. -0.2)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	ΔHeight (in.)	ΔTime (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	3.00	0.88	2.13	60.00	2.13	0.73
1	3.00	2.00	1.00	30.75	1.95	0.67
2	3.00	2.00	1.00	31.50	1.90	0.65
3	3.00	2.00	1.00	31.50	1.90	0.65
4						
5						
6						
7						
8						
9						
10						
				Hydraulic Conductivity (in/hr)		0.65

Infiltration Test Number: INF-3A

Project: KCNA - Whittier Field	Project Number: KCNAX23001	Date: 03/22/24
Location: 726 Kaighn Avenue, Camden, NJ	Test Location: TP-3	Testing Depth (ft): 5.5
Test Performed By: T. Hall	Ring Seating Depth (in): 4	Ring Diameter (in): 6
Ground Surface Elev. 11.2		Testing Elev. 5.7
Test Soil Strata: Sand and Clay		
Limiting Zones: GW @ 13 ft (Elev. -1.8)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	ΔHeight (in.)	ΔTime (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	3.00	2.88	0.13	60.00	0.13	0.04
1	3.00	2.94	0.06	60.00	0.06	0.02
2						
3						
4						
5						
6						
7						
8						
9						
10						
				Hydraulic Conductivity (in/hr)		< 1.00

Infiltration Test Number: INF-3B

Project: KCNA - Whittier Field	Project Number: KCNAX23001	Date: 03/22/24
Location: 726 Kaighn Avenue, Camden, NJ	Test Location: TP-3	Testing Depth (ft): 6.0
Test Performed By: T. Hall	Ring Seating Depth (in): 4	Ring Diameter (in): 6
Ground Surface Elev. 11.2		Testing Elev. 5.2
Test Soil Strata: Sand and Clay		
Limiting Zones: GW @ 13 ft (Elev. -1.8)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	ΔHeight (in.)	ΔTime (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	3.00	0.00	3.00	47.00	3.83	1.31
1	3.00	2.00	1.00	18.75	3.20	1.10
2	3.00	2.00	1.00	18.75	3.20	1.10
3						
4						
5						
6						
7						
8						
9						
10						
				Hydraulic Conductivity (in/hr)		1.10

Infiltration Test Number: INF-4

Project: KCNA - Whittier Field	Project Number: KCNAX23001	Date: 03/22/24
Location: 726 Kaighn Avenue, Camden, NJ	Test Location: TP-4	Testing Depth (ft): 5.0
Test Performed By: T. Hall	Ring Seating Depth (in): 4	Ring Diameter (in): 6
Ground Surface Elev. 10.8		Testing Elev. 5.8
Test Soil Strata: Sand and Clay		
Limiting Zones: SHWT @ 8 ft (Elev. 2.8) ; GW @ 12.5 ft (Elev. -1.7)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	ΔHeight (in.)	ΔTime (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	3.00	0.25	2.75	60.00	2.75	0.94
1	3.00	2.00	1.00	39.58	1.52	0.52
2	3.00	2.00	1.00	39.67	1.51	0.52
3	3.00	2.00	1.00	39.67	1.51	0.52
4						
5						
6						
7						
8						
9						
10						
				Hydraulic Conductivity (in/hr)		0.52

Infiltration Test Number: INF-5

Project: KCNA - Whittier Field	Project Number: KCNAX23001	Date: 03/22/24
Location: 726 Kaighn Avenue, Camden, NJ	Test Location: TP-5	Testing Depth (ft): 6.0
Test Performed By: T. Hall	Ring Seating Depth (in): 4	Ring Diameter (in): 6
Ground Surface Elev. 10.0		Testing Elev. 4.0
Test Soil Strata: Sand and Clay		
Limiting Zones: SHWT @ 8 ft (Elev. 2.0)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	ΔHeight (in.)	ΔTime (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	3.00	0.00	3.00	32.00	5.63	1.93
1	3.00	2.00	1.00	14.75	4.07	1.39
2	3.00	2.00	1.00	14.67	4.09	1.40
3	3.00	2.00	1.00	14.67	4.09	1.40
4						
5						
6						
7						
8						
9						
10						
				Hydraulic Conductivity (in/hr)		1.40

Infiltration Test Number: INF-6

Project: KCNA - Whittier Field	Project Number: KCNAX23001	Date: 03/22/24
Location: 726 Kaighn Avenue, Camden, NJ	Test Location: TP-6	Testing Depth (ft): 6.0
Test Performed By: T. Hall	Ring Seating Depth (in): 4	Ring Diameter (in): 6
Ground Surface Elev. 10.2		Testing Elev. 4.2
Test Soil Strata: Sand and Clay		
Limiting Zones: SHWT @ 8 ft (Elev. 2.2)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	ΔHeight (in.)	ΔTime (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	3.00	0.00	3.00	54.00	3.33	1.14
1	3.00	2.00	1.00	20.25	2.96	1.01
2	3.00	2.00	1.00	20.42	2.94	1.01
3	3.00	2.00	1.00	20.42	2.94	1.01
4						
5						
6						
7						
8						
9						
10						
				Hydraulic Conductivity (in/hr)		1.01

Infiltration Test Number: INF-7

Project: KCNA - Whittier Field	Project Number: KCNAX23001	Date: 03/22/24
Location: 726 Kaighn Avenue, Camden, NJ	Test Location: TP-7	Testing Depth (ft): 5.5
Test Performed By: T. Hall	Ring Seating Depth (in): 4	Ring Diameter (in): 6
Ground Surface Elev. 12.4		Testing Elev. 6.9
Test Soil Strata: Sand and Clay		
Limiting Zones: SHWT @ 11 ft (Elev. 1.4)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	ΔHeight (in.)	ΔTime (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	3.00	0.75	2.25	60.00	2.25	0.77
1	3.00	2.00	1.00	32.00	1.88	0.64
2	3.00	2.00	1.00	32.83	1.83	0.63
3	3.00	2.00	1.00	32.83	1.83	0.63
4						
5						
6						
7						
8						
9						
10						
				Hydraulic Conductivity (in/hr)		0.63

Infiltration Test Number: INF-8A

Project: KCNA - Whittier Field	Project Number: KCNAX23001	Date: 03/22/24
Location: 726 Kaighn Avenue, Camden, NJ	Test Location: TP-8	Testing Depth (ft): 5.0
Test Performed By: T. Hall	Ring Seating Depth (in): 4	Ring Diameter (in): 6
Ground Surface Elev. 11.7		Testing Elev. 6.7
Test Soil Strata: Sand and Clay		
Limiting Zones: SHWT @ 11 ft (Elev. 0.7)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	ΔHeight (in.)	ΔTime (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	3.00	2.50	0.50	60.00	0.50	0.17
1	3.00	2.88	0.13	60.00	0.13	0.04
2						
3						
4						
5						
6						
7						
8						
9						
10						
				Hydraulic Conductivity (in/hr)		< 1.00

Infiltration Test Number: INF-8B

Project: KCNA - Whittier Field	Project Number: KCNAX23001	Date: 03/22/24
Location: 726 Kaighn Avenue, Camden, NJ	Test Location: TP-8	Testing Depth (ft): 6.0
Test Performed By: T. Hall	Ring Seating Depth (in): 4	Ring Diameter (in): 6
Ground Surface Elev. 11.7		Testing Elev. 5.7
Test Soil Strata: Sand and Clay		
Limiting Zones: SHWT @ 11 ft (Elev. 0.7)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	ΔHeight (in.)	ΔTime (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	3.00	0.00	3.00	42.50	4.24	1.45
1	3.00	2.00	1.00	22.00	2.73	0.93
2	3.00	2.00	1.00	22.67	2.65	0.91
3	3.00	2.00	1.00	22.67	2.65	0.91
4						
5						
6						
7						
8						
9						
10						
				Hydraulic Conductivity (in/hr)		0.91

Appendix F

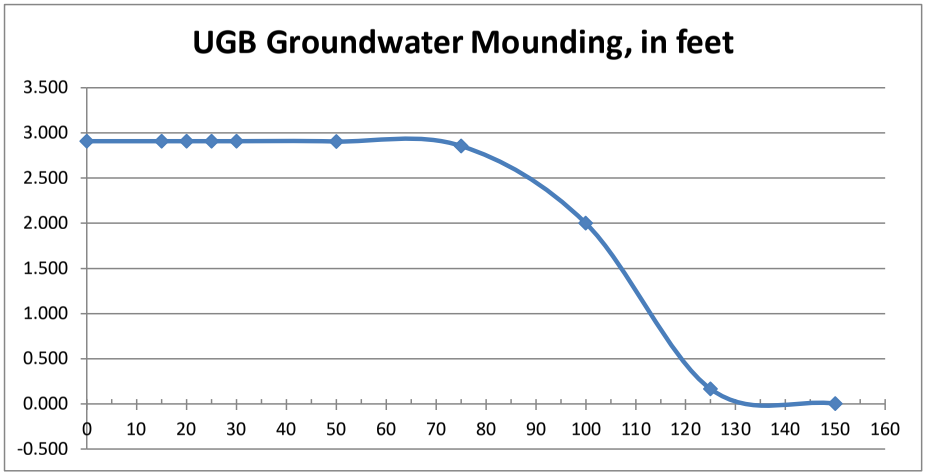
Input Values

0.95	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
4.75	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
105.000	x	1/2 length of basin (x direction, in feet)
22.500	y	1/2 width of basin (y direction, in feet)
6.14	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.907	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.907	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.907	0
2.907	15
2.907	20
2.907	25
2.907	30
2.906	50
2.856	75
2.002	100
0.166	125
0.004	150

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

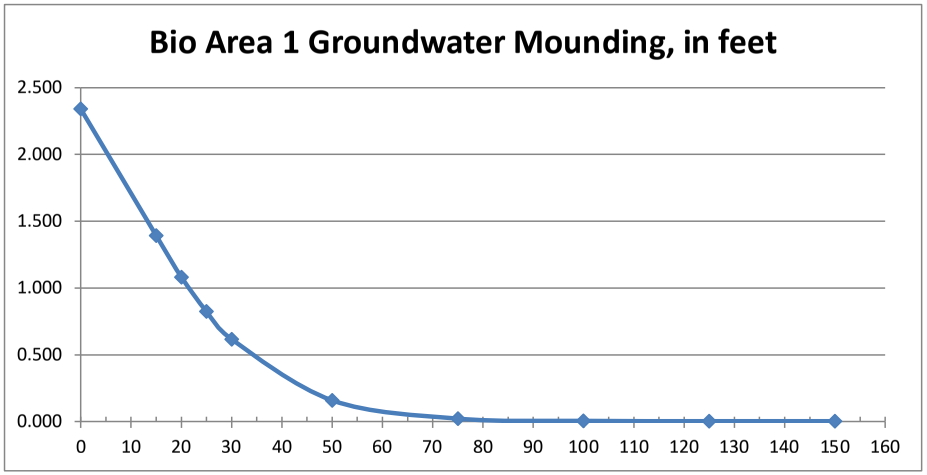
Input Values

0.75	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
3.78	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
6.000	x	1/2 length of basin (x direction, in feet)
39.000	y	1/2 width of basin (y direction, in feet)
23.40	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.342	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.342	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.342	0
1.392	15
1.081	20
0.824	25
0.615	30
0.159	50
0.021	75
0.005	100
0.003	125
0.003	150

Re-Calculate Now



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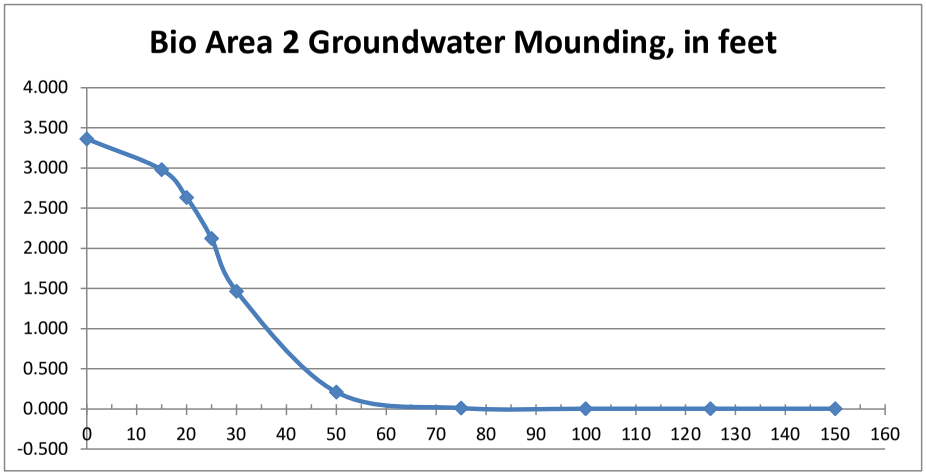
Input Values

1.47	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
7.35	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
27.000	x	1/2 length of basin (x direction, in feet)
23.000	y	1/2 width of basin (y direction, in feet)
5.24	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.363	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.363	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.363	0
2.981	15
2.634	20
2.121	25
1.465	30
0.208	50
0.009	75
0.002	100
0.001	125
0.001	150

Re-Calculate Now



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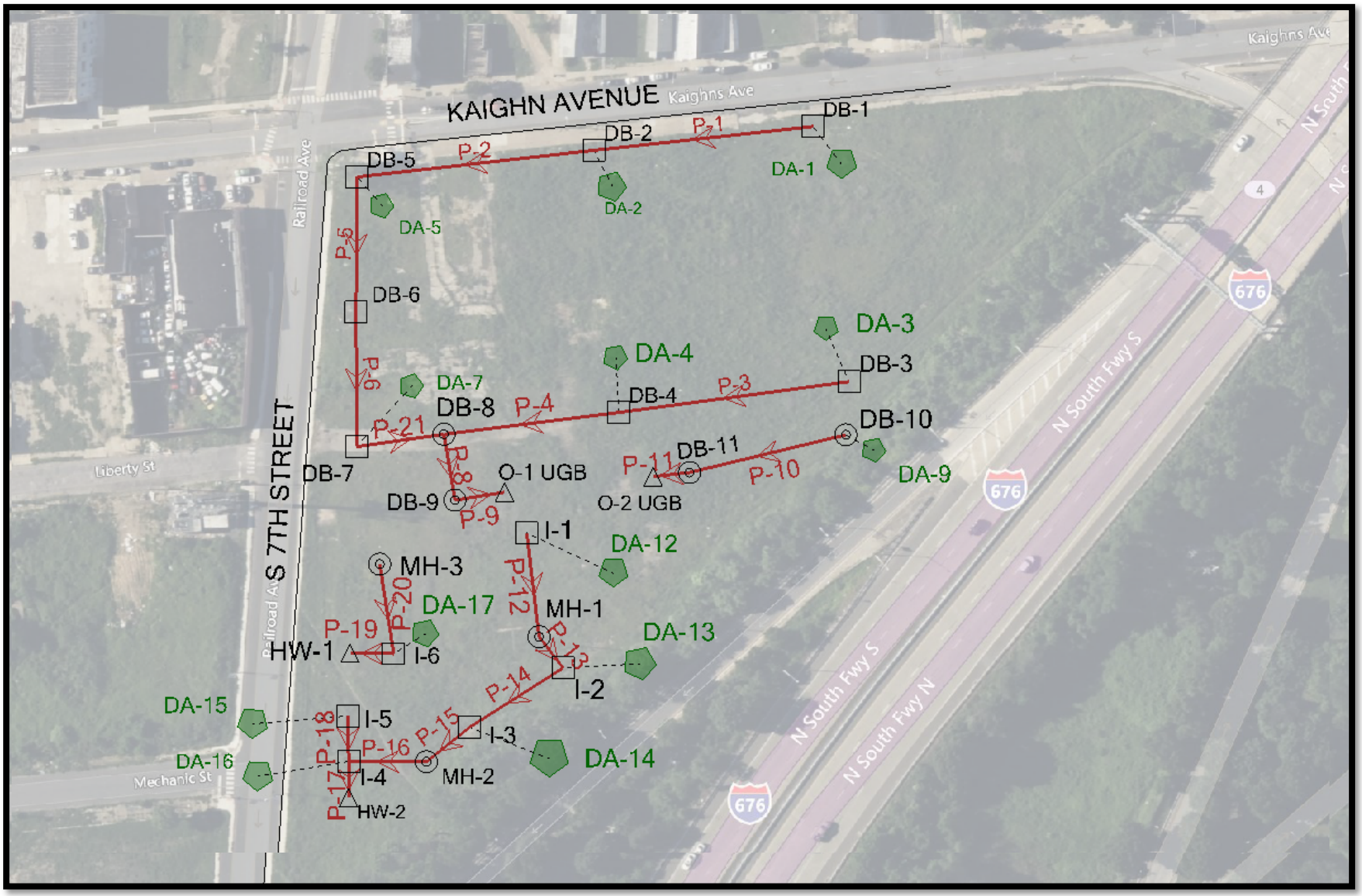
Appendix G



STORM SEWER SCHEMATIC

Conduit FlexTable: Combined Pipe/Node Report

Label	Start Node	Stop Node	Upstream Inlet Area (acres)	System CA (acres)	System Flow Time	Rainfall Intensity (in/h)	Length (ft)	Slope (Calc) (ft/ft)	Dia. (in)	Material	Manning's n	Flow (Q) (cfs)	Capacity (Q) (cfs)	V (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Cover (Start) (ft)	Cover (Stop) (ft)	Elevation Ground (Start)	Elevation Ground (Stop)	Hydraulic Grade Line (In)	Hydraulic Grade Line (Out)
P-1	DB-1	DB-2	0.290	0.287	5.00	7.7	192.0	0.005	15.0	HDPE(smooth Interior)	0.012	2.21	4.92	1.80	11.45	10.50	1.75	2.70	14.45	14.45	13.08	12.89
P-2	DB-2	DB-5	0.290	0.574	6.77	7.0	192.0	0.004	18.0	HDPE (smooth Interior)	0.012	6.24	7.06	3.53	10.25	9.51	2.70	3.44	14.45	14.45	12.89	12.31
P-3	DB-3	DB-4	0.290	0.287	5.00	7.7	192.0	0.005	15.0	HDPE (smooth Interior)	0.012	2.21	4.92	3.91	11.45	10.50	1.35	2.70	14.05	14.45	12.04	11.09
P-4	DB-4	DB-8	0.290	0.574	5.82	7.3	127.0	0.005	18.0	HDPE (smooth Interior)	0.012	4.25	8.01	4.60	10.25	9.62	2.70	3.33	14.45	14.45	11.04	10.40
P-5	DB-5	DB-6	0.580	1.148	7.68	6.7	110.0	0.005	24.0	HDPE (smooth Interior)	0.012	16.41	17.33	5.22	8.76	8.21	3.69	4.79	14.45	15.00	12.31	11.82
P-6	DB-6	DB-7	(N/A)	1.148	8.03	6.5	110.0	0.005	24.0	HDPE (smooth Interior)	0.012	16.26	17.33	5.17	8.21	7.66	4.79	4.79	15.00	14.45	11.82	11.34
P-8	DB-8	DB-9	(N/A)	2.297	8.48	6.4	45.0	0.005	24.0	HDPE (smooth Interior)	0.012	23.43	17.52	7.46	7.33	7.10	5.12	4.49	14.45	13.59	9.37	8.82
P-9	DB-9	O-1 UGB	(N/A)	2.297	8.58	6.3	17.0	0.012	24.0	HDPE (smooth Interior)	0.012	23.34	26.58	9.54	7.10	6.90	4.49	2.80	13.59	11.70	8.82	8.46
P-10	DB-10	DB-11	0.080	0.024	5.00	7.7	100.0	0.005	15.0	HDPE (smooth Interior)	0.012	0.19	4.95	1.93	7.65	7.15	3.42	5.54	12.32	13.94	7.82	7.32
P-11	DB-11	O-2 UGB	(N/A)	0.024	5.86	7.3	7.0	0.004	15.0	HDPE (smooth Interior)	0.012	0.18	4.58	1.80	7.11	7.08	5.58	5.43	13.94	13.76	7.28	7.24
P-12	I-1	MH-1	0.270	0.216	5.00	7.7	86.0	0.013	18.0	Concrete	0.015	1.67	10.39	4.31	9.58	8.46	2.08	2.24	13.16	12.20	10.07	8.87
P-13	MH-1	I-2	(N/A)	0.216	5.33	7.5	22.0	0.013	18.0	Concrete	0.015	1.64	10.45	4.31	8.46	8.17	2.24	2.22	12.20	11.89	8.94	8.77
P-14	I-2	I-3	0.130	0.333	5.42	7.5	83.0	0.009	18.0	Concrete	0.015	2.52	8.54	4.20	8.17	7.44	2.22	1.71	11.89	10.65	8.77	8.14
P-15	I-3	MH-2	0.130	0.450	5.75	7.4	27.0	0.013	18.0	Concrete	0.015	3.34	10.36	5.23	7.44	7.09	1.71	2.28	10.65	10.87	8.14	7.68
P-16	MH-2	I-4	(N/A)	0.450	5.83	7.3	86.0	0.014	18.0	Concrete	0.015	3.33	10.71	5.35	7.09	5.90	2.28	2.82	10.87	10.22	7.79	7.49
P-17	I-4	HW-2	0.030	0.509	6.10	7.2	29.0	0.007	24.0	HDPE (smooth Interior)	0.012	19.53	20.35	7.38	5.90	5.70	2.32	1.00	10.22	8.70	7.49	7.27
P-18	I-5	I-4	0.030	0.030	5.00	7.7	32.0	0.007	24.0	Concrete	0.015	16.04	16.26	5.90	6.12	5.90	2.58	2.32	10.70	10.22	7.72	7.49
P-19	I-6	HW-1	0.520	0.442	5.00	7.7	14.0	0.005	24.0	HDPE (smooth Interior)	0.012	14.58	17.33	6.18	6.37	6.30	1.56	0.70	9.93	9.00	7.77	7.68
P-20	MH-3	I-6	(N/A)	0.000	0.00	7.7	98.0	0.005	24.0	HDPE (smooth Interior)	0.012	11.17	17.15	5.81	6.85	6.37	2.90	1.56	11.75	9.93	8.05	7.77
P-21	DB-7	DB-8	0.580	1.723	8.39	6.4	65.0	0.005	18.0	HDPE (smooth Interior)	0.012	19.81	8.11	11.21	7.66	7.33	5.29	5.62	14.45	14.45	11.34	9.37

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

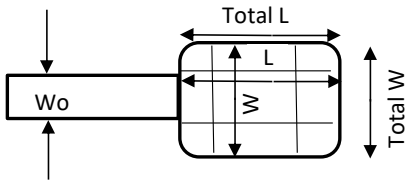
PROJECT: Whittier Field, Camden NJ

Date: 4/23/2024
Rev:
Page:
By:

Structure: HW 1
25 Year Storm

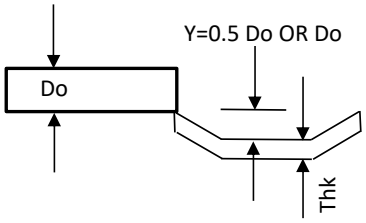
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	14.57	CFS
Culvert Horiz Dim.=	2.00	Ft
Tailwater Depth=	1.74	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	2.00	Ft
Depth of Hole (Y)	1.00	Ft
Length of Bottom (L)	6.00	Ft
Width of Bottom (W)	4.00	Ft
Total Length of Scour Hole	12.00	Ft
Total Width of Scour Hole	10.00	Ft
D(50) calc.	1	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



NOTE: * Tailwater was calculated using SCS method. 2 yr water elev in basin is 8.04

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

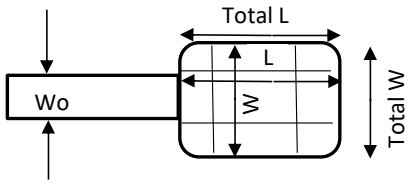
PROJECT: Whittier Field, Camden NJ

Date: 4/23/2024
Rev:
Page:
By:

Structure: HW 2
25 Year Storm

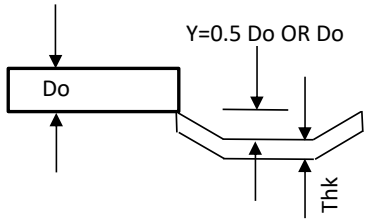
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	19.52	CFS
Culvert Horiz Dim.=	2.00	Ft
Tailwater Depth=	1.64	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	2.00	Ft
Depth of Hole (Y)	1.00	Ft
Length of Bottom (L)	6.00	Ft
Width of Bottom (W)	4.00	Ft
Total Length of Scour Hole	12.00	Ft
Total Width of Scour Hole	10.00	Ft
D(50) calc.	1	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



NOTE: * Tailwater was calculated using SCS method. 2 yr water elev in basin is 7.37

Appendix H

	the area occupied by the BMP
4. Small-scale Bioretention Systems	2.5 acres
5. Small-scale Infiltration Basin	2.5 acres
6. Small-scale Sand Filter	2.5 acres

(c) To satisfy the stormwater runoff quantity standards at N.J.A.C. 7:8-5.6, the design engineer shall utilize BMPs from Table 5-1 or from Table 5-2 and/or an alternative stormwater management measure approved in accordance with N.J.A.C. 7:8-5.2(g).

(d) If a variance in accordance with N.J.A.C. 7:8-4.6 or a waiver from strict compliance in accordance with N.J.A.C. 7:8-5.2(e) is granted from the requirements of this section, then BMPs from Table 5-1, 5-2, or 5-3, and/or an alternative stormwater management measure approved in accordance with N.J.A.C. 7:8-5.2(g) may be used to meet the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at N.J.A.C. 7:8-5.4, 5.5, and 5.6.

(e) For separate or combined storm sewer improvement projects, such as sewer separation, undertaken by a government agency or public utility (for example, a sewerage company), the requirements of this section shall only apply to areas owned in fee simple by the government agency or utility, and areas within a right-of-way or easement held or controlled by the government agency or utility; the entity shall not be required to obtain additional property or property rights to fully satisfy the requirements of this section. Regardless of the amount of area of a separate or combined storm sewer improvement project subject to the green infrastructure requirements of this section, each project shall fully comply with the applicable groundwater recharge, stormwater runoff quality control, and stormwater runoff quantity standards at N.J.A.C. 7:8-5.4, 5.5, and 5.6, unless the project is granted a waiver from strict compliance in accordance with N.J.A.C. 7:8-5.2(e).

7:8-5.4 Groundwater recharge standards

(a) This section contains minimum design and performance standards for groundwater recharge.

(b) The minimum design and performance standards for groundwater recharge are, as follows:

1. The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at N.J.A.C. 7:8-5.7, either:

   i. Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site; or

   ii. Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the projected two-year storm, as defined and determined pursuant to N.J.A.C. 7:8-5.7(d), is infiltrated.

2. This groundwater recharge requirement does not apply to projects within the "urban redevelopment area," or to projects subject to (b)3 below.

3. The following types of stormwater shall not be recharged:

   i. Stormwater from areas of high pollutant loading. High pollutant loading areas are areas in industrial and commercial developments where solvents and/or petroleum products are loaded/unloaded, stored, or applied, areas where pesticides are loaded/unloaded or stored; areas where hazardous materials are expected to be present in greater than 'reportable quantities' as defined by the United States Environmental Protection Agency (EPA) at 40 CFR 302.4; areas where recharge would be inconsistent with a remedial action work plan approved pursuant to the Administrative Requirements for the Remediation of Contaminated Sites rules, N.J.A.C. 7:26C, or a Department approved landfill closure plan; and areas with high risks for spills of toxic materials, such as gas stations and vehicle maintenance facilities; and

   ii. Industrial stormwater exposed to "source material." "Source material" means any material(s) or machinery, located at an industrial facility, that is directly or indirectly related to process, manufacturing or other industrial activities, which could be a source of pollutants in any industrial stormwater discharge to groundwater. Source materials include, but are not limited to, raw materials; intermediate products; final products; waste materials; by-products; industrial machinery and fuels, and lubricants, solvents, and detergents that are related to process, manufacturing, or other industrial activities that are exposed to stormwater.

7:8-5.5 Stormwater runoff quality standards

(a) This section contains the minimum design and performance standards to control stormwater runoff quality impacts of major development. Stormwater runoff quality standards are applicable when the major development results in an increase of one-quarter acre or more of regulated motor vehicle surface.

(b) Stormwater management measures shall be designed to reduce the post-construction load of total suspended solids (TSS) in stormwater runoff generated from the water quality design storm as follows:

   1. Eighty percent TSS removal of the anticipated load, expressed as an annual average shall be achieved for the stormwater runoff from the net increase of motor vehicle surface.

   2. If the surface is considered regulated motor vehicle surface because the water quality treatment for an area of motor vehicle surface that is currently receiving water quality treatment either by vegetation or soil, by an existing stormwater management measure, or by treatment at a wastewater treatment plant is to be modified or removed, the project shall maintain or increase the existing TSS removal of the anticipated load expressed as an annual average.

(c) The requirement to reduce TSS does not apply to any stormwater runoff in a discharge regulated under a numeric effluent limitation for TSS imposed under the New Jersey Pollutant Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A, or in a discharge specifically exempt under a NJPDES permit from this requirement. Every major development, including any that discharge into a combined sewer system, shall comply with (b) above, unless the major development is itself subject to a NJPDES permit with a

et seq.

"Urban Redevelopment Area" is defined as previously developed portions of areas:

1. Delineated on the State Plan Policy Map (SPPM) as the Metropolitan Planning Area (PA1), Designated Centers, Cores or Nodes;
2. Designated as CAFRA Centers, Cores or Nodes;
3. Designated as Urban Enterprise Zones; and
4. Designated as Urban Coordinating Council Empowerment Neighborhoods.

"Water control structure" means a structure within, or adjacent to, a water, which intentionally or coincidentally alters the hydraulic capacity, the flood elevation resulting from the two-, 10-, or 100-year storm, flood hazard area limit, and/or floodway limit of the water. Examples of a water control structure may include a bridge, culvert, dam, embankment, ford (if above grade), retaining wall, and weir.

"Waters of the State" means the ocean and its estuaries, all springs, streams, wetlands, and bodies of surface or groundwater, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction.

"Wetlands" or "wetland" means an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.

7:8-1.3 Program information

Questions or submissions regarding this chapter should be directed to the Division of Water Quality, New Jersey Department of Environmental Protection, Mail Code 401-02B, PO Box 420, Trenton, New Jersey 08625-0420.

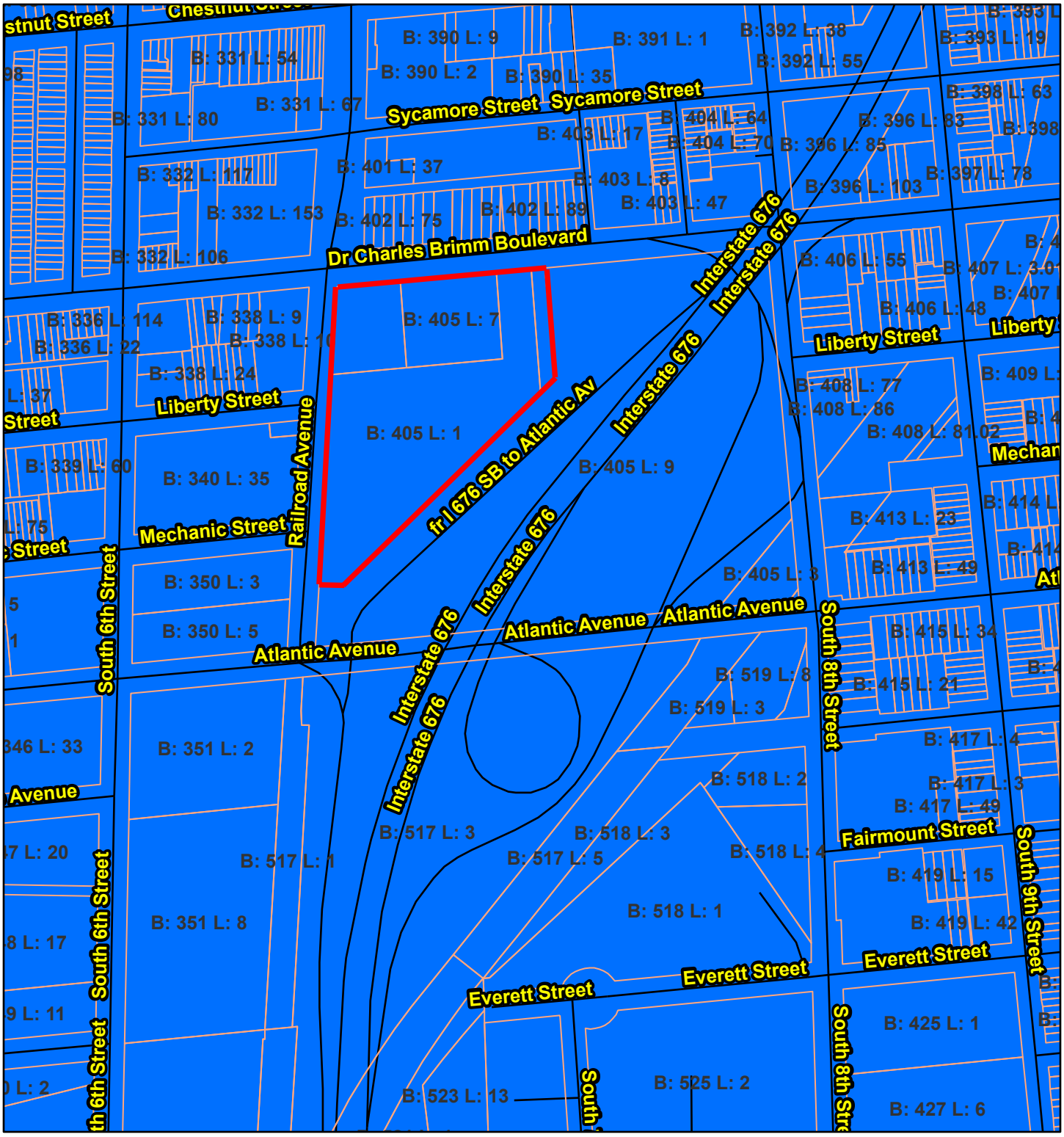
7:8-1.4 Severability

If the provisions of any section, subsection, paragraph, or clause of this chapter shall be judged invalid by a court of competent jurisdiction, such order or judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, or clause of this chapter.

7:8-1.5 Relationship to other regulatory programs

(a) Nothing in this chapter shall be construed as preventing the Department or other agencies or entities from imposing additional or more stringent stormwater management requirements necessary to implement the purposes of any enabling legislation including those measures necessary to achieve the Surface Water Quality Standards at N.J.A.C. 7:9B.

NJ-GeoWeb Urban Enterprise Zone



4/23/2024, 10:05:36 AM

1:4,514

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

- County Boundaries
- Parcels Data (Block and Lot)
- Road Centerlines of NJ
- Urban Enterprise Zones

Esri Community Maps Contributors, City of Philadelphia, data.pa.gov, New Jersey Office of GIS, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

New Jersey Department of Environmental Protection

Esri Community Maps Contributors, City of Philadelphia, data.pa.gov, New Jersey Office of GIS, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA,

ii. N.J.A.C. 7:8-5.7(c)2 and N.J.A.C. 7:8-5.7(d)2 both allow an alternative to calculating the current and projected rainfall precipitation depths by using separate rainfall totals for each county. The 24-hour county rainfall amount provided by NRCS is duplicated here and can be found online at:

https://www.nrcs.usda.gov/sites/default/files/2022-09/NJ%2024%20Hour%20Rainfall%20Data.pdf.

Table 5-1: County-Specific, New Jersey 24-Hour Rainfall Frequency Data

NEW JERSEY 24 HOUR RAINFALL FREQUENCY DATA

Rainfall amounts in Inches

County	1 year	2 year	5 year	10 year	25 year	50 year	100 year
Atlantic	2.72	3.31	4.30	5.16	6.46	7.61	8.90
Bergen	2.75	3.34	4.27	5.07	6.28	7.32	8.47
Burlington	2.77	3.36	4.34	5.18	6.45	7.56	8.81
Camden	2.73	3.31	4.25	5.06	6.28	7.34	8.52
Cape May	2.67	3.25	4.22	5.07	6.34	7.47	8.73
Cumberland	2.69	3.27	4.25	5.09	6.37	7.49	8.76
Essex	2.85	3.44	4.40	5.22	6.44	7.49	8.66
Gloucester	2.71	3.29	4.24	5.05	6.29	7.36	8.55
Hudson	2.73	3.31	4.23	5.02	6.19	7.20	8.31
Hunterdon	2.80	3.38	4.26	5.00	6.09	7.02	8.03
Mercer	2.74	3.31	4.23	5.01	6.19	7.20	8.33
Middlesex	2.76	3.35	4.30	5.12	6.36	7.43	8.63
Monmouth	2.79	3.38	4.38	5.23	6.53	7.66	8.94
Morris	2.94	3.54	4.47	5.24	6.37	7.32	8.35
Ocean	2.81	3.42	4.45	5.33	6.68	7.87	9.20
Passaic	2.87	3.47	4.42	5.23	6.43	7.47	8.62
Salem	2.69	3.26	4.20	5.00	6.22	7.28	8.45
Somerset	2.76	3.34	4.25	5.01	6.15	7.13	8.21
Sussex	2.68	3.22	4.02	4.70	5.72	6.60	7.58
Union	2.80	3.39	4.35	5.17	6.42	7.49	8.69
Warren	2.78	3.34	4.18	4.89	5.93	6.83	7.82

Notes: The average point rainfall amounts listed above were developed from data contained in NOAA Atlas 14 Volume 2.

Point rainfall estimates for specific locations may be obtained from the Precipitation Frequency Data Server located at http://www.nws.noaa.gov/ohd/hdsc/

For most hydrologic design procedures, the rainfall amounts listed above may be rounded to the nearest tenth of an inch.

b. N.J.A.C.7:8-5.7(c) requires the precipitation depths of the current 2-, 10- and 100-year storm events be determined by multiplying the NOAA rainfall data with the current precipitation adjustment factors in Table 5-5 at N.J.A.C.7:8-5.7(c)2. N.J.A.C.7:8-5.7(d) requires the precipitation depths of the projected 2-, 10- and 100-year storm events be determined by multiplying the NOAA rainfall data with the future precipitation change factors in Table 5-6 at N.J.A.C.7:8-5.7(d). Table 5-5 and Table 5-6 from the Rules are reproduced below.

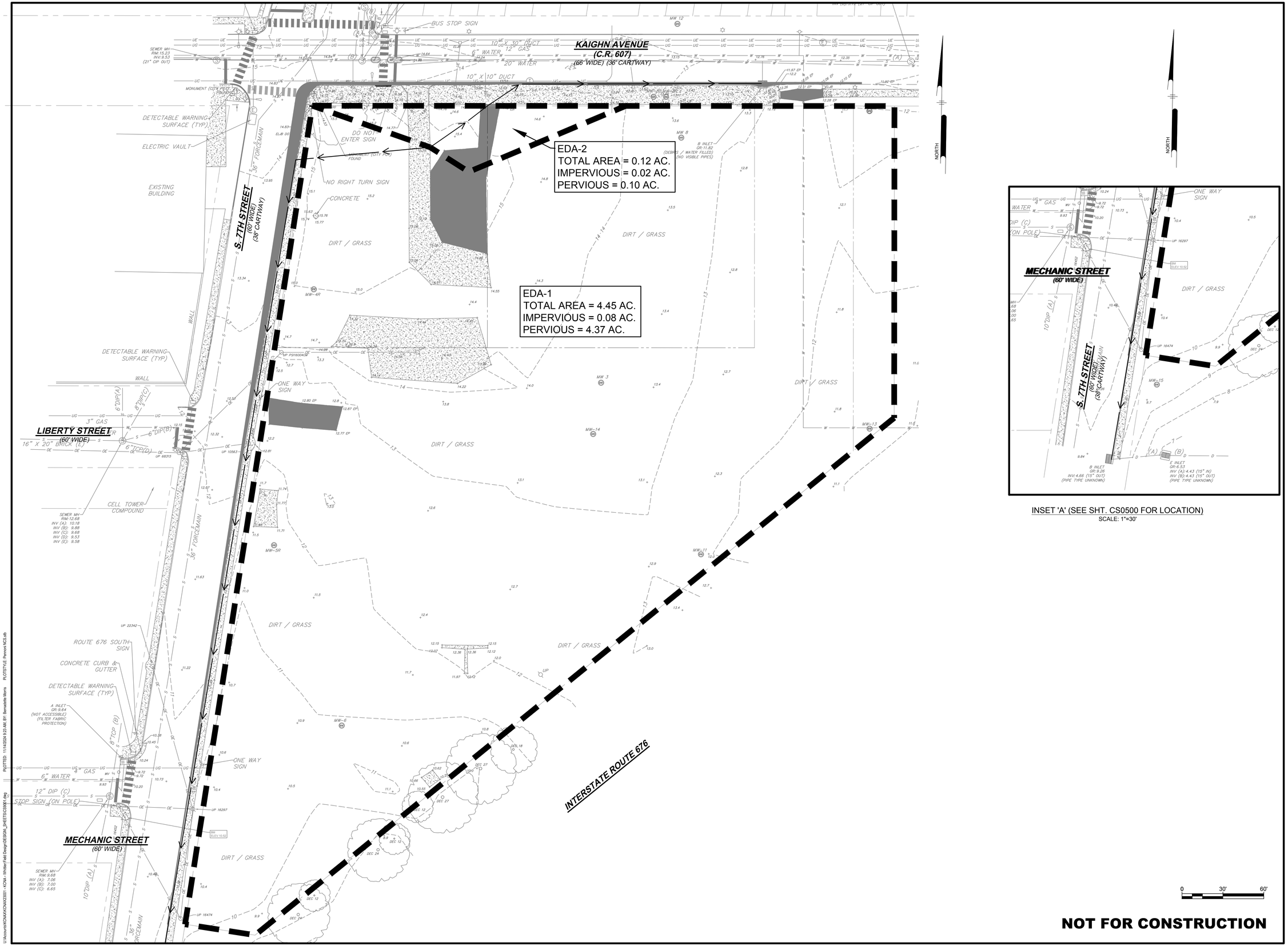
Current Precipitation Adjustment Factors at N.J.A.C. 7:8-5.7(c) as Table 5-5

County	Current Precipitation Adjustment Factors		
	2-year Design Storm	10-year Design Storm	100-year Design Storm
Atlantic	1.01	1.02	1.03
Bergen	1.01	1.03	1.06
Burlington	0.99	1.01	1.04
Camden	1.03	1.04	1.05
Cape May	1.03	1.03	1.04
Cumberland	1.03	1.03	1.01
Essex	1.01	1.03	1.06
Gloucester	1.05	1.06	1.06
Hudson	1.03	1.05	1.09
Hunterdon	1.02	1.05	1.13
Mercer	1.01	1.02	1.04
Middlesex	1.00	1.01	1.03
Monmouth	1.00	1.01	1.02
Morris	1.01	1.03	1.06
Ocean	1.00	1.01	1.03
Passaic	1.00	1.02	1.05
Salem	1.02	1.03	1.03
Somerset	1.00	1.03	1.09
Sussex	1.03	1.04	1.07
Union	1.01	1.03	1.06
Warren	1.02	1.07	1.15

Future Precipitation Change Factors at N.J.A.C. 7:8-5.7(d) as Table 5-6

County	Future Precipitation Change Factors		
	2-year Design Storm	10-year Design Storm	100-year Design Storm
Atlantic	1.22	1.24	1.39
Bergen	1.20	1.23	1.37
Burlington	1.17	1.18	1.32
Camden	1.18	1.22	1.39
Cape May	1.21	1.24	1.32
Cumberland	1.20	1.21	1.39
Essex	1.19	1.22	1.33
Gloucester	1.19	1.23	1.41
Hudson	1.19	1.19	1.23
Hunterdon	1.19	1.23	1.42
Mercer	1.16	1.17	1.36
Middlesex	1.19	1.21	1.33
Monmouth	1.19	1.19	1.26
Morris	1.23	1.28	1.46
Ocean	1.18	1.19	1.24
Passaic	1.21	1.27	1.50
Salem	1.20	1.23	1.32
Somerset	1.19	1.24	1.48
Sussex	1.24	1.29	1.50
Union	1.20	1.23	1.35
Warren	1.20	1.25	1.37

Appendix I



INSET 'A' (SEE SHT. CS0500 FOR LOCATION)
SCALE: 1"=30'

0 30' 60'

NOT FOR CONSTRUCTION

Pennoni

PENNONI ASSOCIATES INC.
2 Aquarium Drive, Suite 320
Camden, NJ 08103
P 856.683.8800
NJ. CA NO. GA28033300

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

NJ CERTIFICATE OF AUTHORIZATION NO. GA28033300

JOSEPH RADAY
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO. GE043768

10/25/24

PRE-DEVELOPED DRAINAGE AREA PLAN

WHITTIER FIELD
7TH AVENUE & KAIGHN AVENUE
CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY

KIPP COOPER NORCROSS, INC.
60 PARK PLACE, SUITE 802
NEWARK, NJ 07102

NO.	DATE	REVISIONS	BY

PROJECT	KCNAX23001
DATE	MAY 17, 2024
DRAWING SCALE	1"=30'
DRAWN BY	BF
APPROVED BY	JJR

CS9001

SHEET 1 OF 3

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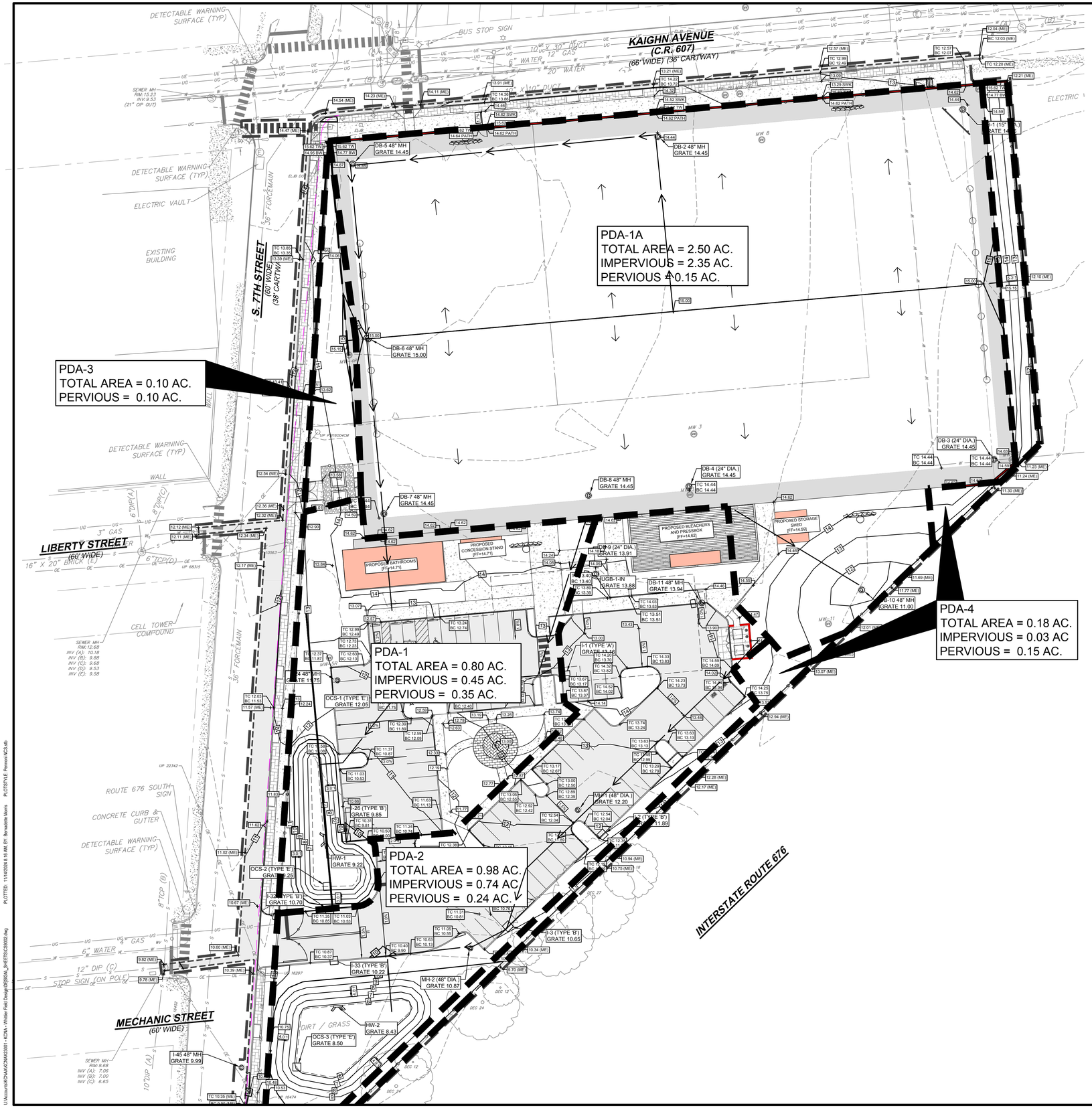

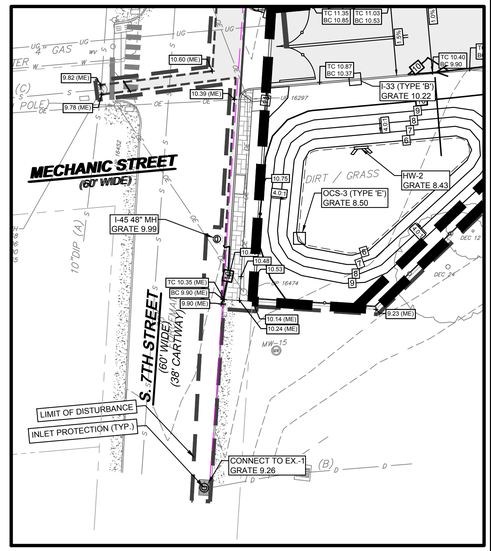

INSET 'A' (SEE SHT. CS0500 FOR LOCATION)
SCALE: 1"=30'

GRADING LEGEND:

- CONTOUR ELEVATION
- SPOT ELEVATION
- LIMIT OF DISTURBANCE

NOTES:

1. CONSTRUCT DEMARCATION FABRIC UNDER ALL IMPROVEMENTS.
2. SITE TO BE CAPPED WITH MINIMUM 4" TOPSOIL AND 8" DGA OR 6" TOPSOIL AND 6" DGA IN LANDSCAPE AREAS. TOPSOIL TO BE CERTIFIED CLEAN TOPSOIL.

NOT FOR CONSTRUCTION

Pennoni

PENNONI ASSOCIATES INC.
2 Aquarium Drive, Suite 320
Camden, NJ 08103
P 856.683.8000
NJ. CA NO. GA28033300

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

NJ CERTIFICATE OF AUTHORIZATION NO. GA28033300

JOSEPH RADAY
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO. GE043768

10/25/24

WHITTIER FIELD
7TH AVENUE & KAIGHN AVENUE
CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY

POST DEVELOPED DRAINAGE AREA PLAN

KIPP COOPER NORCROSS, INC.
60 PARK PLACE, SUITE 802
NEWARK, NJ 07102

NO.	DATE	REVISIONS	BY

PROJECT	KCNAX23001
DATE	MAY 17, 2024
DRAWING SCALE	1"=30'
DRAWN BY	BF
APPROVED BY	JJR

CS9002

SHEET 2 OF 3

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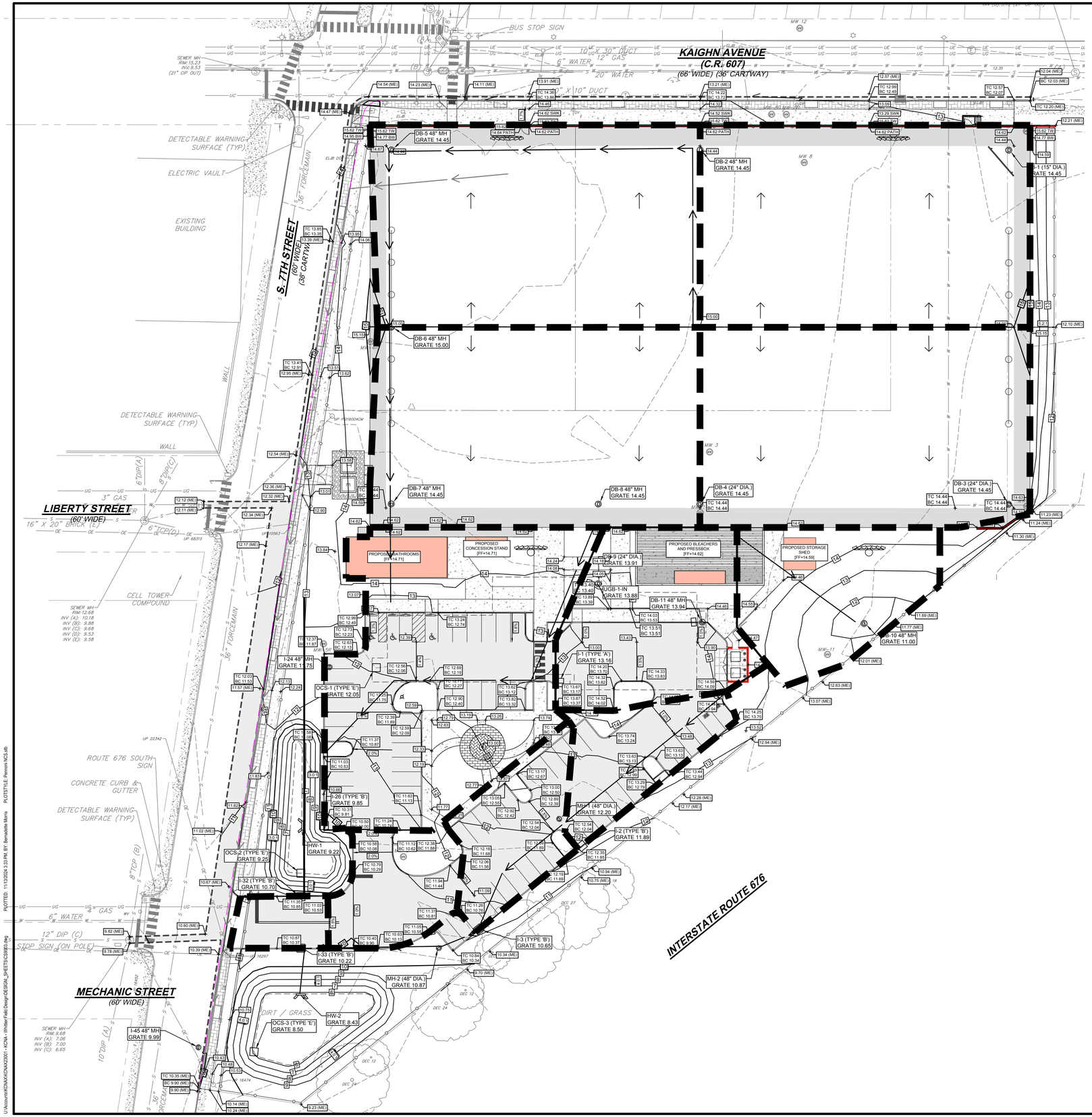

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NOT FOR CONSTRUCTION

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Pennoni

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F 856.683.8033300
NJ. CA NO. GA28033300

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

NJ CERTIFICATE OF AUTHORIZATION NO. GA28033300

JOSEPH RADAY
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO. GE043768

10/25/24

WHITTIER FIELD

7TH AVENUE & KAIGHN AVENUE
CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY

INLET DRAINAGE AREA PLAN

KIPP COOPER NORCROSS, INC.
60 PARK PLACE, SUITE 802
NEWARK, NJ 07102

NO.	DATE	REVISIONS	BY

PROJECT	KCNAX23001
DATE	MAY 17, 2024
DRAWING SCALE	1"=30'
DRAWN BY	BF
APPROVED BY	JJR

CS9003

SHEET 3 OF 3